

PSYCHOMETRICS AND COMPARISON OF THE COMPULSIVE SEXUAL
BEHAVIOR INVENTORY AND THE SEXUAL COMPULSIVITY SCALE IN

A MALE COLLEGE STUDENT SAMPLE

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Abstract

Sexual compulsivity describes poorly controlled sexual thoughts, fantasies, urges, and behavior. The purpose of the current study was to examine and compare, utilizing a non-clinical sample, the relative psychometric properties of two existing scales used to assess sexual compulsivity, the Sexual Compulsivity Scale and the Compulsive Sexual Behavior Inventory. Participants were 334 male undergraduate students ranging in age from 18 to 42 years ($M = 19.54$, $SD = 2.16$) enrolled in Introductory Psychology courses at a mid-sized Midwestern university. Zero-order correlation analyses were conducted to identify which sexual behaviors and constructs associated with sexuality were significantly related to scores on the CSBI and the SCS. Examination of the differential patterns of sexuality relations suggests the CSBI and the SCS may measure different aspects of compulsivity. Step-wise regression analyses indicated that the use of drugs and alcohol to gain compliance from a sexual partner, fantasies of impersonal sex, and sexual anxiety were significant predictors for both the CSBI and the SCS. On the CSBI, the final predictor that accounted for a significant increase in variance accounted for was expressing anger, while on the SCS additional variance was accounted for by sexual preoccupation. Implications, limitations, and future directions are discussed.

Psychometrics and Comparison of the Compulsive Sexual Behavior Inventory and the Sexual Compulsivity Scale in a Male College Student Sample

Recent reviews note the use of many different terms to describe patterns of sexual behavior over which people have poor control, including sexual compulsivity, sexual impulsivity, sexual addiction, hyperarousal, Nymphomania, Satyriasis, DonJuanism, and hyperlibido (Bancroft & Vukadinovic, 2004; Barth & Kinder, 1987; Bergner, 2002; Carnes, 1996; Cooper & Lebo, 2001; Kafka, 2003). Carnes (1996) summarizes the different terminologies used in sexology, addiction, trauma, criminology, psychiatry, and psychology literature. Although there is dissent within the field and Herring (2004, p. 38) suggested "the concept of out-of-control sexual behavior is too complex a form of human behavior to exist within the province of any one paradigm," the debate over terminology appears to be a result of theoretical perspectives, not a qualitative difference between conceptualizations.

Compulsive sexual behavior, described as excessive or uncontrolled sexual behavior and/or cognitions that lead to subjective distress, functional impairment, or negative consequences, can encompass most of the different theoretical perspectives (Black, Kehrberg, Flumerfelt, & Schlosser, 1997). The term "sexual compulsion" has been described as less stigmatizing as it can encompass a continuum of sexual behaviors and remains gender non-specific unlike terms Nymphomania or Satyriasis (Black, et. al, 1997; Quadland, 1985). In this model, compulsive sexual behaviors are a combination of cognition and affect (sexual preoccupation), and sexualized behavior over which an individual has poor control. In more practical terms, sexual preoccupation and compulsions are experienced as a wide variety of intrusive sexual fantasies and urges that

result in repetitive sexual behaviors (Coleman, Miner, Ohlerking, & Raymond, 2001).

The poorly controlled behaviors are different quantitatively and qualitatively from those of the “normal” population. The quantitative differences appear in frequency of engagement in sexual fantasy, number of sexual partners, and the number of sexual interactions, when these differences act as a source of distress to an individual (Barth & Kinder, 1987). The qualitative differences include the variety of fantasies, partners, and interactions.

Theoretically, sexual compulsivity has been connected to the symptoms of other psychiatric diagnoses including substance addiction, obsessive compulsive disorder, and impulse control disorders as described in the revised, fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000). In his discussion of substance addictions, Herman (1990) posited any behavior that was the source of intense excitement or pleasure could be addictive, including sexual behavior. In the addictions model of sexual compulsivity an individual "craves" sexual experiences, even if cognitively he/she recognizes the sexual urges are inappropriate or harmful (Lundrigan, 2004). The cravings lead the individual to focus his/her energy on searching for and participating in sexual behaviors that satisfy the craving, but leave the individual with little time or energy to pursue healthier sexual outlets. The addictions model of compulsive sexuality has been criticized for indicating the individual is addicted to all forms of sexual behavior (rather than a single behavior) and for suggesting abstinence as a treatment goal (Coleman, 1987).

Sexual compulsivity has also been related to symptoms of Obsessive-Compulsive Disorder (OCD: e.g., Black et al., 1997; Quadland, 1985). Similar to the pattern of

obsessive thought that is relieved through behavior compulsion in OCD, sexual compulsivity is a pattern of recurrent and persistent thoughts, impulses, or images that are experienced as intrusive or inappropriate, or sexual preoccupation. The preoccupation creates marked distress and/or anxiety that is relieved by engaging in inappropriate or excessive sexual activity. Conceptualizing sexual compulsivity in this manner clearly delineates the level of intrusiveness of sexual thoughts and resulting effects on affect and behavior described in many case studies. While one can draw similarities between sexual compulsivity and OCD, it is not possible to conceptualize sexual compulsivity in its entirety as OCD. Currently, the DSM-IV-TR (APA, 2000) criteria specify that compulsions are intrusive, senseless, and ego dystonic. The compulsions in OCD are resisted, while sexual compulsivity is, at times, embraced. The sexual behaviors are pleasurable, even though there is a small amount of evidence that indicates people with sexual compulsivity later experience guilt and distress resulting from the sexual acts (Black et al., 1997; Quadland, 1985).

Sexually compulsive behaviors have also been conceptualized as atypical impulse control disorders (Barth and Kinder, 1987). Key features of impulse control disorders include 1) a failure to resist an impulse that is harmful to the individual or others, 2) an increasing sense of tension before the impulsive behavior, and 3) experiencing relief or pleasure after the impulsive behavior is performed (APA, 2000). Schneider & Schneider (1991) described anecdotal reports of people with sexual compulsivity meeting these three criteria and Barth and Kinder (1987) hypothesized the sexual compulsions served as an escape from presently existing anxiety rather than a future event (as in OCD), putting these behaviors firmly in the realm of impulse control disorders. Although consistent

with DSM criteria, Bancroft and Vukadinovic (2004) have argued labeling sexual compulsivity as an impulse control disorder does little more than infer a problem of self control for all that the criteria do match.

Although theoretically related to the disorders described above, previous research has indicated in clinical settings persons with compulsive sexual behaviors have been typically assigned a diagnosis of sexual disorder not otherwise specified (Sexual Disorder NOS; Irons & Schneider, 1996). Sexual disorder NOS describes sexual behaviors that include "distress about repeated sexual relationships involving a succession of lovers who are experienced by the individual only as things to be used" (APA, 1994, p. 538), relating to the idea that people with sexual compulsive behaviors are more likely to rely on repetitive fantasies and sexual acts to provide a sense of intimacy rather than develop emotional intimacy with their partners (Schwartz, 1992). Additionally, sexual attitudes that include high levels of fantasy sex, seductive role sex, anonymous sex, paying for sex, pain exchange, object sex, sex with children, exploitation of others, non-mutuality, objectification, dissatisfaction, intensification of shame, and excitement/arousal related to fear, in combination with culture, family history, and neurochemistry, have been cited as theoretically increasing vulnerability to poor control over sexual behaviors (Carnes, 1991).

The prevalence of sexual compulsivity is estimated to be 5% (or larger due to underreporting) in the general population (Kafka, 2003). Many psychological and social impairments have been associated with sexual compulsivity, including generalized distress and co-morbid psychological disorders (Black et al., 1997; Laws & O'Donohue, 1997; Quadland, 1985). Additionally, sexual compulsivity has also been linked

empirically to risky sexual behaviors (Bancroft & Vukadinovic, 2004; Gullette & Lyons, 2005; Kalichman & Cain, 2004).

Anecdotal and survey reports have indicated sexual compulsions were reported to be distressing by a large percentage of people (Black et al., 1997; Quadland, 1985). In addition to distressing the individual, anecdotal evidence suggests distress within the primary family, work, and community environments because of these behaviors (Walters, 1996). For example, investigation of the characteristics of a group of 30 gay and bisexual men reporting symptoms of sexual compulsivity revealed that they reported fewer positive feelings related to love and relaxation after sexual activity than a matched group of gay and bisexual men not reporting symptoms of sexual compulsivity (Quadland, 1985). In addition, the men with sexual compulsivity reported a higher level of anxiety and frustration relating to the sexual thoughts, as well as fewer positive feelings overall.

In a study of 36 participants recruited through a newspaper ad and reporting impairment from sexual compulsivity, results indicated co-morbid Axis I and II diagnoses were experienced by a large percentage of participants in addition to difficulties with sexual compulsivity (Black et al., 1997). The most commonly endorsed co-morbid Axis I diagnoses included mood disorders, anxiety disorders, and substance use disorders. In fact, approximately two-thirds of the sample endorsed meeting criteria for one or more of these disorders. The results estimated a lifetime prevalence of more than one Axis I diagnosis at 61%. Additionally, 44% of the sample met criteria for an Axis II personality disorder, most commonly histrionic (28%), paranoid (25%), and obsessive-compulsive (17%) types. It is interesting to note that many of the individuals in

the study also endorsed symptoms of impulse control disorders (i.e., compulsive buying, gambling, and exercise), but not obsessive-compulsive disorder.

Sexual compulsivity has been described in reference to sexual disorders quite regularly (e.g., Laws & O'Donoghue, 1997). The presence of excessive sexual fantasies, urges, and behaviors that result in clinically significant distress have been noted in exhibitionism, fetishism, voyeurism, froterurism, pedophilia, sexual sadism and masochism, as well as non-specific paraphilias (Laws & O'Donoghue, 1997). Each disorder has its own unique fixation for the compulsivity, but underlying each of them is a recurrent theme of intrusive sexual thoughts and engagement in poorly controlled sexual behaviors. Approximately 21% of participants in a survey of behaviors resulting from sexual compulsivity reported paraphilia related behaviors (Black et al., 1997). Important to interpreting this number is that participants were told not to report illegal behaviors at the onset of the study due to the facility's Institutional Review Board's request. Consequentially, a higher percentage of behaviors may have been reported if not given this restriction. A higher percentage of participants reported fantasies related to paraphilic behaviors that were not acted on.

Self-report of sexual compulsivity has also been related to sexual risk-taking behaviors and potentially to the transmission of sexual transmitted infections (STI; (Bancroft & Vukadinovic, 2004; Gullette & Lyons, 2005; Kalichman & Cain, 2004). In a sample of 662 men and women receiving treatment for STIs in a large clinic, people identified as experiencing sexual compulsivity had more sexual partners, engaged in higher rates of risky behaviors, had more one-time partners, and were four times as likely to have been diagnosed with more than one STI compared to individuals not reporting

symptoms of sexual compulsivity (Kalichman & Cain, 2004). The relationship of risky sexual behavior and sexual compulsivity was replicated for a sample of homosexual males (Bancroft & Vukadinovic, 2004), as well as a sample of college students (Gullette & Lyons, 2005).

Current study

While there has been an increase in research aimed at understanding the notion of out-of-control sexual behavior, much of the existing work has focused on gay men, clinical samples, and sexual behavior within the context of sexually transmitted infections. The excessive focus on sexual compulsivity and its relations with sexual risk taking and STI/HIV infection, as well as substantial debate over the nature of poorly controlled sexual fantasies, urges, and behaviors, has resulted in a limited view of how sexual compulsivity relates more generally to sexuality within a normal population. The purpose of the current study was to examine and compare, utilizing a non-clinical sample, the relative psychometric properties of two existing scales used to assess sexual compulsivity, the Sexual Compulsivity Scale (SCS; Kalichman, Adair, Rompa, Multhauf, Johnson, & Kelly, 1994) and the Compulsive Sexual Behavior Inventory (CSBI; Coleman, Miner, Ohlerking, & Raymond, 2001).

The Sexual Compulsivity Scale (SCS; Kalichman et al., 1994) was originally designed to explore high risk sexual behavior in gay and bisexual men. Kalichman and colleagues intended for the measure to explore personality traits related to sexual compulsivity that could be related to resistance to HIV prevention and intervention attempts. Adapting items from a self-help guide for sexual addiction, the items included in the final scale were intended to reflect obsessive preoccupations with sexual acts and

encounters that would describe the core of sexual compulsivity symptoms. The original reliability and validity results indicated the SCS was internally consistent and higher scores on the SCS were related to increasing self-report of risky sexual behaviors, results Kalichman and Rompa (1995) replicated in two samples (a sample of gay men and a sample of inner-city men and women) thought to be high risk for HIV infection.

The Compulsive Sexual Behavior Inventory (CSBI; Coleman et al., 2001) was developed by the authors due to a perceived failure of previous attempts to develop a sexual compulsivity scale to incorporate all the major components of compulsivity observed in clinical samples. Coleman and colleagues developed their scale to include behaviors associated with paraphilic and non-paraphilic manifestations of compulsivity, including not only obsessive preoccupations, but also lack of impulse control, experience of social and legal consequences resulting from the compulsive behaviors, potential health risks, and interference in daily functioning. They developed a 28-item scale with three subscales (control, abuse, and violence). Each subscale demonstrated adequate reliability. Additionally, the control subscale was able to discriminate between individuals with nonparaphilic compulsivity, pedophilic compulsivity, and a group of normal controls.

Bimbi, Parsons, and Nanin (2005) demonstrated differences in the sexuality and clinical phenomena constructs measured by the SCS (Kalichman et al., 1994) and the CSBI (Coleman et al., 2001) using a sample of 183 gay and bisexual men, although no significant differences between the measures were noted for the frequency of engagement in unprotected sex, specialized sex behaviors, or reported sexual problem areas. The results indicated that differences between groups with different CSBI and SCS scores

were often solely a result of high control subscale scores on the CSBI, regardless of the strength of the SCS score. Participants with high CSBI control scores reported higher levels of generalized psychological distress, depression, anxiety, loneliness, childhood trauma, and impulsivity. Further, participants with high CSBI scores reported higher levels of sexual sensation seeking, sexual impulsivity, sexual obsession, as well as dissatisfaction with their current sexuality and desire for unprotected sexual acts. Overall, the results suggested that while the measures of compulsivity may be related in some ways (i.e., measuring frequency of engagement in unprotected sex), the CSBI may outperform the SCS in picking up on theoretically related clinical and sexual phenomena. The authors suggested that investigation of the scales in large, non-clinical samples were needed to further develop understanding of compulsivity.

Hypotheses

Based on the findings of Bimbi et al. (2005), as well as the fact that both measures purport to measure sexual compulsivity, scores on the CSBI and the SCS are hypothesized to be strongly positively correlated. Concerning sexual behavior, increased sexual compulsivity scores are hypothesized to be related to reports of more frequent sexual behavior, including an increased frequency of masturbation, sexual experiences with a partner, and the number of sexual partners (Bancroft & Vukadinovic, 2004; Barth & Kinder, 1987; Gullette & Lyons, 2005; Kalichman & Cain, 2004). In regards to other sexuality related constructs, CSBI and SCS scores are hypothesized to correlate strongly and positively with self-reports of sexual preoccupation, self-monitoring of sexual behavior, and motivation to seek sexual experiences (Coleman et al., 2001; Lundrigan, 2004; Quadland, 1985). Additionally, sexual compulsivity scores are hypothesized to be

positively correlated with increased frequencies of sexual fantasy (Barth & Kinder, 1987), especially reports of fantasies related to impersonal, violent, and objectified sexual experiences (Carnes, 1991; Schwartz, 1992). In conjunction with fantasies about impersonal sexual experiences, it is hypothesized men reporting high levels of compulsivity will report more fear of sexual relationships (Schwartz, 1992). Reports of negative emotionality related to sexuality (including sexual anxiety, sexual depression, and sexual distress) are hypothesized to be strongly and positively correlated with high scores on sexual compulsivity (Black et al., 1997, Raymond et al., 2003). From these relations, the most parsimonious set of predictors for both the SCS and the CSBI will be explored. It is hypothesized scores on the CSBI will be better accounted for by theoretically related clinical phenomena, while the SCS scores will be better predicted by measures of sexualized thought (Bimbi et al., 2005).

Method

Participants

Three hundred thirty-four male undergraduate students enrolled in Introductory Psychology courses at a mid-sized Midwestern university participated in this study. Participants were limited to only males because previous research has indicated patterns of sexual arousal, fantasies, and behaviors were significantly different for men experiencing sexual compulsivity than women experiencing sexual compulsivity (Alexander & Sherwin, 1991; Black et al., 1997; Quadland, 1985; Raymond et al., 2003). Participants ranged in age from 18 to 42 years ($M = 19.54$, $SD = 2.16$), although it is important to note that approximately 90% of participants were 21 years old or younger. Participants reported they had completed an average of 1.86 semesters of college ($SD =$

2.21). The sample consisted primarily of men who reported they were Caucasian ($n = 310$, 92.8%), of Protestant Christian ($n = 191$, 57.2%) or Catholic ($n = 56$, 16.8%) religious affiliation, and were single and had never been married ($n = 317$, 94.9%). When asked to categorize their sexual orientation, 316 (94.6%) indicated they were heterosexual, 6 (1.8%) indicated they were bisexual, 11 (3.3%) indicated they were homosexual, and 1 (0.3%) participant did not report a sexual orientation.

The 18 – 24 year-old participants ($n = 324$) were compared with the norms for 18 – 24 year-old reported in the National Health and Social Life Survey (NHSL; Laumann, Gagnon, Michael, & Michaels, 1994) in terms of their sexual experiences with vaginal intercourse, as well as receiving and performing oral sex. The proportion of the present sample reporting they had engaged in these behaviors were similar to those reported by Laumann et al., (1994): vaginal intercourse (65% vs. 72%, respectively); receiving oral sex (76.5% vs. 74%); and performing oral sex (63% vs. 72%).

Base rates for risky sexual behavior were estimated in the current sample by examining the percentage of single (unmarried) participants who reported engaging in unprotected vaginal or anal sex (performing or receiving) during the past three months. Of the 317 participants who indicated they were unmarried, 24% indicated they had participated in unprotected vaginal sex and 4% indicated they had participated in unprotected anal sex. Overall, 27% of the sample had engaged in at least one of the defined risky behaviors.

As required by the University's Institutional Review Board, participants were excluded from the study if they were currently receiving or planned to receive psychological or psychiatric treatment for sexual abuse or sexual disorder, or if they had

any pending court hearings for sexually abusive behaviors. Additionally, participants had to be at least 18 years of age and have normal or corrected-to-normal color vision (a restriction for a separate lab-based study for which the present study served as a recruiting tool). A short screening questionnaire asking participants if they met these requirements was administered at the beginning of the study. Of the 383 participants that completed the study, 49 participants' data was removed from the sample because they did not meet the requirements described. Of the 49 excluded cases, 40 reported they were female, one indicated he was 17 years-old, and eight did not respond to the screening question. Participants received one hour of research credit toward their Introductory Psychology course for completing the study.

Materials

Demographics. Participants were asked to provide answers to 10-items concerning basic demographic information in a multiple-choice format, with an option to provide information in a free response format if "other" was selected as an answer. The demographic questions were used to describe the characteristics of the sample and included age, ethnic group, gender, religious affiliation, monthly frequency of attendance at religious services, marital status, number of semesters of college completed, and sexual orientation. Additionally, participants were asked to rate their sexual experiences and fantasies using the Modified Kinsey Heterosexual-Homosexual Rating Scale (Adams, Wright, & Lohr, 1996).

Sexual experiences. The Sexual History Questionnaire (SHQ; Gaither & Sellbom, 2003) consists of 27-questions that are intended to be used as individual variables. The questionnaire provided a structured format for participants to describe sexual behavior

that had occurred during the past three months. The items on the scale assessed the frequency of engaging in oral, vaginal, and anal intercourse, the number of partners with whom they engaged in each behavior during the same time-period, and frequency of masturbation over the previous 3 months. Additionally, the age of first experience with each sexual behavior was assessed.

History of sexual aggression. The Aggressive Sexual Behavior Inventory (ASBI; Mosher, 1998) is a 20-item, Likert-type measure that asks respondents to endorse the extent to which they have engaged in a series of sexually aggressive behaviors. The measure was developed to assess sexual aggression that occurs between men and women in sexual situations. The scale, when administered in its entirety, is considered a homogenous measure of aggressive sexual behavior. The ASBI has six factor scores describing the type of aggression used and includes sexual force, drugs and alcohol, verbal manipulation, angry rejection, anger expression, and threats. Significant correlations with macho personality, $r = .33$; callous sexual attitudes, $r = .53$; violence as manly, $r = .23$; and danger as exciting, $r = .26$ were indicated in results of the scales original validation. In the current study, internal consistency was high (Cronbach's $\alpha = .96$). Factor score reliabilities were also acceptable, ranging from .71 - .87.

Sexual compulsivity. Two (2) measures of sexual compulsivity were utilized in this study. The Compulsive Sexual Behavior Inventory (CSBI), developed for use in clinical practice by Coleman, Miner, Ohlerking, and Raymond (2001) was based on the sexual obsession-compulsion relationship. The measure consists of 28 items divided into three subscales including control, abuse, and violence. Participants are asked to indicate

how concerned they are with a sexual behavior by picking responses from a 5-point rating format ranging from 1 (*Never*) to 5 (*Very Frequently*). Previous research has indicated the CSBI is able to discriminate between groups of men with and without problems relating to compulsive sexual behaviors (Coleman et al., 2001). In the present study, internal consistencies for all subscales were acceptable, Cronbach's α 's = .90 (control), .91 (abuse), and .91 (violence). In all analyses, only the control subscale was used as it represents the subscale intended to assess sexual compulsivity, while the abuse and violence subscales were intended to assess features commonly associated with sexual compulsivity. All references to the CSBI in the remainder of the paper refer to the control subscale only.

The Sexual Compulsivity Scale (SCS; Kalichman, Adair, Rompa, Multhauf, Johnson, & Kelly, 1994) is a 10-item measure that asks participants to rate statements on a 4-point Likert-type scale, with responses ranging from 1 (*Not at all like me*) to 4 (*Very much like me*). Kalichman and Rompa (2001) demonstrated scores on the SCS are related to increased numbers of sexual activities, increased numbers of sexual partners, use of the internet for sexual pursuits, and risk for HIV infection. Internal consistency for the total scale score in this sample was acceptable (Cronbach's α 's = .90).

Sexual tendencies. The Multidimensional Sexuality Questionnaire (MSQ; Snell, Fisher, & Walters, 1993) was designed to measure psychological tendencies associated with sexual relationships. The MSQ (Snell et al., 1993) is a 61-item self-report measure that contains twelve subscales including: Sexual Esteem (positive evaluation of a person's ability to engage sexually with others), Sexual Preoccupation (tendency to engage in sexual obsession), Internal Sexual Control (belief that a person's sexuality is in his/her

control), Sexual Consciousness (engagement in reflection about one's sexuality), Sexual Motivation (desire to be involved in sexual relationships), Sexual Anxiety (feelings of discomfort or anxiety about sexuality), Sexual Assertiveness (a person's ability to be assertive about his/her sexuality), Sexual Depression (negative feelings sexual aspects of a person's life), External Sexual Control (belief that a person's sexuality is outside of his/her control), Self-monitoring (awareness of public's view of a person's sexuality), Fear of Sex (fear of sexual relationships), and Sexual Satisfaction (feelings of satisfaction related to sexuality). All subscales of the MSQ consist of five items and participants are asked to rate how characteristic each item is for them using a 5-point Likert-type scale with responses ranging from 1 (*Not at All*) to 5 (*Very*). Previous investigations of the MSQ suggested that frequency of men's sexual behaviors was predictably related to their scores on the subscales, scores on conceptually related measures, and to reports of sexual experience (Snell, et. al., 1993). In the present sample, internal consistencies were acceptable for all of the subscales (Cronbach's α 's ranging from .62 to .90). Subscales measuring sexual depression, esteem, and preoccupation were not utilized in this study as they were measured by another scale included in the study.

The Sexuality Scale (SS; Snell, 1998) consists of 30-items that ask participants to rate how much they agree or disagree with each statement using a 5-point Likert-type scale and was designed to measure three constructs including sexual esteem, sexual depression, and sexual preoccupation. A previous factor analysis has supported that the items on the SS form three conceptual clusters corresponding to the three 10-item subscales (Snell & Papini, 1989).

The sexual esteem subscale measures the tendency to evaluate one's ability to please a partner in a positive way, with higher scores corresponding to higher esteem. Previous research has indicated men's sexual esteem is positively correlated with instrumental personality traits, sexual assertiveness, and self-monitoring, while women's sexual esteem correlated with expressive personality attributes, self-esteem, and sexual assertiveness (Snell, Fisher, & Schuh, 1992). In the current study, internal consistency of the sexual preoccupation subscale was acceptable (Cronbach's α 's = .90).

The sexual depression subscale assesses feelings of sadness, unhappiness, or depression related to one's sex life. Previous research has demonstrated scores of sexual depression are related to clinical disorders including anxiety and depressive disorders and higher scores on sexual depression have been negatively correlated with levels of sexual assertiveness, sexual consciousness, and locus of control (Snell et al., 1992). In the current study, internal consistency of the sexual preoccupation subscale was acceptable (Cronbach's α 's = .87).

The sexual preoccupation subscale assesses the tendency to think about sex to an excessive degree. Previous research has indicated the sexual preoccupation subscale was related to people's sexual behaviors in a predictable way (Snell et al., 1992) and that men who reported high levels of sexual depression and sexual assertiveness scored higher on the sexual preoccupation subscale. Additionally, more frequent use of erotophilia was associated with higher levels of sexual preoccupation (Snell et al., 1992). In the current study, internal consistency of the sexual preoccupation subscale was acceptable (Cronbach's α 's = .88).

Sexual fantasies. The Sexual Fantasy Questionnaire (SFQ; Wilson, 1988) is a 40-item measure designed as to measure sexual desires, preferences, and activities. The questionnaire asks participants to rate the frequency of engagement in specific types of fantasy using a 6-point Likert-type scale. Past factor analysis indicated the SFQ provided information on four types of fantasy: exploratory (e.g., group sex, promiscuity, homosexuality); intimate (e.g., kissing, oral sex, outdoor love); impersonal (e.g., watching others, fetishism, using objects for stimulation); and sadomasochistic (e.g., whipping or spanking, being forced) (Wilson & Lang, 1981). Within the current sample, internal consistencies for the total score and all factor scores (exploratory, intimate, impersonal, sadomasochistic) were acceptable (Cronbach's α 's = .94, .82, .89, .81, and .89 respectively).

Social desirability. The Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1984) consists of 40-items that require a participant to rate how true or untrue an item is for him/her on a 7-point Likert-type scale. The BIDR is a two-dimensional measure of social desirability and was designed to measure self-deception (reports based on an unconscious tendency to think of self in a positive light) and impression management (intentional effort to report in a way that would be viewed positively by others). Validity testing has indicated self-deception was highly related to measures of defensiveness and coping, while the impression management subscale was highly related to measures on traditional lie and role-playing scales (Paulhus, 1988). In the present study, internal consistencies found were Cronbach's $\alpha = .75$ for the total score, and Cronbach's α 's = .70 and .60 for self deception and impression management respectively.

Procedure

Participants were recruited through the psychology department's on-line registration system. After registering, participants were directed to an on-line testing program (inQsit) available through university's web services (2005). Participants were directed to read a short description of the study, as well as a statement that described their rights as research participants (i.e., ability to discontinue their participation at any time and right to skip items that they did not wish to answer). After reading this statement, participants clicked on a hyperlink to indicate their consent to continue. Clicking on the hyperlink directed participants to the actual survey. Participants then completed the electronic survey containing the self-report measures described above. All measures were presented in a counterbalanced order and the instructions for each self-report measure were included in the presentation of the measures immediately before presentation of each scale's items. All responses were submitted to a confidential database when participants indicated they had completed the survey items they wanted to complete. After submitting the answers, the computer displayed a debriefing form describing the area of research addressed in this study, sources for more information, and contact information for local university and community agencies in case of adverse reactions.

Results

Reliabilities for the CSBI and the SCS

The reliability of the CSBI and the SCS was examined using internal consistencies and item-to-total correlations. For the CSBI, the obtained Cronbach's alpha for the control subscale was 0.90. This estimate of reliability is comparable to the alpha presented by Coleman and colleagues (2001) which was .96. Item means, standard

deviations, item-to-total correlations, and corrected alphas are presented in Table 1 with the complete item content. Item-to-total correlations ranged from .49 to .72. Alpha coefficients remained highly stable with the deletion of any particular scale item and corrected alphas ranged from .89 to .90. Item intercorrelations were also examined. Each item correlated with the other items on the scale and r -values ranged from .18 to .76. Item intercorrelations for the CSBI are presented in Table 2. No published report of item-to-total correlations or item intercorrelations from other samples were available for comparison.

The internal consistency estimate of the SCS was also comparable to estimates demonstrated in past research. In this study, the obtained Cronbach's α was .90, similar to obtained estimates of .86 and .89 in two samples of gay men and .87 in a sample of inner city men and women (Kalichman & Rompa, 1995, 2001). Table 3 presents the complete item content and item-to-total correlations. Each item correlated with the remainder of the scale, with r s ranging from .49 to .78. The item-to-total correlations found in this study are similar to those found by Kalichman and Rompa (1995). Additionally, corrected alphas ranged from .89 to .90 and deletion of any scale item did not significantly alter the obtained alpha coefficients. Item intercorrelations for the SCS were also examined and are presented in Table 4. Consistent with the results reported by Kalichman and Rompa (2001), each item demonstrated a weak to moderate correlation with the other items and r -values ranged from .26 to .77.

Relations between sexual compulsivity measures

As both the CSBI and the SCS purport to measure sexual compulsivity, relations between the two measures were examined using zero-order correlation. Results indicated scores on the CSBI and the SCS were strongly correlated, $r(309) = .64, p \leq .001$.

Relationships between sexuality compulsivity and demographics

Potential differences in CSBI scores by participants' reported ethnicity, marital status, sexual orientation, and religious affiliation were examined using a series of one-way ANOVAs. Potential Type I error was minimized using a Bonferroni correction where the standard level of significance ($p \leq .05$) was divided by four, the number of ANOVA analyses calculated for the categorical demographic variables. After correction, alpha was set at $p \leq .01$ for significance. Results indicated there were no significant differences for reported ethnicity, marital status, sexual orientation, or religious affiliation. The analyses were repeated examining the same variables using SCS scores. Results indicated no significant differences for the demographic variables. See Table 5 for ANOVA results.

Zero-order correlations between CSBI scores, SCS scores, and continuous demographic variables (i.e., age, number of completed semesters, reported length of current romantic relationship, and the frequency of religious attendance in the past month) were calculated. Potential Type I error was minimized using a Bonferroni correction where the standard level of significance ($p \leq .05$) was divided by four, or the number of correlation analyses calculated for the continuous demographic variables. After correction, alpha was set at $p \leq .01$ for significance. For the CSBI, results indicated correlation values ranged from $-.02$ (relationship length) to $.12$ (college semesters), with no statistically significant relations. For the SCS, the correlations ranged from $.00$ (age)

to .12 (relationship length) with no significant relations. Table 7 presents the correlation values.

Social Desirability

Due to the sexual and private questions participants were asked to respond to in the surveys, it seemed important to describe the manner in which participants responded to the items by examining relations between the measures of compulsivity and socially desirable responding. Zero-order correlation analyses were conducted between scores on the CSBI and the self deception and impression management subscales of the Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1984). The analyses were repeated for SCS scores. The results are presented in Table 7, with alpha set at $p \leq .025$ to correct for potential Type I error. Potential Type I error was minimized using a Bonferroni correction where the standard level of significance ($p \leq .05$) was divided by two, or the number of analyses calculated for the social desirability scale scores. Results indicated that CSBI scores were significantly negatively correlated with self-deception ($r(319) = -.34, p \leq .001$), and impression management scores ($r(319) = -.22, p \leq .001$). The same pattern was found between the SCS scores and the two social desirability scores ($r(314) = -.27, p \leq .001$ and $r(314) = -.16, p \leq .001$ respectively). Overall, these results suggested that as individuals reported more sexual compulsivity they were also less likely to respond to the survey items in a manner that was self-deceptive and were less likely to attempt to manage the impression they make on others.

Sexual activity

Correlations between sexual compulsivity and sexual activity were examined separately for the two compulsivity scales using responses to the following individual

items on the Sexual History Questionnaire: masturbation frequency, the frequency of vaginal, anal, and oral (received and performed) sex with a partner, and the number of vaginal, anal, and oral (received and performed) sex partners. To correct for potential Type I errors a Bonferroni correction was utilized and alpha was set at $p \leq .003$ for statistical significance. To obtain this value, the standard level of significance ($p \leq .05$) was divided by 18, the number of correlation analyses calculated for the sexual history variables. Table 6 presents descriptive statistics for each of the examined variables, as well as their correlations with CSBI and SCS scores.

For the CSBI, results indicated positive relations between CSBI scores and the number of partners on whom an individual reported performing oral sex ($r(249) = .23, p \leq .001$). Results for the SCS indicated positive correlations between SCS scores, the number of partners on whom an individual reported performing oral sex ($r(243) = .26, p \leq .001$), number of partners from whom an individual had received oral sex ($r(205) = .28, p \leq .001$), and the frequency of masturbation ($r(279) = .29, p \leq .001$). Overall, the results suggest that increasing compulsivity scores on both the CSBI and the SCS are related to an individual reporting he had performed oral sex with a larger number of partners. Additionally, higher scores of compulsivity on the SCS indicated participants were more likely to report a larger number of oral sex partners, both performing and receiving of oral stimulation, as well as more frequent masturbation.

Zero-order correlation analyses were also conducted to examine the potential relations between reporting past sexually aggressive behaviors and SCS and CSBI scores. To correct for potential Type I errors a Bonferroni correction was utilized and alpha was set at $p \leq .002$ for statistical significance. To obtain this value, the standard level of

significance ($p \leq .05$) was divided by 27, the number of correlation analyses calculated for the continuous, sexuality characteristic variables. Reporting past sexually aggressive behaviors was positively related to scores of compulsivity on the CSBI ($r(322) = .38, p \leq .001$) and the SCS ($r(317) = .31, p \leq .001$). Results indicated positive correlations between scores on the CSBI and the SCS and reports of aggressive sexual acts to gain compliance related to using physical force [CSBI: ($r(322) = .32, p \leq .001$); SCS: ($r(317) = .26, p \leq .001$)], drugs or alcohol [CSBI: ($r(322) = .38, p \leq .001$); SCS: ($r(317) = .35, p \leq .001$)], verbal manipulations [CSBI: ($r(322) = .37, p \leq .001$); SCS: ($r(317) = .29, p \leq .001$)], angry rejections [CSBI: ($r(322) = .32, p \leq .001$); SCS: ($r(317) = .28, p \leq .001$)], expressing anger [CSBI: ($r(322) = .35, p \leq .001$); SCS: ($r(317) = .28, p \leq .001$)], or threats [CSBI: ($r(322) = .32, p \leq .001$); SCS: ($r(317) = .22, p \leq .001$)]. Correlation values for gaining compliance through verbal manipulations, verbal and physical anger, and threats were somewhat stronger on the CSBI than those for the SCS, although there were minimal differences between the values for the use of drugs and alcohol and use of physical force. See Table 7 for a concise view of the data regarding past sexual aggression.

Sexuality-related characteristics

Zero-order correlation analyses were conducted to examine the relations between the measures of compulsivity and sexuality related characteristics. Results were interpreted as significant if $p \leq .002$ to correct for potential Type I error. This significance level was set using a Bonferroni correction where the standard level of significance ($p \leq .05$) was divided by 27, the number of correlation analyses calculated for the continuous,

sexuality characteristic variables. Table 7 presents correlation values between the compulsivity measures and all of the examined sexuality related characteristics.

Self-reports of sexual preoccupation, self-monitoring of sexual behavior, and motivation to seek sexual relationships were found to be positively correlated with scores on the CSBI and the SCS. Results indicated significant correlations between scores on both scales of compulsivity and sexual preoccupation, but the relationship was stronger for the SCS ($r(311) = .44, p \leq .001$) than for the CSBI ($r(319) = .24, p \leq .001$). The pattern of results was the same for scores of sexual motivation and scores on the SCS ($r(311) = .29, p \leq .001$) and the CSBI ($r(318) = .19, p \leq .001$). Lastly, results indicated scores on the CSBI were moderately related to scores of sexual monitoring ($r(311) = .35, p \leq .001$), although the relation was stronger for the CSBI ($r(318) = .47, p \leq .001$). No significant relations between reflecting on the nature of one's sexuality or the tendency to be assertive to obtain sexual experiences and scores on the compulsivity measures resulted.

Regarding sexual fantasies, sexual compulsivity scores demonstrated moderate, positive correlations with self-report of a wide variety of themes in sexual fantasies [CSBI: ($r(321) = .37, p \leq .001$); SCS: ($r(316) = .43, p \leq .001$)]. Correlations between compulsivity and the frequency of fantasies related to exploratory [CSBI: ($r(321) = .36, p \leq .001$); SCS: ($r(316) = .42, p \leq .001$)], impersonal [CSBI: ($r(321) = .42, p \leq .001$); SCS: ($r(316) = .47, p \leq .001$)], and sadomasochistic [CSBI: ($r(321) = .28, p \leq .001$); SCS: ($r(316) = .33, p \leq .001$)] themes were moderate, whereas correlations with the frequency of including intimate themes in fantasies were small [CSBI: ($r(321) = .19, p \leq .001$); SCS: ($r(316) = .25, p \leq .001$)].

Relations between reporting fear of sexual relationships and scores on the CSBI and the SCS were also examined using zero-order correlations. Results indicated a statistically significant but small correlation between CSBI scores ($r(318) = .26, p \leq .001$) and fear of sexual relationships, but a non-significant correlation with SCS scores ($r(311) = .14, p \leq .012$). This pattern of results was replicated for the relation between a person's rating of his confidence as a sexual partner, which was negatively correlated on the CSBI ($r(319) = -.23, p \leq .001$), but not related to SCS scores ($r(311) = -.16, p \leq .005$).

Zero-order correlation analyses were conducted to examine the relations between scores on the CSBI, SCS, and reports of negative emotionality related to sexuality, including sexual anxiety, sexual depression, and sexual distress. Significant relations were demonstrated for the CSBI and SCS between scores on sexual depression [CSBI: ($r(319) = .34, p \leq .001$); SCS: ($r(311) = .29, p \leq .001$)] and sexual anxiety [CSBI: ($r(318) = .50, p \leq .001$); SCS: ($r(311) = .41, p \leq .001$)], although the magnitude of the relations were greater for the CSBI than the SCS. Relations between feeling sexuality is outside of one's control and compulsivity scores were also significantly related to both measures [CSBI: ($r(318) = .36, p \leq .001$); SCS: ($r(311) = .29, p \leq .001$)], but no corresponding inverse relations were found for feeling sexuality was controlled by internal forces. Additionally, there were no significant relations found between the being satisfied with the sexual aspects of one's life and scores on either measure of compulsivity.

Predictors of CSBI and SCS Scores

Exploratory stepwise regression analyses were conducted to determine the most parsimonious set of predictors for the CSBI and the SCS. Potential predictors were identified from the correlate analyses describe above and potential Type I error was

minimized using a Bonferroni correction where scales related to the compulsivity scales at the $p \leq .002$ level were entered into the models. This significance level was set using a Bonferroni correction where the standard level of significance ($p \leq .05$) was divided by 27, the number of potential predictors from the sexuality related characteristics. Results are presented in Table 8. For the CSBI, results indicated the best predictors of sexual compulsivity scores included reports of a history of providing drugs and alcohol to a sexual partner to encourage the partner to engage in a sexual act, fantasies of impersonal sex, feelings of anxiety about one's sexuality, and a history of expressing anger to convince a sexual partner to engage in a sexual act. The four predictors described above could account for approximately 45% of the variance in the CSBI scores. For the SCS, the best predictors of sexual compulsivity scores included fantasies of impersonal sex, sexual preoccupation, reports of a history of providing drugs and alcohol to a sexual partner to encourage the partner to engage in a sexual act, and feelings of sexual anxiety about one's sexuality. Approximately 40% of variance in SCS scores could be accounted for by the four predictors described.

Discussion

The goal of the current study was to describe and compare two measures of sexual compulsivity, the CSBI and the SCS, within a sample of males in a non-clinical setting in terms of reliability, demographic characteristics, and construct validity. Overall, the results indicate support for the study's hypotheses. Both the CSBI and the SCS demonstrated acceptable levels of reliability within this sample. In terms of validity, results suggest scores on the SCS and the CSBI were related to each other, reports of past sexual behavior, and a variety of constructs that describe sexualized thought and fantasy,

as well as negative emotionality related to sexuality. When comparing the two measures, results indicate the SCS and CSBI are similar in many ways but may measure differential aspects of sexual compulsivity.

Reliability

In terms of reliability, examination of internal consistency estimates for the CSBI and the SCS suggests both scales have a high level of internal consistency that is reflective of previously demonstrated reliability coefficients (Coleman et al., 2001; Kalichman & Rompa, 1995; Kalichman and Rompa, 2001). Additionally, inspection of the item-to-total correlations for both scales suggests moderate relations between each scale's individual items and the total score and that no single item was drastically influencing the overall estimates of internal stability. Lastly, weak to moderate correlations between individual items suggest the CSBI has more varied item content than the SCS, which had less variation between the moderate item intercorrelations. The wider variation in CSBI item intercorrelations may be a result of the development of the scale items, which Coleman and colleagues (2001) developed from the more varied characteristics of individuals with sexual control difficulties in clinical settings, while the SCS items were extensively focused on excessive sexualized thought and behavior (Kalichman et al., 1994).

Demographic Characteristics

As part of the description of the measures of compulsivity, scores on the CSBI and the SCS were examined for relations with and for potential differences between demographic characteristics of the sample. For both the CSBI and the SCS, no significant differences were demonstrated between participant's scores with assorted ethnicities,

relationship statuses, religious affiliations, and sexual orientations. Additionally, age, number of college semesters completed, length of time in a romantic relationship, and the frequency of attendance at religious services were not significantly associated with scores on either measure.

Response Style

In addition to demographic characteristics, it is important to describe the manner in which participants responded to items on the CSBI and the SCS. In this study, results indicated there were weak relations between sexual compulsivity scores on both the CSBI and the SCS and participant's attempts to respond in socially desirable ways. For both scales, the more sexual compulsivity reported by participants, the less likely they were to respond to questions in a way that was an attempt to intentionally create a positive impression on others (impression management). The same relationship was demonstrated in terms of responding to questions in a manner that indicated an unconscious attempt to think of themselves in a positive light (self-deception). No previous studies have empirically examined the relationship between socially desirable responding and scores of sexual compulsivity. The negative relation between impression management and scores of compulsivity stands in direct contrast to Quadland's (1985) hypothesis that people with sexual compulsivity would be unlikely to discuss their difficulties with others until it became a source of extreme distress. Additionally, previous studies have indicated individuals with sexual compulsivity were more likely report psychological distress resulting from the inability to control sexualized thoughts and feelings, which may be related to the negative relationship between self-deception and compulsivity scores demonstrated in this study. Previous research has demonstrated individuals in

psychological distress are not as likely to view themselves in a positive manner (Kaplan, Robbins, & Martin, 1983) and therefore may be less likely to respond to items in a manner that indicates an unconscious attempt to view themselves in a positive way.

There were no large discrepancies noted between the magnitude of relations with scores on the CSBI, the SCS, and the two subscales measuring socially desirable responding (impression management and self-deception). While statistically significant, the relation between self-deception scores and scores on the CSBI and the SCS, as well as the relations between impression management and compulsivity scores on both measures, were small ($r < 0.3$). Overall, the values obtained in this study suggest a weak, if not negligible, relation between socially desirable responding and compulsivity scores.

Relation Between the CSBI and the SCS

Regarding validity, both the CSBI and the SCS were created to measure excessive or uncontrolled sexual behavior and/or cognitions that lead to subjective distress, and functional impairment or negative consequences. Results indicated a strong relation between the two measures suggesting that the two scales assess similar constructs.

Sexual Behavior

Previous research has demonstrated high levels of sexual compulsivity associated with reports of more frequent sexual behavior, including a higher frequency of masturbation, sexual experiences with a partner, and the number of sexual partners (Bancroft & Vukadinovic, 2004; Barth & Kinder, 1987; Gullette & Lyons, 2005; Kalichman & Cain, 2004). The results of this study partially support the findings of past literature. Specifically, Kalichman and Cain (2004) suggested that in order to meet their sexual needs, people with higher scores of sexual compulsivity may go outside their main

sexual partnerships and significant relations of this study suggest this may be true for oral sex. For this sample of male college students, significant relations suggest increasing compulsivity scores on both the CSBI and the SCS are related to an individual reporting he had performed oral sex with a larger number of partners. Additionally, higher scores of compulsivity on the SCS indicated participants were more likely to report a larger number of oral sexual partners as both the provider and receiver of oral stimulation. Increasing SCS scores were also weakly associated with report of more frequent masturbation with results that were highly similar to those reported by Kalichman and Rompa (2001). Overall, the results of this study suggest the SCS is able to relate to a wider variety of sexual experiences than the CSBI. It is important to note the magnitude of relations between the sexual behaviors that were significantly associated with scores of compulsivity on both measures were small ($r \leq .3$), suggesting weak relations with sexual behaviors and no significant relations were demonstrated for frequency of vaginal, oral, or anal intercourse, the number of partners for vaginal or anal intercourse, or the age at which participants reported their first experiences with these sexual acts.

Black et al. (1997) described a small percentage of participants with sexual compulsivity in their study that had engaged in fantasies about illegal sexual behaviors (i.e., exhibitionism, voyeurism, and coercive sex with children) and a smaller percentage that had engaged in these acts. The results of this study support the possibility of a relation between the use of coercion to obtain sexual experiences. In this study, on both the SCS and the CSBI, participants reporting higher levels of sexual compulsivity were also more likely to report a history of sexually aggressive acts. Reporting aggressive sexual acts to gain compliance related to using physical force, drugs or alcohol, verbal

manipulations, angry rejection, through anger expression, and threats were significantly associated with increasing sexual compulsivity scores on the CSBI and the SCS. Overall, the results suggest scores on the CSBI were more strongly related to reports of sexually aggressive acts as all relations describing verbal and physical coercion were larger than the very weak relations demonstrated with SCS scores.

It is very interesting to note that in this study scores on both the SCS and the CSBI demonstrated a relation with the report of providing substances to gain compliance from a partner. Previous research has indicated that the use of alcohol and drugs during sex was highly related to scores of sexual compulsivity (Black et al., 1997; Kalichman & Cain, 2004; Quadland, 1985; Raymond et al., 2003), although these studies did not actually examine the use of providing substances to a sexual partner to increase compliance. In a sample of homosexual men, Benotsch, Kalichman, & Kelly (1999) demonstrated individual and partner use of cocaine mediated the relationship between sexual compulsivity and risky sexual behaviors; the result found in this study for the relations between scores of sexual compulsivity could be similar. The use of drugs/alcohol with a partner, while not necessarily consciously coercive, could result in lowered inhibitions and an increased likelihood of sexually risky behaviors that are influenced by experiences of sexual compulsions.

Sexuality Related Characteristics

CSBI and SCS scores were hypothesized to relate highly with self-reports of sexual preoccupation, self-monitoring of sexual behavior, and motivation to seek sexual experiences (Coleman, Miner, Ohlerking, & Raymond, 2001; Lundrigan, 2004; Quadland, 1985). Results indicated weak relations between the examined scales and both

SCS and CSBI scale scores. When both measures of compulsivity were compared, SCS scores were more highly related to the constructs of sexual preoccupation (an obsessive thought process related to sexual experiences) and sexual motivation (the longing to be involved in a sexual relationship). Based on definitions gathered from past theoretical writing and animal research, Kafka (2003) described sexual desire in humans as a combination of sexual fantasies, urges, and activities, as well as conscious motivation to engage in sexual activities that is cued by internal and external stimuli. Based on this definition, the SCS appears to be measuring both the cognitive and motivational aspects of sexual desire. Next, the comparison of relations indicates CSBI scores were more highly related to scores of sexual monitoring, or the awareness of the impact made on other's by one's sexuality. The CSBI may measure an increased awareness resulting from negative feedback and loss of primary social relationships. Previous research has demonstrated people reporting sexual compulsivity were also likely to report feeling their sexual behaviors were a problem due to negative feedback from others, as well as significant disruption in primary relationships within their families, friends, and co-workers (Black et al., 1997; Coleman, 1987).

Sexual compulsivity has been theoretically related to high levels of sexual fantasy (Barth & Kinder, 1987). In this study, scores of sexual compulsivity on both the CSBI and the SCS were positively correlated with self-report of engaging in sexual fantasy. The pattern of correlations for the CSBI was not significantly discrepant from the pattern for the SCS. The relations for specific fantasy types were consistent with hypotheses set forth by Carnes (1991) and Schwartz (1992) as the relations for the scores of compulsivity were significant for impersonal, exploratory, and sadomasochistic fantasies

(*r*'s ranging from .28 to .47). These results suggest people reporting increased levels of sexual compulsivity are also more likely to engage in fantasies that encompass a wide variety of sexual experiences, where sexual partners are unknown or used as objects, and where sexual acts include pain and or psychological degradation. In addition, Schwartz (1992) postulated that people with sexual compulsivity are not able to develop emotional intimacy with partners and therefore use repetitive sexual fantasies and acts to provide a sense of intimacy. There was some evidence to support Schwartz's (1992) theory in the results of this study. Relations between scores of compulsivity on both the CSBI and the SCS were significantly related to fantasies of intimacy with others, but the magnitude of the correlations was small ($r \leq .3$). Overall, the results found in this study may indicate people with increasing levels of sexual compulsivity have a wide variety of fantasy. Additionally, people with increased levels of sexual compulsivity may be more likely to engage in fantasies related to more varied sexual experiences, with partners that are impersonalized, or where the sexual acts include infliction of pain are more frequent than fantasies where the individual is developing sexual intimacy with his partner(s).

In conjunction with fantasies about impersonal sexual experiences, it was hypothesized that individuals reporting high levels of compulsivity would report more fear of sexual relationships. Results indicated fear of relationships was associated only with scores on the CSBI. Lundrigan (2004) hypothesized that sexual compulsivity may lead an individual to focus energy on searching for and participating in sexual behaviors that satisfy sexual preoccupations and urges, but leave the individual with little time or energy to pursue healthier sexual experiences, including sexually intimate relationships. The relation demonstrated between a fear of sexual relationships in this case could relate

to Lundrigan's hypothesis as developing a sexual relationship with others may be a fear-provoking situation as it would decrease the focus an individual could devote to satisfying compulsive sexual needs. Additionally, men reporting higher levels of compulsivity on the CSBI were also more likely to report lowered confidence in their ability to relate sexually to another person (low sexual esteem). This result may also be associated with the excessive focus someone with sexual compulsivity experiences to satisfy their own sexual needs, leading to a lower level of confidence in their ability to satisfy a partner.

Previous examinations of sexual compulsivity have identified a high prevalence of Axis I psychiatric disorders, primarily mood, anxiety, and substance use disorders (Black et al., 1997; Raymond et al., 2003). There is good reason to expect the feelings of depression and anxiety would be related to compulsive men's reports of their sexuality as well. In general, anxiety disorders are characterized by excessive fear or worry that causes subjective amounts of distress, as well as impairment in daily functioning in multiple environments (APA, 2000). Theoretically, sexual anxiety would be anxiety that results from aspects of one's sexuality (Snell et al., 1993). In the current study, there was a moderate relation on the CSBI and a weak relation on the SCS between scores of sexual compulsivity and sexual anxiety. These results support the findings of past research. Although not described as sexual anxiety, Raymond et al., (2003) and Black et al., (1997) indicated that significant percentages of their samples indicated sexual preoccupation and that urges were intrusive and often resulted in worry they would not be able to control their sexual behaviors. Participants in both samples also were likely to report feeling the

thoughts were a source of distress and impairment in that participants indicated they often felt frustrated or ashamed of their inability to control their sexual compulsions.

Depressive disorders are characterized by persistent feelings of sadness, anxiousness, or emptiness that are accompanied by irritability, hopelessness, guilt, and/or worthlessness (APA, 2000). Symptoms of depression can include disruption in a person's ability to concentrate, find enjoyment in their daily activities, and can result in changes in appetite or sleep patterns. As with anxiety, the symptoms are a source of distress or impairment to a person's daily functioning, and there is no reason to expect that depression could not be associated with aspects of one's sexuality. In the current study, there was a significant and almost equitable relation between reports of sexual depression and scores on the SCS and the CSBI, although the relations were weak ($r \leq .3$). The results of this study also support the reports of participants in Black et al., (1997) and Raymond et al., (2003). In both studies, significant percentages of participants reported feelings of guilt, frustration, and hopelessness about the compulsive thoughts ever stopping. Additionally, the negative feelings resulting from the compulsions were frequently reported as distressful, as the negative feelings resulted in experiencing isolation and loneliness.

External locus of control, or the belief that events that occur in one's life are the result of external forces, has been implicated in the development and maintenance of anxiety and depressive disorders (Beekman, de Beurs, van Balkom, Deeg, van Dyck, & van Tilburg, 2000; Benassi, Sweeney, & Dafour, 1998; Hoehn-Saric, & McLeod, 1985; Presson & Benassi, 1996). As the association between sexual depression and anxiety was explored in this study, it was hypothesized that an external locus of sexual control would

also be significantly related to scores of compulsivity, although no previous research has explored the relation. Results indicated participants who reported high levels of sexual compulsivity on the both the CSBI and the SCS also were more likely to report increased scores of external sexual control, although the magnitude of the relation was higher for the CSBI than for the SCS. This result may suggest that as people report increased levels of sexual compulsivity they are also more likely to report feeling that external forces are in control of their sexuality.

Differences between the CSBI and the SCS

Examination of the differential patterns of sexuality relations between the two measures of compulsivity suggests the CSBI and the SCS may measure different aspects of compulsivity. The CSBI had stronger correlations with constructs describing past sexual aggression (especially reports of verbal and physical coercion), sexual monitoring, sexual anxiety, depression, and external sexual control than the SCS. Additionally, CSBI scores were significantly related to reporting fear of sexual relationships and lower levels of sexual esteem, while the SCS was not significantly related to these variables. The SCS had relations of a stronger magnitude with sexual preoccupation, motivation, and exploratory fantasies when compared to the CSBI. Overall, both scales appeared to relate equally as well to variables related to the use of drugs and alcohol to gain compliance from sexual partners and impersonal sexual fantasies. However, this pattern of correlations suggests the CSBI may assess affective aspects of sexual compulsivity whereas the SCS may measure the ruminative, cognitive aspects of sexual compulsivity.

In order to better describe scores on the CSBI and the SCS, two exploratory regression analyses were calculated and their results support conclusions indicated from

examination of the pattern of correlations. For both the CSBI and the SCS, significant predictors included the use of drugs and alcohol to gain compliance from a sexual partner, fantasies of impersonal sex, and sexual anxiety. On the CSBI, the final predictor that accounted for a significant increase in variance accounted for was expressing anger to gain a partner's compliance, while on the SCS additional variance was accounted for by sexual preoccupation. The results of the regression analyses, as the pattern of correlations suggested, indicate the CSBI may contain more items that examine the affect associated with sexual compulsivity, while the SCS has a stronger cognitive component that measures the ruminative tendencies associated with compulsivity. The differences in the constructs that account for variance on the two scales are most likely a result of the original purposes of the scales' intentions. Coleman and colleagues (2001) developed the CSBI in order to describe the symptoms they had observed in individuals with sexual control difficulties in clinical settings, where there was likely a wider variety of presentations, co-morbid disorders, and associated impairments that were "built" into the scale's item content. In contrast, the SCS (Kalichman & Rompa, 1995) was developed to describe sexual preoccupations and compulsive behaviors and items were selected from a checklist for sexual addiction that excluded more affective components of compulsivity.

Limitations

There were several limitations in the current study that may limit the generalizability of the results. The study only obtained participant's reports of sexual compulsivity at one point in time. No conclusions about the temporal stability (i.e., test re-test reliability) of the CSBI or the SCS or the temporal course of sexual compulsivity could be described. Although the sample was representative of the university population

from which it was obtained, there was limited diversity in the sample (e.g., age). The restriction of age (the mean age of participants was 19.4) may have limited the results as many participants may have had fewer experiences with a wide variety of sexual behavior. Women were excluded from the study and the conclusions of this study may not be applicable to sexual compulsivity in women.

In terms of measures, the current study was limited by the manner in which participants' sexual histories were collected. Participants were asked to estimate the frequency of their sexual experiences in the past three months, which may have been difficult for participants to accurately recall and report. The sexual history also did not clearly include questions about risky sexual behaviors, which has been one of the most associated characteristics of other samples with sexual compulsivity. Lastly, although the current study measured negative emotionality in regards to sexuality and attempted to connect those constructs to parent psychopathology, no measure of general psychopathology was included in the study. A broader measure of personality and psychopathology may have added additional information that could have better described the relations between distress, psychiatric disorder, and other major personality constructs with sexual compulsivity.

Future studies

Future studies should attempt to describe the temporal stability of both the CSBI and the SCS. Additionally, future studies should continue to investigate sexual compulsivity and its measurement in non-clinical populations that are more representative of a normal population. Specifically, samples with a wider range of cultural and demographic characteristics (i.e., older adults, more ethnically diverse,

and/or including women) should be investigated. Further examination of the relations between scores of sexual compulsivity and socially desirable responding, as well as other response styles (i.e., acquiescence and attempts to present one's self as more pathological) in order to better account for the role of response styles in the measurement of compulsivity is also warranted. Future studies should also include measures that record participant's sexual history and risky sexual behaviors more clearly and encompass more varied personality, sexuality, and psychopathology constructs. The use of broad-band measures such as the Minnesota Multiphasic Personality Inventory-2 (MMPI-2; Butcher et. al, 2001) would allow more general conclusions to be drawn about the relations between sexual compulsivity, psychopathology, and personality. Lastly, as more empirical studies of sexual compulsivity emerge, refinement of existing measures to assess sexual compulsivity more concisely would be beneficial.

Conclusions

The goal of the current study was to describe and compare two measures of sexual compulsivity, the CSBI and the SCS, within a sample of males in a non-clinical setting in terms of reliability, demographic characteristics, and construct validity. Overall, the results of this study indicate the CSBI and the SCS have acceptable levels of reliability. In terms of validity, results suggest sexual compulsivity, as measured by the CSBI and the SCS, has a strong cognitive component that included sexual preoccupation, motivation, and monitoring of sexual experiences. A strong cognitive component is supported by the relation between the measures and reported levels of fantasies with content that often contain themes related to impersonal sex, new sexual experiences, or infliction of pain on a partner. Additionally, the results indicate an affective component

of sexual compulsivity that includes feelings of anxiety and depression associated with sexuality. There also appears to be a component of compulsivity that may relate to negative feelings in regards to relationships described by difficulties with sexual esteem and fear of sexual relationships. Lastly, comparison of the constructs related to the CSBI and the SCS in this study suggests the measures assess somewhat different aspects of sexual compulsivity, a result supported by past research (Bimbi et al., 2005). At this time, it would be advised that researchers interested in sexual compulsivity utilized both measures until a more clear and concise conceptualization of sexual compulsivity can be reached.

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Table 1. *Item Means, Standard Deviations (SD), Item-to-Total Correlations, and Corrected Alpha for CSBI Control Scale (N = 308).*

Item	Mean (SD)	Item-Total Correlation	Alpha if Item Deleted
1. How often have you had trouble controlling your sexual urges?	2.12 (1.07)	.66	.89
2. Have you felt unable to control your sexual behavior?	1.90 (1.08)	.72	.89
3. How often have you used sex to deal with worries or problems in your life?	1.74 (1.03)	.54	.90
4. How often have you felt guilty or shameful about aspects of your sexual behavior?	2.23 (1.19)	.70	.89
5. How often have you concealed or hidden you sexual behavior from others?	2.46 (1.30)	.49	.90
6. How often have you been unable to control your sexual feelings?	2.13 (1.21)	.59	.89
7. How often have you made pledges or promises to change or alter your sexual behavior?	2.07 (1.21)	.66	.89
8. How often have your sexual thoughts or behaviors interfered with the formation of friendships?	1.79 (1.03)	.59	.89
9. How often have you developed excuses or reasons to justify your sexual behavior?	1.84 (1.07)	.69	.89
10. How often have you missed opportunities for productive and enhancing activities because of your sexual behavior?	1.78 (1.06)	.66	.89
11. How often have our sexual activities caused financial problems for you?	1.34 (0.80)	.50	.90
12. How often have you felt emotionally distant when you were engaging in sex with others?	1.68 (1.04)	.52	.90

 13. How often have you had sex or masturbated more than you wanted to?

2.28 (1.28)

.60

.89

Table 2. *Intercorrelations Among CSBI Control Scale Items.*

Item	13	12	11	10	9	8	7	6	5	4	3	2
1. How often have you had trouble controlling your sexual urges?	.48	.27	.28	.42	.51	.37	.46	.58	.33	.47	.37	.76
2. Have you felt unable to control your sexual behavior?	.46	.34	.32	.49	.53	.45	.56	.57	.31	.56	.44	
3. How often have you used sex to deal with worries or problems in your life?	.23	.43	.39	.50	.38	.46	.29	.39	.26	.40		
4. How often have you felt guilty or shameful about aspects of your sexual behavior?	.56	.41	.31	.47	.50	.39	.56	.45	.52			
5. How often have you concealed or hidden you sexual behavior from others?	.45	.27	.18	.32	.40	.21	.40	.34				
6. How often have you been unable to control your sexual feelings?	.40	.22	.24	.38	.40	.35	.46					
7. How often have you made pledges or promises to change or alter your sexual behavior?	.50	.33	.31	.44	.57	.43						

Table 3. *Item Means, Standard Deviations (SD), and Item-to-Total Correlations for the SCS with Item Content (N = 318).*

Item	Mean (SD)	Item-Total Correlation	Alpha if Item Deleted
1. My desires to have sex disrupt my daily life.	1.31 (0.66)	.69	.89
2. I sometimes fail to meet my commitments and responsibilities because of my sexual behaviors.	1.23 (0.59)	.59	.90
3. I sometimes get so horny I could lose control.	1.57 (0.83)	.69	.89
4. My sexual appetite has gotten in the way of my relationships.	1.39 (0.71)	.72	.89
5. My sexual thoughts and behaviors are causing problems in my life.	1.32 (0.69)	.73	.89
6. It has been difficult for me to find sex partners who desire having sex as much as I want to.	1.42 (0.83)	.55	.90
7. I find myself thinking about sex while doing other things.	2.01 (0.91)	.49	.90
8. I feel that my sexual thoughts and feelings are stronger than I am.	1.32 (0.66)	.77	.89
9. I think about sex more than I would like to.	1.68 (0.95)	.71	.89
10. I have to struggle to control my sexual thoughts and behavior.	1.46 (0.83)	.78	.89

Table 5. Differences in Demographic Characteristics on CSBI Control Scale and the SCS.

Demographic Variable	N	M (sd)	CSBI			SCS			
			F	(df)	p ≤	M (sd)	F	(df)	p ≤
Ethnicity			2.74	4, 305	.03		1.80	4, 305	.13
Caucasian	288	24.89 (9.57)				14.65 (5.57)			
African American	10	34.30 (13.78)				19.10 (6.80)			
Hispanic	6	21.67 (10.73)				13.67 (4.03)			
Asian	2	27.50 (2.12)				11.00 (1.41)			
Other/not reported	4	30.25 (9.91)				15.75 (6.24)			
Relationship Status			0.33	3, 307	.80		2.19	3, 307	.09
Single/unmarried	294	25.16 (9.89)				14.63 (5.53)			
Unmarried/cohabiting	8	23.38 (6.16)				14.38 (5.04)			
Married/Live with spouse	7	28.14 (11.52)				20.14 (8.73)			
Divorced	2	27.50 (0.71)				15.50 (2.12)			
Note: $p \leq 0.01$ required for statistical significance after potential error correction									

Table 5 Continued. *Differences in Demographic Characteristics on CSBI Control Scale and the SCS.*

Demographic Variable	N	M (sd)	CSBI			SCS			
			F	(df)	p ≤	M (sd)	F	(df)	p ≤
Religion			0.69	7, 293	.68		1.08	7, 293	.37
Protestant Christian	176	25.26 (9.69)				14.78 (5.61)			
Roman Catholic	53	24.63 (10.49)				14.32 (5.31)			
Jewish	3	29.67 (7.51)				13.00 (1.00)			
Muslim	1	40.00 (n/a)				25.00 (n/a)			
Other Western Religion	3	20.33 (5.51)				8.25 (4.19)			
Eastern (Hinduism/Buddhism)	2	27.00 (1.41)				11.00 (1.41)			
Atheist/Agnostic	39	26.03 (10.00)				15.30 (6.45)			
Unknown/undecided	24	24.46 (10.27)				13.78 (4.23)			
Sexual Orientation			1.68	2, 307	.19		2.38	2, 307	.10
Heterosexual	293	25.05 (9.75)				14.64 (5.54)			
Bisexual	6	26.27 (6.53)				15.36 (6.98)			
Homosexual	11	32.33 (12.33)				19.67 (6.55)			

Note: $p \leq 0.01$ required for statistical significance after potential error correction

Table 6. Relations Between CSBI Control Scores, SCS Scores, and Report of Sexual Activity in the Past 3 Months.

Sexual Activity	CSBI		SCS		Sexual Activity	CSBI		SCS	
	<i>r</i>	<i>N</i>	<i>r</i>	<i>N</i>		<i>r</i>	<i>N</i>	<i>r</i>	<i>N</i>
Vaginal Sex					Oral Sex (Performed)				
Age of first vaginal sex	-.09	215	-.12	209	Age of first performed oral sex	-.09	254	-.13	248
Number of vaginal partners	.06	220	.06	214	Number of oral partners	.23*	251	.26*	245
Frequency of vaginal sex	-.06	211	-.02	205	Frequency of oral sex	.06	239	.14	233
Frequency of condom use during vaginal sex	-.05	188	-.04	182	Frequency of condom use during oral sex	-.04	227	-.05	222
Anal Sex					Oral Sex (Received)				
Age of first anal sex	-.10	40	-.25	40	Age of first received oral sex	-.02	209	-.06	205
Number of anal partners	.13	71	.28	72	Number of oral partners	.10	211	.28*	207
Frequency of anal sex	.18	67	.14	68	Frequency of oral sex	-.05	205	.09	201
Frequency of condom use during anal sex	.08	54	-.13	54	Frequency of condom use during oral sex	.08	196	.20	193
					Masturbation				
					Frequency of masturbation	.17	287	.29*	281
					Age when first masturbated	-.06	293	.01	286

Note: * $p \leq .003$

Table 7. *Correlations Between CSBI Control, SCS, and Criterion Measures.*

Criterion Measure	CSBI		SCS		Criterion Measure	CSBI		SCS	
	<i>R</i>	<i>N</i>	<i>r</i>	<i>N</i>		<i>r</i>	<i>N</i>	<i>r</i>	<i>N</i>
Demographic Characteristics					Sexualized Thought				
Age	.09	310	.08	310	Sexual Preoccupation (SS)	.24***	319	.44***	311
College Semesters Completed	.12*	307	.00	307	Sexual Monitoring (MSQ)	.47***	318	.35***	311
Current Romantic Relationship	-.02	139	.12	139	Sexual Motivation (MSQ)	.19***	318	.29***	311
Religious Service Attendance	.07	311	.08	311	Sexual Consciousness (MSQ)	.10	318	.12*	311
Past Sexual Aggression					Sexual Assertiveness (MSQ)	.00	318	.02	311
Total Report (ASBI)	.38***	322	.31***	317	Sexual Fantasies				
Sexual Force (ASBI)	.32***	322	.26***	317	Total Fantasies (WSFQ)	.37***	321	.43***	316
Drugs and Alcohol (ASBI)	.38***	322	.35***	317	Exploratory (WSFQ)	.36***	321	.42***	316
Verbal Manipulation (ASBI)	.37***	322	.29***	317	Intimate (WSFQ)	.19***	321	.25***	316
Angry Rejection (ASBI)	.32***	322	.28***	317	Impersonal (WSFQ)	.42***	321	.47***	316
Anger Expression (ASBI)	.35***	322	.28***	317	Sadomasochistic (WSFQ)	.28***	321	.33***	316
Threats (ASBI)	.32***	322	.22***	317					
Note: * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$									

Table 7 Continue. *Correlations Between CSBI Control, SCS, and Criterion Measures.*

Criterion Measure	CSBI		SCS		Criterion Measure	CSBI		SCS	
	<i>R</i>	<i>N</i>	<i>r</i>	<i>N</i>		<i>r</i>	<i>N</i>	<i>r</i>	<i>N</i>
Social Desirability					Emotionality				
Self Deception (BIDR)	-.34***	321	-.27***	316	Sexual Anxiety (MSQ)	.50***	318	.41***	311
Impression Management (BIDR)	-.22***	321	-.16**	316	Sexual Depression (SS)	.34***	319	.29***	311
					External Sexual Control (MSQ)	.36***	318	.29***	311
					Internal Sexual Control (MSQ)	.03	318	.01	311
Relationships with Others					Sexual Satisfaction (MSQ)	-.08	318	-.13*	311
Sexual Relationship Fear (MSQ)	.26***	318	.14*	311					
Sexual Esteem (SS)	-.23***	319	-.16**	311					

Note: * $p \leq 0.05$, ** $p \leq 0.01$, * $p \leq 0.001$**

Table 8. *Regression Analysis Results for Sexual Compulsivity Scores by Scale.*

Criterion Measure					<u>F-Test</u>			<u>F_{chg} Analysis</u>	
	<i>R</i>	<i>R</i> ²	<i>R</i> ² _{adj}	<i>R</i> ² _{chg}	<i>F</i>	<i>df</i>	<i>p</i> ≤	<i>F</i> _{chg}	<i>p</i> ≤
CSBI Control									
1 Sexual aggression using drugs and alcohol	.51	.26	.26	.26	109.29	1, 307	.001	109.29	.001
2 Sexual aggression using drugs and alcohol, Impersonal sexual fantasies	.61	.37	.37	.11	91.30	2, 306	.001	54.33	.001
3 Sexual aggression using drugs and alcohol, Impersonal sexual fantasies, Sexual anxiety	.66	.43	.42	.06	76.33	3, 305	.001	29.42	.001
4 Sexual aggression using drugs and alcohol, Impersonal sexual fantasies, Sexual anxiety, Sexual Aggression through anger expression	.67	.45	.45	.03	63.26	4, 304	.001	14.18	.001

Table 8 Continued. *Regression Analysis Results for Sexual Compulsivity Scores by Scale.*

Criterion Measure					<u>F-Test</u>			<u>F_{chg} Analysis</u>	
	<i>R</i>	<i>R</i> ²	<i>R</i> ² _{adj}	<i>R</i> ² _{chg}	<i>F</i>	<i>df</i>	<i>p</i> ≤	<i>F</i> _{chg}	<i>p</i> ≤
SCS									
1 Impersonal sexual fantasies	.47	.22	.22	.22	86.70	1, 307	.001	86.70	.001
2 Impersonal sexual fantasies, Sexual preoccupation	.55	.31	.30	.09	67.32	2, 306	.001	37.60	.001
3 Impersonal sexual fantasies, Sexual preoccupation, Sexual aggression using drugs and alcohol	.60	.36	.36	.06	57.72	3, 305	.001	27.06	.001
4 Impersonal sexual fantasies, Sexual preoccupation, Sexual aggression using drugs and alcohol, Sexual anxiety	.63	.40	.39	.04	50.58	4, 304	.001	18.96	.001