Published in final edited form as:

J Aggress Maltreat Trauma. 2016 ; 25(1): 110–124. doi:10.1080/10926771.2015.1081664.

The Relation Between Compulsive Sexual Behaviors and Aggression in a Substance-Dependent Population

JoAnna Elmquist, M.A. [doctoral student],

Clinical Psychology Department, University of Tennessee- Knoxville

Ryan C. Shorey, Ph.D. [assistant professor],

Clinical Psychology Department, Ohio University

Scott Anderson, Ph.D. [Clinical Director], and

Clinical Director, Cornerstone of Recovery, Louisville, TN

Gregory L. Stuart, Ph.D. [professor]

Clinical Psychology Department, University of Tennessee- Knoxville

Abstract

Research supports a high comorbidity between compulsive sexual behaviors (CSBs) and SUDs, which are both classified by increased impulsivity. Literature has also indicated that increased impulsivity and substance use are associated with aggression. However, no known research has examined the relationship between CSBs and aggression among a substance dependent population. The purpose of the current study was to examine this relationship. Participants included 349 male patients in treatment for SUDs. Results indicated that after controlling for alcohol and drug use and problems and age, CSBs were significantly associated with total aggression, aggressive attitudes, physical aggression, and verbal aggression. This is the first known study to examine this relationship, thus continued research is needed to extend and replicate these findings.

Keywords

compulsive sexual behaviors; substance dependence; physical aggression; verbal aggression; sexual addiction; alcohol abuse; drug abuse

The etiology, mechanisms, and maintaining factors of compulsive sexual behaviors (CSBs) have been a growing focus of research (Karim & Chaudhri, 2012; Najavits, Lung, Froias, Paull, & Bailey, 2014). Compulsive sexual behaviors are thought to be a type of behavioral addiction that is defined as “any sexually-related compulsive behavior which interferes with normal living and causes severe stress on family, friends, loved ones, and one’s environment” (Blum et al., 2012, p. 37; IITAP, 2011). Although CSBs are associated with the increased likelihood for impairment and distress (Miner & Coleman, 2013; Najavits et al., 2014), CSBs are not recognized as a diagnosable mental health disorder in the current Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychological

Association, 2013). As a result, there is no standardized term to classify problematic sexual behaviors, which has resulted in the use of different terms across research studies (Stavro, Rizkallah, Dinh-Williams, Chaisson, & Potvin, 2013). Specifically, some problematic sexual behaviors have been referred to as hypersexuality, sexual addiction, and sexual compulsivity (Stavro et al., 2013). Due to the fact that the DSM-5 does not currently recognize problematic sexual behaviors as a diagnosable mental disorder, the term CSB will be used in the current study, consistent with recent research (Karim & Chaudhri, 2012; Najavits et al., 2014).

Existing research has consistently demonstrated high rates of co-occurrence between CSBs and substance use disorders (SUDs,) with comorbidity rates ranging from 40% to 60% (Sussman, Lisha, & Griffiths, 2011; Washton, 1989; Wright, 2010). Given the high rates of co-occurrence between CSBs and SUDs, research has attempted to further explicate the relationship between CSBs and SUDs, and behaviors that are common in both problems. Aggression is one potentially important factor that could elucidate this relationship, as past work has consistently demonstrated high co-occurrence between CSBs and SUDs, as well as increased aggression among individuals with SUDs. However, existing literature has yet to clarify whether CSBs are associated with aggression in any population. It is of particular importance to examine the relationship between CSBs and aggression in substance-dependent population due to the increased prevalence of CSBs and aggression among this population.

SUDs and Aggression

The relationship between substance use and aggression is robust and well documented, both theoretically and empirically. For example, Chermack and colleagues (2000) examined the prevalence of partner and non-partner aggression among men and women seeking treatment for SUDs and found that the prevalence of partner and non-partner aggression in the 12 months prior to treatment was 57% and 53%, respectively. Stuart and colleagues (2013a) examined the temporal relationship between substance use and IPV among female perpetrators and found that participants were more likely to perpetrate partner aggression on both heavy and non-heavy drinking days. The temporal relationship between drug use and partner aggression has also been examined with results indicating that drug use increases the odds of IPV in some cases (Stuart et al., 2013a). Furthermore, Crane and colleagues (2014) examined partner aggression among men and women with alcohol use disorders, drug use disorders, and combined alcohol and drug use disorders. Results indicated that alcohol use, cocaine use, combined alcohol and cannabis use, and combined alcohol and cocaine use were significantly associated with partner aggression.

Existing research has also demonstrated that substance use treatment is associated with decreased aggression (Stuart et al., 2009). O'Farrell, Murphy, Stephan, Fals-Stewart, and Murphy (2004) examined the rates of partner aggression perpetration among men in treatment for alcohol use disorders and found that the rates of partner aggression perpetration significantly decreased following treatment. Reductions in partner aggression were enhanced for patients who remained remitted compared to patients who relapsed to substance use (O'Farrell et al., 2004). Additionally, Stuart and colleagues (2013b) examined

the efficacy of a brief motivational alcohol intervention in reducing partner aggression and substance use among men arrested for domestic violence and found significant improvements in alcohol use and partner aggression outcomes 3 and 6-months post-treatment. In sum, the extant literature has supported the significant temporal relationship between substance use and aggression and decreased aggression following substance use treatment.

Theoretical literature posits that the temporal relationship between substance use and aggression is heightened by additional risk factors (Giancola, 2000; Pernanen, 1991). Specifically, the multiple threshold model suggests that additional factors, such as impulsivity, heighten the risk of substance related aggression (Giancola, 2000). Individuals who abuse substances might also misinterpret social cues ultimately increasing the risk for aggression (Leonard & Quigley, 1999). Research further suggests that individuals with impulse control problems are at a heightened risk for engaging in substance related aggression because of a greater misinterpretation of social cues (Foran & O'Leary, 1998; Watkins et al., 2014).

CSBs and Aggression

There is a dearth of research directly examining the relationship between CSBs and aggression. However, research has examined CSBs among sexually aggressive populations, namely convicted sex offenders (Marshall & Marshall, 2006). For example, in a longitudinal investigation of hypersexuality in a convicted sexual offender population, Kingston and Bradford (2013) found that the presence of hypersexuality was associated with long-term sexual violence and non-sexual violence. Although limited research has directly examined the relationship between CSBs and aggression, there are common mechanisms underlying both CSBs and aggression, which could elucidate this potentially important relationship. For example, it has been postulated that CSBs are a form of behavioral addiction that is marked by a difficulty with impulse control (Kingston & Bradford, 2013), which been supported by empirical literature. For example, Lejuez and colleagues (2005) examined risky sexual behaviors (e.g., multiple partners and unprotected sex) and impulsivity in different types of drug users (i.e., heroin and not crack/cocaine; crack/cocaine and not heroin; and both heroin and crack/cocaine) and found that individuals who used only crack/cocaine were more impulsive and engaged in more risky sexual behaviors than the heroin only and heroin and crack/cocaine groups. Additionally, impulsivity was found to fully mediate the relationship between drug choice and risky sexual behaviors.

It is also well documented in theoretical and empirical literature that impulse control problems and impulsivity are significantly associated with aggression (e.g., Smith & Waterman, 2006; Stuart & Holtzworth-Munroe, 2005). In both forensic and non-forensic samples of men and women, increased impulsivity has been found to be a significant predictor of aggression perpetration (Smith & Waterman, 2006). For example, Krakowski & Czobor (2013) examined whether baseline levels of impulsivity predicted subsequent aggression over a 12-week follow-up. Results demonstrated that increased impulsivity at baseline predicted increased aggression throughout the 12-week follow-up period. Additionally, Stanford and colleagues (2003) compared aggressive psychiatric outpatients

and non-aggressive controls on personality measures, including impulsivity, and found that aggressive outpatients scored significantly higher on measures of impulsivity compared to non-aggressive controls.

In sum, based on the previous empirical support linking CSBs to impulsivity and sexual violence, it is plausible that CSBs would be associated with different forms of aggression not previously examined (e.g., physical and verbal aggression). This may be especially true in a substance use population, which is known to have increased rates of aggression.

Current Study

Past work has demonstrated a high co-occurrence between CSBs and SUDs and a significant temporal relationship between SUDs and aggression. Additionally, theory posits that impulsivity is a common mechanism underlying and explaining the complex relationship between CSBs, aggression, and SUDs (Brady, Myrick, McElroy, 1998; Giancola, 2000; Watkins, Maldonado, DiLillo, 2014). According to these theories, individuals with CSBs and SUDs have difficulties with impulse control and impulsivity, which is also a common trait among aggressive individuals (Lejuez, Bornovalova, Daughters, & Curtin, 2005). Specifically, it is theorized that individuals with CSBs, aggression, and SUDs are driven to engage in maladaptive behaviors because of problematic impulse control and impulsivity (Brady et al., 1998). However, there are no known empirical investigations that have directly examined whether CSBs are associated with increased aggression among non-sexually offending populations, particularly populations with comorbid SUDs. The current study sought to extend the existing literature by examining this relationship in a sample of men seeking residential treatment for SUDs. Based on previous research and theory, it was hypothesized that CSBs would predict aggression (i.e., physical, verbal, and attitudinal) among individuals in residential treatment for SUDs.

Method

Participants and Procedure

Patient medical records for all men admitted to a residential treatment facility between December 2013 and August 2014 were included in the current study. This yielded a total sample of 349 men. The treatment facility in which medical records were reviewed is located in the Southeast United States and uses a 12-step philosophy as a basis for treatment. In order to be admitted to the program, individuals have to have a substance use diagnosis and be 25 years or older. The typical length of stay for all patients is between 28 and 35 days. After patients are admitted to the treatment facility, all patients are required to complete a thorough intake assessment phase in which they are asked to answer a number of self-report measures that are used throughout treatment. These self-report measures are included in the patient's medical records, and utilized for research purposes at the treatment facility. The facility's information technology (IT) department scores all measures electronically, providing only total scores for all measures. Prior to data collection, the last author's Institutional Review Board (IRB) approved all procedures.

Patients reported a mean age of 41.9 years ($SD = 10.0$). The majority of participants were diagnosed with alcohol dependence (59.8%) as their primary substance use disorder, followed by opioid dependence (18.3%), alcohol abuse (7.8%), cannabis abuse (2.7%), polysubstance dependence (2.4%), amphetamine dependence (2.4%), sedative dependence (1.8%), cannabis dependence (1.8%), and “other (e.g., cocaine dependence; 3.0%). Ethnically, 88.8% of the sample identified as non-Hispanic Caucasian, 6.3% as African American, 2.9% as Hispanic, and 2.0% as “Other.” At the time of the initial assessment, the marital status of the sample was as follows: 47.9% married, 20.6% never married, 19.1% divorced, 6.2% separated, 2.6% as engaged, 2.4% as remarried, and 1.2% as “Other” (e.g., life partner). According to the Psychiatric Diagnostic Screening Questionnaire (PDSQ; Zimmerman, 2002), comorbid psychopathology was prevalent among the sample with 35.5% reporting depressive symptomatology; 31.5% reporting social anxiety symptomatology; 28.9% reporting generalized anxiety symptomatology; 26.9% reporting PTSD symptomatology; 18.9% reporting agoraphobia symptomatology; 18.4% reporting panic disorder symptomatology; and 5.2% reporting eating disorder symptomatology. Prior to admission to the treatment facility, the majority of participants were on medical leave from their employer ($n = 132$; 37.8%).

Measures

Compulsive sexual behaviors—CSBs were examined using the Sexual Addiction Screening Test-Revised (SAST-R; Carnes, Green, & Carnes, 2010). The SAST-R is a 45-item self-report measure that screens for possible CSBs, and is comprised of three scales (i.e., Core scale and scales measuring behaviors unique to heterosexual and homosexual individuals) and five subscales (i.e., preoccupation, loss of control, relationship disturbance, affective disturbance, and Internet addiction). Sample items include: “Do you hide some of your sexual behaviors from others?”; “Do you feel that your sexual behavior is normal?”; “Do you often find yourself preoccupied with sexual thoughts?” In the current study, only the Core Item Scale was used for all analysis as it provides the most comprehensive assessment of CSBs and is viable for all genders and sexual orientations. The Core Item Scale includes 20 items in which patients are asked to indicate on a “yes”/“no” scale whether each item applies to their experience. All items endorsed as “yes” were coded as “1” while items endorsed as “no” were coded as “0.” Total scores were obtained by summing all items within the Core Item Scale. SAST-R has evidence of adequate reliability (Carnes et al., 2010), with estimates exceeding .79 (Spenhoff, Kruger, Hartmann, & Kobs, 2013).

Aggression—Aggression was assessed using the total aggression scale and three subscales of the Personality Assessment Inventory (PAI; Morey, 1991). The aggression scale “focuses on characteristics and attitudes related to anger, assertiveness, hostility, and aggression,” (Morey & Quigley, 2002, p. 347). Three aggression subscales assess aggressive attitude (AGG-A); physical aggression (AGG-P), and verbal aggression (AGG-V), and a total composite aggression score (AGG) is obtained by summing the three subscales. *T* scores on the composite aggression and aggression subscales of 59 or below suggest minor or no problems with aggression; *T* scores of 60-69 indicate potential problems with irritability, impatience, and temper when upset or frustrated; *T* scores of 70 or above suggest clinically significant levels of anger and hostility, and *T* scores of 82 or above indicate

significant potential for anger and aggression (Morey, 2003; 2007). Existing literature has demonstrated that the aggression subscales have good psychometric properties, with estimates ranging between .82 and .86 (Crawford et al., 2007; Morey, 1991). In the current sample, the range of *T* scores for the composite aggression and three subscales are as follows: (1) the range for Composite Aggression was 32-94; (2) the range for Aggressive Attitudes was 34-84; (3) the range for Physical Aggression was 42-103; and (4) the range for Verbal Aggression was 30-79.

Alcohol and drug use—Alcohol use, including the frequency, quantity, and intensity, in the 12 months prior to treatment was assessed using the 10-item Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, De La Fuente, & Grant, 1993). Consequences related to alcohol use and symptoms of tolerance and/or dependence were also assessed using AUDIT. For example, “How often do you have a drink containing alcohol?”; “How often in the past 12 months have you had a feeling of guilt or remorse after drinking?”; “During the past 12 months have you been unable to remember what happened the night before because of drinking?” Total scores for the AUDIT are obtained by summing all 10-items. Drug use (i.e., use of cannabis; cocaine; hallucinogens/PCP; nonprescribed stimulants, sedatives/hypnotics/ anxiolytics, and opiates; and other substances and drug problems) in the year prior to treatment were assessed using the 14-item Drug Use Disorders Identification TEST (DUDIT; Stuart, Moore, Kahler, & Ramsey 2003; Stuart, Moore, Ramsey, & Kahler, 2004). Sample items include, “About how often did you use cannabis (for example, hash, pot, marijuana, THC, or other)?”; “In the past 12 months, have you or someone else been injured as a result of your drug use?”; “In the past 12 months, has a relative or friend, or doctor or other health worker been concerned about your drug use or suggested you cut down or stop?” Total scores for the DUDIT are obtained by summing all 14-items. The reliability of the AUDIT (Babor, Higgins-Biddle, Saunders, & Monterio, 2001) and DUDIT have been supported by extant literature (Stuart et al., 2003, 2004). Specifically, past work has supported reliability estimates of .83 for the AUDIT (Hays, Merz, Nicholas, 1995) and between .89 and .90 for the DUDIT (Stuart et al., 2003, 2004).

Data Analytic Plan

The relationship between CSBs and aggression among individuals with co-morbid SUDs was examined using the following data analytic plan. First, bivariate correlations among all variables of interest in the current study were examined. Second, hierarchical multiple regression analyses were used to determine whether CSBs significantly predicted aggression above and beyond previously validated predictors of aggression, including age, and alcohol and drug use and problems (O’Leary, 1999; Stuart et al., 2004). The hierarchical multiple regression analyses were conducted in two steps. In the first step, all control variables (i.e., age, alcohol and drug use and problems) were entered. In the second step, CSBs were entered as a predictor. These models were conducted 4 times, once for each aggression scale (attitudinal, physical, verbal, and total aggression).

Results

Table 1 displays means, standard deviations, and bivariate correlations for all variables of interest in the current study. CSBs, as measured by the Sexual Compulsion Core Item Scale, were significantly associated with the composite aggression scale and the aggressive attitudes physical aggression, and verbal aggression subscales. CSBs were also significantly associated with AUDIT, but not DUDIT scores. AUDIT and DUDIT scores were negatively and significantly associated with each other. Age was significantly associated with AUDIT scores, total aggression, aggressive attitudes, physical aggression, and verbal aggression.

Results from the hierarchical regression analyses are presented in Table 2 for the composite aggression scale and the aggression subscales. Results indicated that after controlling for AUDIT and DUDIT scores and age, CSBs was significantly associated with composite aggression score. Results further demonstrated that CSBs were significantly associated with aggressive attitudes, physical aggression, and verbal aggression after controlling for AUDIT and DUDIT scores and age.

Discussion

Research has consistently demonstrated that CSBs and SUDs co-occur at high rates and previous research has also documented a significant relationship between SUDs and aggression. However, to our knowledge, research has yet to examine the relationship between CSBs and aggression among individuals in treatment for SUDs. Thus, in the current study, we examined this relationship.

Consistent with our hypothesis, CSBs were significantly associated with overall aggression, aggressive attitudes, physical aggression, and verbal aggression, even after controlling for alcohol and drug use and age. These results align with previous research demonstrating a significant relationship between SUDs and aggression (Stuart et al., 2009; 2013) and high comorbidity between SUDs and CSBs (Sussman et al., 2011). Despite the preliminary nature of this study, findings also add to the literature and suggest an important relationship between CSBs, an impulse control disorder, and aggression in a high-risk sample (i.e., SUD population).

Furthermore, these results are consistent with the theoretical literature (e.g., see Brady et al., 1998), which posits that impulsivity and impulse control problems are heightened among individuals with CSBs (Kingston & Bradford, 2013; Lejuez, Bornovalova, Daughters, Curtin, 2005) and SUDs (Watkins et al., 2014), and that impulsivity and impulse control problems are associated with aggression (Schafer et al., 2004; Cunradi et al., 2009; Shorey et al., 2011). Thus, it makes theoretical sense that CSBs would be significantly associated with aggression among individuals in treatment for SUDs. It is likely that individuals with comorbid CSBs and SUDs are at an increased risk for significant impulse controls problems, which could lead to more frequent misinterpretation of social cues and ultimately an increased risk for aggression.

Additionally, one potential explanation for the significant relationship between CSBs and aggression in the current sample is the presence of insecure attachment. Past empirical and

theoretical literature has supported a significant relationship between CSBs and insecure attachment (Faisandier, Taylor, Salisbury, 2012). Insecure attachment in adulthood is characterized by “avoidance, marked by extreme independence, and anxiety, marked by extreme dependence, hyperarousal” (Ein-Dor, 2015, p. 112). Consequences associated with insecure attachment include problems with emotion regulation, impulse control, and hyperarousal (Faisandier et al., 2012). Additionally, extant literature has suggested a significant relationship between insecure attachment and aggression, such that batterer, violent offending, and non-violent offending samples report more insecure attachment compared to control samples (Ogilvie, Newman, Todd, & Peck, 2014). Thus, it is possible that the relationship between CSBs and aggression is partially explained by the presence of an insecure attachment.

Implications and Directions for Future Research

As this is the first known study to examine the relationship between CSBs and aggression, continued research is needed to both replicate and extend the current findings. Despite the preliminary nature of this study, results from the current investigation provide important directions for future research. Most importantly, future research should continue to examine the relationship between CSBs and aggression in order to replicate and extend the current findings. For example, in an effort to further understand the relationship between CSBs and aggression, research should examine potential mediators. Impulsivity is one factor that could potentially mediate and ultimately elucidate the relationship between CSBs and aggression. Additionally, the use of different and more diverse samples is of particular importance, as this sample was comprised of mostly non-Hispanic Caucasians. Second, longitudinal research examining whether CSBs predict increased aggression among substance dependent populations is important in increasing our understanding of their association. Finally, we limited our current investigation to men. Future research examining the relationship between CSBs and aggression in a sample of women seeking residential treatment for CSBs would further add to the literature.

In addition to the potentially important research implications, findings from the current study have potential clinical implications. For example, research has documented that CSBs and SUDs are associated with increased impulsivity (Lejuez, Bornovalova, Daughters, & Curtin, 2005; Shorey et al., 2011), and impulsivity is associated with an increased risk for relapse (Evren, Durkaya, Evren, Dalbudak, & Cetin, 2012). Thus, impulsivity is a potentially important target for treatment for substance-dependent populations, particularly individuals high in CSBs. Mindfulness-based interventions are one treatment modality that could potentially be effective in targeting impulsivity among this population as past work has demonstrated that increased mindfulness is associated with lower levels of impulsivity (Peters, Erisman, Upton, Baer, & Roemer, 2011). Furthermore, existing literature has indicated the effectiveness of mindfulness-based interventions in reducing SUD relapse (Bowen & Enkema 2014) and has been proposed as a treatment for aggression (Fix & Fix, 2013; Shorey, Zucosky et al., 2012). Future research examining the effectiveness of mindfulness-based interventions in reducing adverse outcomes (i.e., impulsivity, substance relapse, aggression, CSBs) among individuals seeking treatment for SUDs is needed.

Additionally, extant literature has documented that co-occurring addictions (e.g., CSBs) are associated with negative treatment response (Carnes, Murray, & Charpentier, 2004; 2005). Moreover, individuals with dual addictions, specifically CSBs, are more likely to relapse compared to individuals with a single addiction (Carnes et al., 2004; 2005; Hartman, Ho, Arbour, Hambley, & Lawson, 2012; Wright, 2010). Results from the current study in conjunction with past literature suggest the importance of assessing and treating dual addictions. Moreover, by informing patients about the concept of dual addictions and how they impact treatment, the risk for relapse could be reduced (Carnes et al., 2004). Informing patients of the risk of developing a new, secondary addiction in order to replace the loss of a previous addiction is of particular interest (Carnes et al., 2004).

Limitations

This current study has a number of limitations that need to be considered when interpreting the findings. To begin, causality among the variables of interest cannot be determined due to the cross-sectional design of the study. As such, future research using longitudinal designs is needed in order to determine whether CSBs predict increased aggression in SUD populations over time. Second, the assessment tools used in this study are limited for the following reasons: (1) there are no established criteria to diagnose CSBs, which leads to significant variability in measures of problematic sexual behaviors; (2) the patients' substance use diagnoses were not based on structured diagnostic interviews, thus reducing the reliability of these diagnoses; (3) aggression was assessed using the PAI, which does not allow for the examination of aggression perpetrated against different people (e.g., romantic partners, strangers); and (4) the patients' medical charts contained limited demographic information. Additionally, the sample employed in the current investigation is non-generalizable to more diverse populations as the majority of participants were non-Hispanic Caucasian. Future research using more diverse samples would aid in elucidating the relationship between CSBs and aggression in SUD populations. Finally, the treatment facility in which the current study was conducted only retains total scores for assessment measures (not individual items), thus precluding determination of internal consistency values of the measures for the current study population.

Conclusions

Although past work has documented the high-occurrence between SUDs and CSBs, and significant associations between impulse control problems and aggression and CSBs, research has yet to examine the association between CSBs and aggression in a SUD population. Thus, the current investigation sought to fill this gap in the literature. Results demonstrated that after controlling for gender, total aggression, aggressive attitudes, and physical aggression scores were significantly higher among individuals with comorbid CSBs and SUDs compared to SUDs only. There are a number of limitations to be considered when interpreting these findings and to be addressed through continued research. Despite these limitations and the preliminary nature of this study, these findings help elucidate the relationship between CSBs and aggression.

Acknowledgments

The study was supported, in part, by grant K24AA019707 from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) awarded to the last author. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIAAA or the National Institutes of Health.

References

- American Psychological Association. , editor. Diagnostic and statistical manual of mental disorders: DSM-IV-5. American Psychiatric Publications; 2013.
- Babor TF, Higgins-Biddle JC, Saunders JB, Monteiro MG. The alcohol use disorders identification test. Guidelines for use in primary care. 2001
- Blum K, Werner T, Carnes S, Carnes P, Bowirrat A, Giordano J, Gold M. Sex, drugs, and rock 'n' roll: hypothesizing common mesolimbic activation as a function of reward gene polymorphisms. *Journal of Psychoactive Drugs*. 2012; 44:38–55. [PubMed: 22641964]
- Bowen S, Enkema MC. Relationship between dispositional mindfulness and substance use: Findings from a clinical sample. *Addictive Behaviors*. 2014; 39:532–537. [PubMed: 24290208]
- Brady KT, Myrick H, McElroy S. The relationship between substance use disorders, impulse control disorders, and pathological aggression. *The American Journal on Addictions*. 1998; 7(3):221–230. [PubMed: 9702290]
- Carnes PJ, Murray RE, Charpentier L. Addiction interaction disorder. In: Coombs, RH., editor. *Handbook of addictive disorders: A practical guide to diagnosis and treatment*. John Wiley & Sons; Hoboken, New Jersey: 2004. p. 31–62.
- Carnes PJ, Murray RE, Charpentier L. Bargains with chaos: Sex addicts and addiction interaction disorder. *Sexual Addiction & Compulsivity*. 2005; 12:79–120.
- Carnes P, Green B, Carnes S. The same yet different: Refocusing the Sexual Addiction Screening Test (SAST) to reflect orientation and gender. *Sexual Addiction & Compulsivity*. 2010; 17:7–30.
- Chermack ST, Fuller BE, Blow FC. Predictors of expressed partner and non-partner violence among patients in substance abuse treatment. *Drug and Alcohol Dependence*. 2000; 58:43–54. [PubMed: 10669054]
- Cohen, J. *Statistical power analysis for the behavioral sciences*. 2nd ed. Erlbaum; Hillsdale, NJ: 1988.
- Crane CA, Oberleitner L, Devine S, Easton CJ. Substance use disorders and intimate partner violence perpetration among male and female offenders. *Psychology of Violence*. 2014; 3:322–333. [PubMed: 27011885]
- Crawford EF, Calhoun PS, Braxton LE, Beckham JC. Validity of the personality assessment inventory aggression scales and violence potential index in veterans with PTSD. *Journal of Personality Assessment*. 2007; 88:90–98. [PubMed: 17266419]
- Cunradi CB, Todd M, Duke M, Ames G. Problem drinking, unemployment, and intimate partner violence among a sample of construction industry workers and their partners. *Journal of Family Violence*. 2009; 24:63–74. [PubMed: 22096270]
- Evren C, Durkaya M, Evren B, Dalbudak E, Cetin R. Relationship of relapse with impulsivity, novelty seeking and craving in male alcohol- dependent inpatients. *Drug and Alcohol Review*. 2012; 31:81–90. [PubMed: 21450046]
- Faisandier KM, Taylor JE, Salisbury RM. What does attachment have to do with out-of-control sexual behaviour? *New Zealand Journal of Psychology*. 2012
- Fix RL, Fix ST. The effects of mindfulness-based treatments for aggression: a critical review. *Aggression and Violent Behavior*. 2013; 18:219–227.
- Foran HM, O'Leary KD. Problem drinking, jealousy, and anger control: Variables predicting physical aggression against a partner. *Journal of Family Violence*. 2008; 23(3):141–148.
- Giancola PR. Executive functioning: a conceptual framework for alcohol-related aggression. *Experimental and Clinical Psychopharmacology*. 2000; 8(4):576–597. [PubMed: 11127429]
- Hartman LI, Ho V, Arbour S, Hambley JM, Lawson P. Sexual Addiction and Substance Addiction: Comparing Sexual Addiction Treatment Outcomes Among Clients With and Without Comorbid Substance Use Disorders. *Sexual Addiction & Compulsivity*. 2012; 19(4):284–309.

- Hays RD, Merz JF, Nicholas R. Response burden, reliability, and validity of the CAGE, Short MAST, and AUDIT alcohol screening measures. *Behavior Research Methods, Instruments, & Computers*. 1995; 27(2):277–280.
- Spenhoff M, Kruger TH, Hartmann U, Kobs J. Hypersexual behavior in an online sample of males: associations with personal distress and functional impairment. *The Journal of Sexual Medicine*. 2013; 10(12):2996–3005. [PubMed: 23578375]
- International Institute for Trauma and Addiction Professionals (IITAP). [Retrieved September 10, 20104] FAQs About Sexual Addiction. 2011. from <http://www.sexhelp.com/sex-education/what-is-sex-addiction-faqs>
- Karim R, Chaudhri P. Behavioral addictions: An overview. *Journal of Psychoactive Drugs*. 2012; 44:5–17. [PubMed: 22641961]
- Kingston DA, Bradford JM. Hypersexuality and recidivism among sexual offenders. *Sexual Addiction & Compulsivity*. 2013; 20:91–105.
- Krakowski MI, Czobor P. Depression and impulsivity as pathways to violence: Implications for antiaggressive treatment. *Schizophrenia Bulletin*. 2013; 40:886–894. [PubMed: 23943412]
- Leonard KE, Quigley BM. Drinking and marital aggression in newlyweds: An event - based analysis of drinking and the occurrence of husband marital aggression. *Journal of Studies on Alcohol*. 1999; 60(4):537–545. [PubMed: 10463811]
- Lejuez CW, Bornovalova, Daughters, Curtin. Differences in impulsivity and sexual risk behavior among inner-city crack/cocaine users and heroin users. *Drug and Alcohol Dependence*. 2005; 77:169–175. [PubMed: 15664718]
- Marshall LE, Marshall WL. Sexual addiction in incarcerated sexual offenders. *Sexual Addiction & Compulsivity*. 2006; 13:377–390.
- Miner MH, Coleman E. Compulsive sexual behavior and its relationship to risky sexual behavior. *Sexual Addiction & Compulsivity*. 2013; 20:127–138.
- Morey, LC. Personality Assessment Inventory, Professional manual. Psychological Assessment Resources; Odessa, FL: 1991.
- Morey, LC. Essentials of PAI assessment. John Wiley; New York: 2003.
- Morey, LC. Personality Assessment Inventory: Professional manual. 2nd ed. Psychological Assessment Resources; Odessa, FL: 2007.
- Murphy CM, O'Leary KD. Psychological aggression predicts physical aggression in early marriage. *Journal of Consulting and Clinical Psychology*. 1989; 57:579–582. [PubMed: 2794178]
- Najavits L, Lung J, Froias A, Paull N, Bailey G. A study of multiple behavioral addictions in a substance abuse sample. *Substance Use & Misuse*. 2014; 49:479–484. [PubMed: 24304172]
- O'Farrell TJ, Murphy CM, Stephan SH, Fals-Stewart W, Murphy M. Partner violence before and after couples-based alcoholism treatment for male alcoholic patients: the role of treatment involvement and abstinence. *Journal of Consulting and Clinical Psychology*. 2004; 72:202–217. [PubMed: 15065955]
- Ogilvie CA, Newman E, Todd L, Peck D. Attachment & violent offending: A meta-analysis. *Aggression and Violent Behavior*. 2014; 19(4):322–339.
- Pernanen, K. Alcohol in human violence. Guilford Press; New York, NY: 1991.
- Peters JR, Erisman SM, Upton BT, Baer RA, Roemer L. A preliminary investigation to the relationships between dispositional mindfulness and impulsivity. *Mindfulness*. 2011; 2:228–235.
- Saunders JB, Aasland OG, Babor TF, Grant M. Development of the alcohol use disorders identification test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption- II. *Addiction*. 1993; 88:791–804. [PubMed: 8329970]
- Shorey RC, Brasfield H, Febres J, Stuart GL. The association between impulsivity, trait anger, and the perpetration of intimate partner and general violence among women arrested for domestic violence. *Journal of Interpersonal Violence*. 2011; 26:2681–2697. [PubMed: 21118862]
- Shorey RC, Stuart GL, Moore TM, McNulty JK. The temporal relationship between alcohol, marijuana, angry affect, and dating violence perpetration: A daily diary study with female college students. *Psychology of Addictive Behaviors*. 2014; 28(2):516–523. [PubMed: 24274434]

- Shorey RC, Zucosky H, Brasfield H, Febres J, Cornelius TL, Sage C, Stuart GL. Dating violence prevention programming: Directions for future interventions. *Aggression and Violent Behavior*. 2012; 17:289–296. [PubMed: 22773916]
- Smith P, Waterman M. Self-reported aggression and impulsivity in forensic and non-forensic populations: The role of gender and experience. *Journal of Family Violence*. 2006; 21:425–437.
- Stanford MS, Houston RJ, Villemarette-Pittman NR, Greve KW. Premeditated aggression: clinical assessment and cognitive psychophysiology. *Personality and Individual Differences*. 2003; 34:773–781.
- Stavro K, Rizkallah E, Dinh-Williams L, Chiasson JP, Potvin S. Hypersexuality among a Substance Use Disorder Population. *Sexual Addiction & Compulsivity*. 2013; 20:210–216.
- Stuart GL, Holtzworth-Munroe A. Testing a theoretical model of the relationship between impulsivity, mediating variables, and husband violence. *Journal of Family Violence*. 2005; 20(5):291–303.
- Stuart GL, Moore TM, Elkins SR, O'Farrell TJ, Temple JR, Ramsey SE, Shorey RC. The temporal association between substance use and intimate partner violence among women arrested for domestic violence. *Journal of Consulting and Clinical Psychology*. 2013a; 81:681–690. [PubMed: 23647284]
- Stuart GL, Moore TM, Kahler CW, Ramsey SE. Substance abuse and relationship violence among men court- referred to batterers' intervention programs. *Substance Abuse*. 2003; 24:107–122. [PubMed: 12766378]
- Stuart GL, Moore TM, Ramsey SE, Kahler CW. Hazardous drinking and relationship violence perpetration and victimization in women arrested for domestic violence. *Journal of Studies on Alcohol and Drugs*. 2004; 65:46–53.
- Stuart GL, O'Farrell TJ, Temple JR. Review of the association between treatment for substance misuse and reductions in intimate partner violence. *Substance Use & Misuse*. 2009; 44:1298–1317. [PubMed: 19938919]
- Stuart GL, Shorey RC, Moore TM, Ramsey SE, Kahler CW, O'Farrell TJ, Monti PM. Randomized clinical trial examining the incremental efficacy of a 90- minute motivational alcohol intervention as an adjunct to standard batterer intervention for men. *Addiction*. 2013b; 108:1376–1384. [PubMed: 23414253]
- Sussman S, Lisha N, Griffiths M. Prevalence of the addictions: a problem of the majority or the minority? *Evaluation & the Health Professions*. 2011; 34:3–56. [PubMed: 20876085]
- Washton AM. Cocaine may trigger sexual compulsivity. *US Journal of Drug and Alcohol Dependency*. 1989; 13:8.
- Watkins LE, Maldonado RC, DiLillo D. Hazardous alcohol use and intimate partner aggression among dating couples: The role of impulse control difficulties. *Aggressive Behavior*. 2014; 40(4):369–381. [PubMed: 24464403]
- Wright PJ. A hierarchical linear modeling assessment of dual-addiction status and change in sexual compulsivity over time. *Psychological Reports*. 2010; 107:236–244. [PubMed: 20923068]
- Zimmerman, M. *The Psychiatric Diagnostic Screening Questionnaire: Manual*. Western Psychological Services; Los Angeles: 2002.

Table 1

Descriptive Statistics and Bivariate Correlations among Study Variables

	1	2	3	4	5	6	7	8
1. Age	--							
2. AUDIT	.10	--						
3. DUDIT	-.34**	-.42**	--					
4. SAST-R Core Items	-.04	.15**	.04	--				
5. Aggression	-.22**	.01	.27**	.81**	--			
6. Aggressive Attitudes	-.15**	.06**	.18**	.32**	.88**	--		
7. Physical Aggression	-.26**	.03	.30**	.29**	.86**	.73**	--	
8. Verbal Aggression	-.14**	-.04**	.19**	.21**	.81**	.64**	.60**	--
<i>M</i>	41.93	15.79	7.62	1.33	51.32	50.79	52.48	49.94
<i>SD</i>	10.06	10.91	11.01	2.59	11.93	11.87	11.9	9.86

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

Table 2

Regression Analyses Predicting Aggression

	Verbal Aggression	Physical Aggression	Aggressive Attitude	Aggression Composite
	β (SE)	β (SE)	β (SE)	β (SE)
Model 1	$R^2 = .05$	$R^2 = .14$	$R^2 = .06$	$R^2 = .11$
Age	.09 (.06)	.18 (.06) **	.10 (.06) **	.14 (.07) *
Alcohol Use	.04 (.05)	.18 (.06) **	.16 (.07) **	.14 (.06) *
Drug Use	.18 (.06) **	.32 (.06) ***	.21 (.07)	.23(.07) ***
Model 2	$R^2 = .09$	$R^2 = .20$	$R^2 = .15$	$R^2 = .18$
Age	.09 (.05)	.17 (.06) **	.10 (.06)	.14 (.06) **
Alcohol Use	.00 (.05)	.13 (.06) *	.10 (.06)	.09 (.06)
Drug Use	.16 (.05) **	.28 (.06) ***	.18 (.06) **	.24 (.06) ***
Compulsive Sexual Behaviors	.21 (.20) ***	.26 (.23) ***	.29 (.23) ***	.28 (.23) ***

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