



Published in final edited form as:

*J Subst Use*. 2016 ; 21(4): 349–354. doi:10.3109/14659891.2015.1029021.

## A preliminary investigation of the relationship between early maladaptive schemas and compulsive sexual behaviors in a substance-dependent population

JoAnna Elmquist<sup>1</sup>, Ryan C. Shorey<sup>2</sup>, Scott Anderson<sup>3</sup>, and Gregory L. Stuart<sup>1</sup>

<sup>1</sup>University of Tennessee- Knoxville, 1404 Circle Drive, 204 Austin Peay Bldg, Knoxville, TN 37996

<sup>2</sup>Ohio University, Department of Psychology, 239 Porter Hall, Athens, OH 45701

<sup>3</sup>Cornerstone of Recovery, Louisville, 1214 Topside Road, Louisville, TN 37777

### Abstract

Past research has consistently demonstrated high co-occurrence between substance use disorders (SUDs) and compulsive sexual behaviors (CSBs). Numerous studies have also indicated that maladaptive core beliefs and early maladaptive schemas (EMS) are prevalent among individuals with SUDs and CSBs. However, research has yet to examine the relationship between EMS and CSBs among substance-dependent populations. Thus, the purpose of the current study was to examine this relationship in a sample of 198 men and 62 women in residential treatment for SUDs. Findings demonstrated that the five EMS domains were positively associated with CSBs. Results further demonstrated that patients meeting the cutoff score for CSBs scored significantly higher than patients not meeting the cutoff score for CSBs on the EMS domains of *disconnection/rejection*, *impaired autonomy*, and *impaired limit*. These findings suggest that there is an important and significant relationship between EMS and CSBs among adults in substance use treatment. Results from the current study indicate that EMS may provide a potentially important focus for treatment, particularly among individuals with co-morbid CSBs and SUDs. Given the preliminary nature of this study, continued research is needed to replicate and extend the findings from the current study.

### Keywords

Early maladaptive schemas; compulsive sexual behaviors; substance dependence; sexual addiction

---

There has been a growing impetus to elucidate the etiology and mechanisms of behavioral, non-substance addictions, particularly compulsive sexual behaviors (CSBs; Karim & Chaudhri, 2012; Najavits, Lung, Froias, Paull, & Bailey, 2014). CSBs are classified 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; International Institute for Trauma and Addiction Professionals, 2011). CSBs include but are

not limited to the following symptoms: “legal involvement resulting from sexual behavior; preference for anonymous sex; repeated unsuccessful attempts to stop or reduce excessive or problematic sexual behaviors” (Gold & Heffner, 1998, p. 369). Numerous terms have been used to classify problematic sexual behaviors, including sexual addiction, sexual compulsion, and hypersexuality. For the purposes of the current study, we will refer to problematic sexual behaviors as compulsive sexual behaviors (CSBs) because the current *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; American Psychological Association, 2013) doesn’t currently include a Sexual Addiction diagnosis and the treatment facility where the current study was conducted doesn’t formally give Sexual Addiction diagnoses. Of particular interest is the co-occurrence between CSBs and substance use disorders (SUDs). It is estimated that 40% to 60% of individuals with CSBs also meet diagnostic criteria for a SUD, which is significantly higher than the 6–9% of individuals in the general population who meet criteria for a SUD (Sussman et al., 2011). Given the high rate of co-morbidity between CSBs and SUD, research examining this phenomenon (or co-occurrence) is important. Toward this end, there has been a growing focus on early maladaptive schemas (EMS) with both of these behavioral problems. However, to our knowledge there is no known research that has examined the relationship between EMS and CSBs among individuals with SUDs. This information is potentially important because it could help guide prevention and treatment efforts for individuals with comorbid SUDs and CSBs.

## CSBs and SUDs

Although there is disagreement as to whether CSBs are best conceptualized as an addictive disorder, past work has consistently demonstrated that SUDs and CSBs share common clinical features and biological processes, as both disorders are associated with a loss of control and continued use of the behavior despite negative consequences (Hartman, Ho, Arbour, Hambley, & Lawson, 2012). Additionally, past work has demonstrated high comorbidity between SUDs and CSBs, with SUDs being found to intensify CSBs (Washton, 1989; Wright, 2010). Currently, there are three main theories that have been proposed to explain the relationship between CSBs and SUDs. First, it is believed that individuals with CSBs use alcohol and/or drugs to cope with the shame and negative feelings they might experience as a result of their hypersexuality (McKeague, 2014). Second, the co-morbidity might be due to cross-addiction, which is classified as the cycling between multiple addictions and which is prevalent among individuals in substance use treatment (McKeague, 2014). Third, SUDs and CSBs might co-occur because they were ritualized together. Specifically, “alcohol and/or drugs [may] become part of the sexual ritual of the addict” (McKeague, 2014, p. 211).

## Early Maladaptive Schemas (EMS)

One factor that may influence the etiology, maintenance, and co-occurrence of SUDs and CSBs is EMS. Young and colleagues (2003) defined EMS as “extremely stable and enduring themes, comprised of memories, emotions, cognitions, and bodily sensations regarding oneself and one’s relationship with others, that develop during childhood and are elaborated on throughout the individual’s lifetime, and that are dysfunctional to a significant degree”

(Young et al., 2003, p. 7). It is theorized that EMS develop as a result of negative childhood experiences and serve as an organizational system through which people organize their subsequent feelings, behaviors, and emotions (Young, 1999). In essence, EMS represent core beliefs that are stable across time (Riso et al., 2006). It is also theorized that EMS are core to the development and maintenance of psychopathology, particularly psychopathology that is chronic and enduring in nature (Young et al., 2003). Young and colleagues (2003) proposed 18 EMS that can be grouped into five EMS domains: *disconnection and rejection*, which is characterized by a belief that one's basic needs (e.g., safety, nurturance, and security) will not be met; *impaired autonomy and performance*, which is based on the belief that one doesn't have the skills to function or survive independently; *impaired limits*, which is characterized by an inability to maintain or understand appropriate internal and interpersonal limits; *other directedness*, which is characterized by concentrating and focusing on the needs of others at the expense of one's own needs; and *overvigilance and inhibition*, which involves an excessive focus on setting and attempting to accomplish unrealistic, internal standards and values. Prior research has demonstrated that interventions specifically designed to modify EMS are effective across a range of populations and disorders (Jacob & Arntz; Renner, Arntz, Leeuw, & Huibers, 2013; Sempértegui, Karreman, Arntz, & Bekker, 2013).

## EMS and SUDs

The role of EMS in the etiology and maintenance of SUDs has been a focus of past work. Previous research has consistently demonstrated that EMS are prevalent among individuals seeking treatment for substance use disorders (e.g., Shorey, Stuart, & Anderson, 2012). Moreover, research has demonstrated significant differences between substance-dependent and non-clinical groups on EMS, with the substance-dependent population endorsing significantly higher EMS levels (e.g., Brotchie, Meyer, Copello, Kidney, & Waller 2004; Roper, Dickson, Tinwell, Booth, & McGuire, 2010; Shorey, Stuart, & Anderson, 2013a; 2014). Additionally, in one study comparing EMS among alcohol and drug dependent populations, results indicated that the two groups did not significantly differ on many of the EMS (Shorey, Stuart, & Anderson, 2013b). Additionally, preliminary research has started to examine whether EMS change following treatment for substance dependence (Shorey, Stuart, Anderson, & Strong, 2013, Ball, 2007). For instance, Roper and colleagues (2010) examined changes in EMS among an alcoholic dependent population and found that the alcohol dependent population experienced significant improvements in most EMS following a brief residential treatment for substance use that did not explicitly focus on reducing EMS. In addition, Ball (2007) compared the effectiveness of a schema-focused therapy versus a 12 Step Facilitation Therapy in a sample of men and women seeking treatment for substance dependence. Results indicated that the schema-focused therapy was effective in decreasing EMS and substance use among participants seeking treatment for substance dependence.

## EMS and CSBs

In contrast to the research on EMS and SUDs, limited research has directly examined EMS among individuals with CSBs. Roemmele and colleagues (2011) examined the relationship between EMS and adult risky sexual behaviors (e.g., multiple sexual partners, unprotected

sex) in a sample of college women. Results indicated that the disconnection/rejection EMS domain was a significant predictor of adult risky sexual behaviors. Although limited research has directly examined EMS among individuals with CSBs, past work has identified core beliefs that are associated with the etiology and maintenance of CSBs, which are similar to EMS. For example, four main core beliefs have been proposed to underlie CSBs (McKeague, 2014). First, individuals with CSBs tend to believe that they are bad and unworthy and are to blame for adverse childhood experiences. Second, individuals with CSBs often have a belief that they are defective and unlovable and have an intense fear of rejection and abandonment. The third core belief that may underlie CSBs is the belief that one's basic needs (e.g., safety, nurturance, and security) will not be met. All three of these core beliefs are consistent with the *disconnection/rejection* schema domain. The final core belief is that personal needs can only be fulfilled through sex or a relationship, which increases the likelihood for an intensified dependence on others. This core belief is the most akin to the *impaired autonomy and performance* schema domain. In sum, although there is limited research directly examining EMS among individuals with CSBs, the core beliefs that are believed to underlie CSBs are similar to some of the central themes of EMS domains.

## Current Study

Based on previous research and theory, it is possible that EMS may be associated with CSBs among individuals in SUD treatment. However, to date, no research has examined this empirically. Knowledge of this association is important because SUDs and CSBs have high rates of co-occurrence; thus, research elucidating the relationship between CSBs and SUDs and the mechanisms contributing to both could ultimately help inform treatment. The purpose of the present study was to examine the relationship between EMS and CSBs in a sample of men and women in residential treatment for a SUD. Based on prior research and theory it was hypothesized that individuals with co-morbid CSBs and SUDs would score higher on the *disconnection/rejection* and *impaired autonomy and performance* schema domains relative to individuals with a SUDs but no CSBs.

## Method

### Participants and Procedure

198 men and 62 women who were admitted to a residential substance use treatment center were included in the current study. The treatment center, which is located in the Southeastern United States, utilizes a 12-step philosophy and strongly emphasizes the use of assessment measures in treatment. Of particular importance is the assessment and treatment of EMS. Patients admitted to this facility typically stay between 28 and 35 days, must be approximately 25 years of age or older, and have a primary substance disorder diagnosis. All patients admitted to the treatment facility go through an initial intake process, which includes medical detoxification, if needed, and an assessment phase in which all patients complete self-report measures to aid in treatment. All study procedures were approved by the last author's Institutional Review Board (IRB).

The majority of participants in the current sample identified as non-Hispanic Caucasian (90.8%), and married (43.5%). Patients' mean age was 41.4 years ( $SD = 10.36$ ) and mean

years of education was 13.88 ( $SD = 2.00$ ). The most frequently diagnosed primary substance disorder was alcohol dependence (54.3%), followed by opioid dependence (21.1%), polysubstance dependence (13.7%), alcohol abuse (3.9%), and “other” (e.g., amphetamine dependence; 7.0%).

## Measures

**EMS**—The Young Schema Questionnaire – Long Form, Third Edition (YSQ-L3; Young & Brown, 2003) was used to evaluate the patients’ EMS. The YSQ-L3 consists of 232 items that assess the 18 EMS and which can be grouped into the five schema domains proposed by Young and colleagues (2003). Patients indicate on a 6-point Likert scale (1= completely untrue of me; 6= describes me perfectly) the extent to which each of the 232 items applies to them. Items scored as 1, 2, or 3 are coded as “0” and believed to be of little relevance to the patient. Items endorsed as 4, 5, or 6 are summed together to compute a total score for each EMS and are considered to be of relevance to the patient (Young & Brown, 2003). Total scores for each EMS domain are obtained from summing all items associated with each domain. The score ranges for each domain are as follows: *disconnection and rejection* (0–408); *impaired autonomy and performance* (0–282); *other directedness* (0–246); *impaired limits* (0–155); and *overvigilance and inhibition* (0–306; Young & Brown, 2003). Research has established that the YSQ-L3 has good reliability and validity (e.g., Cockram, Drummond, & Lee, 2010; Saariaho, Saariaho, Karila, & Joukamaa, 2009).

**Compulsive Sexual Behaviors**—The Sexual Addiction Screening Test-Revised (SAST-R; Carnes, Green, & Carnes, 2010) was used to assess CSBs. The SAST-R consists of 45-items that screen for the presence of potential CSBs. The SAST-R includes a Core scale, which assesses general sexual addiction, as well as subscales measuring preoccupation, loss of control, relationship disturbance, affective disturbance, Internet addiction, and scales assessing behaviors specific to heterosexual and homosexual men and women. For the current study, only the Core scale was used in analyses. Scores on the Core scale range from 0 to 20 and include items, such as “do you ever think your sexual desire is strong than you are?” “has anyone been hurt emotionally because of your sexual behavior?”; “are any of your sexual activities against the law?” (Carnes, Green, & Carnes, 2010). Patients with cutoff scores of 6 or above were coded as “1,” indicating the presence of CSBs (i.e., CSB group), while those with cutoff scores of below 6 were coded as “0” (i.e., absence of CSBs; Non-CSB group). Existing research has demonstrated that the SAST-R has adequate reliability and validity (Carnes et al., 2010).

**Alcohol Use**—The Alcohol Use Disorders Identification Test was used to measure the frequency, quantity, and intensity of drinking in the year prior to treatment (AUDIT; Saunders, Aasland, Babor, De La Fuente, & Grant, 1993). The AUDIT includes items that assess symptoms of dependence and tolerance and alcohol-related consequences. Existing research has indicated that the AUDIT has good validity and reliability (Babor, Higgins-Biddle, Saunders, & Monterio, 2001).

**Drug Use**—Drug use and problems related to drug use in the year prior to treatment were assessed with the Drug Use Disorders Identification TEST (DUDIT; Stuart, Moore,

Kahler, & Ramsey 2003; Stuart, Moore, Ramsey, & Kahler, 2004), which is a 14-item self-report assessment. The DUDIT assesses the use of the following substances: cannabis; cocaine; hallucinogens/PCP; nonprescribed stimulants, sedatives/hypnotics/anxiolytics, and opiates; and other substances. Existing research has indicated that the DUDIT has good reliability (e.g.,  $\alpha = .89-.90$ ; Stuart et al., 2003, 2004).

## Results

Descriptive statistics and bivariate correlations among all study variables are presented in Table 1. Continuous scores for CSBs were used in correlation analyses, while the dichotomized scores were used to determine whether the groups (i.e., CSB and Non-CSB group) differed on schema domains. Results demonstrated that CSBs were significantly and positively associated with alcohol use, but not drug use. CSBs were unrelated to age and education level. Results also demonstrated that CSBs were significantly and positively associated with all five-EMS domains.

In order to determine whether the CSB and Non-CSB groups differed by gender, chi-square analysis was utilized. Results demonstrated that the groups did not significantly differ by gender,  $\chi^2 (DF = 13) = 17.11, p > .05$ . Furthermore, we examined whether individuals meeting the cutoff score for CSBs differed from individuals not meeting the CSBs cutoff score on alcohol and drug use. Independent samples *t*-tests were utilized for these analyses. Results demonstrated that the groups significantly differed on alcohol use,  $t(256) = .48, p = .05$ . Alcohol use was therefore included as a covariate in the remaining analyses due to the significant difference between groups.

Next, we examined whether the CSB and Non-CSB groups differed on the EMS domains, while controlling for alcohol use, using a Multivariate Analysis of Covariance (MANCOVA). Results demonstrated that the CSB and Non-CSB groups significantly differed on EMS domains,  $F(5, 240) = 16.27, p < .001$ . In order to determine which EMS domains were significantly different between groups, follow-up analyses with Analyses of Covariance (ANCOVAs) were utilized. Results are presented in Table 2. We applied a Bonferroni correction and set our alpha level to .003 to reduce the likelihood of Type 1 error. Results demonstrated that the groups significantly differed on three of the EMS domains. Specifically, the CSB group scored significantly higher than the Non-CSB group on the domains of *disconnection/rejection*, *impaired autonomy*, and *impaired limits*. We also computed effect sizes using the recommendations proposed by Cohen (1988). As displayed in Table 2, the effect size differences between groups on *disconnection/rejection*, *impaired autonomy and performance*, and *impaired limits* fell within the medium range (Cohen, 1988).

## Discussion

Past work has attempted to elucidate the relationship between CSBs and SUDs, and has demonstrated high co-occurrence between these two addictive behaviors. In order to further understand the comorbidity between CSBs and SUDs, additional research is needed that examines the unique characteristics of individuals with co-morbid SUDs and CSBs. Early



maladaptive schemas (EMS) provides one important avenue of research, as EMS have been demonstrated to be prevalent among SUD samples and are believed to underlie psychopathology that is chronic in nature, such as SUDs and CSBs. Thus, the purpose of the current study was to examine the relationship between EMS and CSBs in a sample of adults in residential substance use treatment. An additional goal of this study was to directly compare individuals with and without CSBs on EMS domains.

Analyses examining the relationship between CSBs and SUDs demonstrated that CSBs were significantly and positively associated with all five EMS domains. Results suggest that there is an important and significant relationship between EMS and CSBs among individuals with co-morbid substance dependence.

Consistent with our hypotheses, results demonstrated that the CSB group scored significantly higher than the Non-CSB group on the disconnection/rejection schema domain. This finding is consistent with previous research with college students, which found that the disconnection/rejection schema domain was the most robust predictor of adult risky sexual behaviors (Roemmele & Messman-Moore, 2011). Additionally, this finding is consistent with the core beliefs believed to underlie CSBs. That is, the disconnection/rejection EMS domain is characterized by a fear that one's basic needs will not be met and that significant others will abuse and/or abandon them (Young et al., 2003). Past work has also demonstrated that individuals with CSBs often hold core beliefs that significant others will abandon them (McKeague, 2014), consistent with the disconnection/rejection EMS domain. Thus, it is not surprising that individuals who operate according to the disconnection/rejection schema domain are more likely to engage in CSBs.

Additionally, our hypothesis that the CSB group would score significantly higher than the Non-CSB group on the *impaired autonomy and performance* EMS domain was also supported. This domain is based on the beliefs that one does not have the skills necessary to function or survive independently from others, and that they are unable to prevent bad things from happening to them (Young et al., 2003). The finding that individuals with CSBs are more likely to exhibit this domain makes theoretical sense. One of the main core beliefs underlying CSBs is the belief that personal needs can only be fulfilled through sex or a relationship, which increases the likelihood for an intensified dependence on others (McKeague, 2014). Thus, individuals with the *impaired autonomy and performance* schema domain may use sex and relationships because of the maladaptive belief that they are unable to function independently. Given the preliminary nature of this study, continued research examining this relationship is needed.

Finally, the CSB group scored significantly higher on the *impaired limits* EMS domain. This domain is theorized as an inability to maintain or understand appropriate internal and interpersonal limits and a lack of respect and responsibility to others (Young et al., 2003). Given that CSBs are characterized as a “persistent and escalating pattern or patterns of sexual behaviors acted out despite increasingly negative consequences to self or others” (SASH, 2014; Wright, 2010, p.237) and are associated with negative consequences (e.g., risky sexual behaviors, multiple partners, increased sexually transmitted disease [STD] risk), it makes theoretical sense that the schema of *impaired limits* was elevated among individuals

with CSBs. Individuals who are sexually compulsive might engage in problematic and/or risky sexual behaviors because of their inability to maintain appropriate internal and interpersonal boundaries and their lack of respect for others.

### **Clinical Implications and Directions for Future Research**

Although the findings from the current study are preliminary, the results have potentially important treatment and research implications, pending replication. To begin, past work has demonstrated the prevalence of co-occurring or dual addictions and the negative impact of dual addictions on treatment outcome (Carnes, Murray, & Charpentier, 2004; 2005). For instance, research has shown that dually addicted individuals engage in more sexual compulsiveness, and sexual compulsiveness increases the likelihood of future relapse among dually addicted individuals (Wright, 2010). The net effect of two addictions significantly impacts treatment and is associated with the increased likelihood of future relapse (Carnes et al., 2004; 2005; Hartman, Ho, Arbour, Hambley, & Lawson, 2012; Wright, 2010). In fact, it has been theorized that one of the main predictors of relapse is the failure to identify and treat co-occurring addictions (Carnes et al., 2004; 2005). Thus, it may be important for treatment providers to identify and treat co-occurring addictions in order to reduce the likelihood of future relapse. Furthermore, informing patients of the concept of dual addictions might further reduce the likelihood of relapse, as this could help the patients prepare for the possibility that they might use a new addiction to replace the loss of an old addiction (Carnes et al., 2004).

Additionally, the results from the current study provide directions for continued research. To begin, the findings from the current study need to be replicated and extended with additional samples. Second, past work has demonstrated that core beliefs are important in the etiology and maintenance of CSBs and EMS are prevalent among individuals with SUDs. Research has also indicated that the presence of CSBs negatively impacts treatment outcomes, and sexual addictions are more persistent and difficult to treat than substance disorders (Hartman et al., 2012). This, in conjunction with the findings from the current study, indicates that EMS are a potentially important target for the treatment of addictions, especially dual addictions. Specifically, assessing and tracking EMS throughout treatment could help inform treatment providers of the impact of EMS on treatment, which could ultimately help reduce the likelihood of future relapse.

A number of treatments have been developed to treat CSBs. Cognitive behavioral therapy (CBT) has been found to be effective in reducing sexual addiction. Currently, CBT is the most widely used treatment for CSBs and treatments based on CBT techniques have been found to be the most effective in reducing problematic sexual behaviors (Hartman et al., 2012). However, we are unaware of any treatment outcome study that has also included a focus on EMS, which can be effectively targeted using CBT. Thus, CBT that addresses problematic sexual behaviors and includes a focus on EMS could help improve treatment outcome and reduce the likelihood of relapse rates among individuals with co-morbid CSBs and SUDs.



## Limitations

Results from the current study need to be interpreted while considering the following limitations. First, the cross-sectional nature of the current study precludes determinants of causality. Future research using longitudinal designs will further elucidate the relationship between EMS, CSBs, and SUDs. Second, the generalizability of our findings is limited by the current sample, which was primarily non-Hispanic, Caucasian. Additionally, the current sample included a small sample of women, and additional research using larger female samples is needed. Finally, there is currently no agreed upon diagnostic criteria for CSBs, which limits the measurement of problematic sexual behavior. Furthermore, substance use diagnoses were based on self-report measures and non-structured interviews, which could reduce confidence in the patients' substance diagnoses.

## Conclusions

In summary, the current study is the first known study to examine the relationship between EMS and CSBs in a substance-dependent population. Our results demonstrated that patients with co-morbid CSBs scored significantly higher than patients with only a substance use disorder on 3 out of 5 EMS domains. Future research is needed to address the limitations of the current study and to replicate and extend the current findings. However, the findings from the current study help elucidate the relationship between EMS and CSBs among substance-dependent individuals and the specific characteristics of individuals with these dual addictions.

## Acknowledgments

This work 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 Psychiatric Association. Diagnostic and statistical manual of mental disorders: DSM-IV-5. American Psychiatric Publications; 2013.
- Ball SA. Comparing individual therapies for personality disordered opioid dependent patients. *Journal of personality disorders*. 2007; 21(3):305–321. [PubMed: 17536942]
- 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(1):38–55. [PubMed: 22641964]
- Brotchie J, Meyer C, Copello A, Kidney R, Waller G. Cognitive representations In alcohol and opiate abuse. 2004
- 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(1):7–30.
- Carnes, PJ.; Murray, RE.; Charpentier, L. Addiction interaction disorder. In: Coombs, RH., editor. *Handbook of addictive disorders: A practical guide to diagnosis and treatment*. Hoboken, New Jersey: John Wiley & Sons; 2004. p. 31-62.
- Carnes PJ, Murray RE, Charpentier L. Bargains with chaos: Sex addicts and addition interaction disorder. *Sexual Addiction & Compulsivity*. 2005; 12:79–120.

- Cockram DM, Drummond PD, Lee CW. Role and treatment of early maladaptive schemas in Vietnam veterans with PTSD. *Clinical psychology & psychotherapy*. 2010; 17(3):165–182. [PubMed: 20486158]
- Cohen, J. *Statistical power analysis for the behavioral sciences*. 2. Hillsdale, NJ: Erlbaum; 1988.
- Gold SN, Heffner CL. Sexual addiction: Many conceptions, minimal data. *Clinical Psychology Review*. 1998; 18(3):367–381. [PubMed: 9564585]
- 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.
- Jacob GA, Arntz A. Schema Therapy for Personality Disorders-A Review. *International Journal of Cognitive Therapy*. 2013; 6(2):171–185.
- Karim R, Chaudhri P. Behavioral addictions: An overview. *Journal of Psychoactive Drugs*. 2012; 44(1):5–17. [PubMed: 22641961]
- International Institute for Trauma and Addiction Professionals (IITAP). FAQs About Sexual Addiction. 2011. Retrieved September 10, 2010, from <http://www.sexhelp.com/sex-education/what-is-sex-addiction-faqs>
- McKeague E. Differentiating the female sex addict: A literature review focused on themes of gender difference used to inform recommendations for treating women with sexual addiction. *Sexual Addiction & Compulsivity*. 2014; 21:203–224.
- Miner MH, Coleman E. Compulsive sexual behavior and its relationship to risky sexual behavior. *Sexual Addiction & Compulsivity*. 2013; 20:127–138.
- 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(4):479–484. [PubMed: 24304172]
- Renner F, Arntz A, Leeuw I, Huibers M. Treatment for chronic depression using schema therapy. *Clinical Psychology: Science and Practice*. 2013; 20(2):166–180.
- Roemmele M, Messman-Moore TL. Child abuse, early maladaptive schemas, and risky sexual behavior in college women. *Journal of child sexual abuse*. 2011; 20(3):264–283. [PubMed: 21660814]
- Roper L, Dickson JM, Tinwell C, Booth PG, McGuire J. Maladaptive cognitive schemas in alcohol dependence: Changes associated with a brief residential abstinence program. *Cognitive therapy and research*. 2010; 34(3):207–215.
- Saariaho T, Saariaho A, Karila I, Joukamaa M. The psychometric properties of the Finnish young schema questionnaire in chronic pain patients and a non-clinical sample. *Journal of Behavior Therapy and Experimental Psychiatry*. 2009; 40(1):158–168. [PubMed: 18804198]
- 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(6):791–804. [PubMed: 8329970]
- Sempértegui GA, Karreman A, Arntz A, Bekker MH. Schema therapy for borderline personality disorder: A comprehensive review of its empirical foundations, effectiveness and implementation possibilities. *Clinical psychology review*. 2013; 33(3):426–447. [PubMed: 23422036]
- Shorey RC, Anderson SE, Stuart GL. Gender differences in early maladaptive schemas in a treatment-seeking sample of alcohol-dependent adults. *Substance Use & Misuse*. 2012; 47:108–116. [PubMed: 22060801]
- Shorey RC, Stuart GL, Anderson S. Early maladaptive schemas among young adult male substance abusers: A comparison with a non-clinical group. *Journal of Substance Abuse Treatment*. 2013a; 44:522–527. [PubMed: 23312769]
- Shorey RC, Stuart GL, Anderson S. Differences in early maladaptive schemas in a sample of alcohol- and opioid-dependent women: Do schemas vary across disorders? *Addiction Research & Theory*. 2013b; 21:132–140. [PubMed: 23494129]
- Shorey RC, Stuart GL, Anderson S. Differences in early maladaptive schemas among a sample of young adult female substance abusers and a non-clinical comparison group. *Clinical Psychology & Psychotherapy*. 2014; 21:21–28. [PubMed: 22615132]

- Shorey RC, Stuart GL, Anderson S, Strong DR. Changes in early maladaptive schemas after residential treatment for substance use. *Journal of Clinical Psychology*. 2013; 69:912–922. [PubMed: 23381835]
- Society for the Advancement of Sexual Health. Sexual addiction. 2014. Retrieved September 10, 2014, from <http://sash.net/>
- 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(2):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(1):46–53.
- Sussman S, Lisha N, Griffiths M. Prevalence of the addictions: a problem of the majority or the minority? *Evaluation & the health professions*. 2011; 34(1):3–56. [PubMed: 20876085]
- Washton AM. Cocaine may trigger sexual compulsivity. *US Journal of Drug and Alcohol Dependency*. 1989; 13(6):8.
- 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]
- Young, JE.; Brown, G. *Young schema questionnaire*. New York: Cognitive Therapy Center of New York; 2003.
- Young, JE.; Klosko, JS.; Weishaar, ME. *Schema therapy: A practitioner's guide*. Guilford Press; 2003.

**Table 1**

Means, Standard Deviations, and Bivariate Correlations among Study Variables

	1	2	3	4	5	6	7	8	9	10
1. Age	---									
2. Education	-.08	---								
3. AUDIT	.19**	0.1	---							
4. DUDIT	-.42**	-0.03	-.38**	---						
5. SASTR Core Items	-.04	0.04	.20**	0.08	---					
6. Disconnection Rejection	-.03	0.01	.15**	.16**	.31**	---				
7. Impaired Autonomy and Perfection	-.16*	0.04	0.01	.32**	.29**	.70**	---			
8. Impaired Limits	-.19**	0.03	.15*	.34**	.29**	.55**	.69**	---		
9. Other Directedness	-.11	0.05	0.08	.25**	.24**	.62**	.71**	.60**	---	
10. Overvigilance and Inhibition	-.15*	-0.02	.18**	.19**	.33**	.70**	.65**	.72**	.73**	---
<i>M</i>	41.42	13.88	15.81	11.28	1.39	59.21	25.81	30.39	55.00	72.27
<i>SD</i>	10.26	2.00	11.62	12.88	2.51	74.68	38.42	33.32	48.52	61.42

\*  $p < .05$ ,

\*\*  $p < .01$

**Table 2**

Differences between the CSB and Non-CSB groups on EMS domains

EMS Domain	CSB Group <i>M</i> ( <i>SD</i> )	Non-CSB Group <i>M</i> ( <i>SD</i> )	<i>F</i>	<i>p</i>	<i>d</i>
Disconnection/Rejection	108.78 (105.60)	55.75 (71.02)	<b>1.99</b>	<.001	.60
Impaired Autonomy and Perfection	53.50 (48.39)	23.91 (36.99)	<b>3.05</b>	<.001	.69
Impaired Limits	49.33 (42.77)	29.01 (32.27)	<b>2.01</b>	<.001	.54
Other Directedness	78.50 (53.96)	53.35 (47.91)	1.30	<.10	.49
Overvigilance and Inhibition	112.28 (72.62)	69.52 (59.78)	1.37	<.05	.64

Significant results according to the Bonferroni level ( $p < .003$ ) are in bold