

ARTICLES

Non-Paraphilic Compulsive Sexual Behavior and Psychiatric Co-morbidities in Gay and Bisexual Men

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This study explored the features of non-paraphilic compulsive sexual behavior (NPCSB) in a community sample of 183 gay and bisexual men in New York City who reported difficulty controlling their sexual behavior. Several diagnostic and face valid measures of NPCSB and Axis I comorbidity were administered. Results

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indicated that NPCSB is associated with a range of problem behaviors, a fairly coherent pattern of symptoms that can be assessed with good inter-rater reliability, is distinct from other related disorders, and provides a moderate fit to the dependence model but with other unique features. Implications for classification and treatment will be discussed.

Compulsive sexual behavior (CSB), also known as sexual addiction, sexual compulsivity, or hypersexual behavior, is a clinical phenomenon characterized by sexual fantasies and behaviors that increase in frequency and intensity so as to interfere with personal, interpersonal, or vocational pursuits (Kafka, 2010; Kuzma & Black, 2008). CSB can be divided into two subgroups, paraphilias and paraphilia-related disorders (PRD; Kafka, 1997; Kafka & Hennen, 1999). The latter is also referred to as non-paraphilic CSB (NPCSB). In contrast to paraphilias (i.e., exhibitionism or voyeurism), which are defined as socially deviant, NPCSB is characterized by exaggerated expression of more socially accepted behaviors such as compulsive masturbation, excessive use of pornography, and engaging in sex with multiple anonymous partners (Black, 2000; Goodman, 1998; Kafka, 1997; Kafka & Hennen, 1999; Raymond, Coleman, & Miner, 2003).

There is a substantial controversy about whether NPCSB warrants classification as a mental health disorder and, if so, what classification it should receive (for review, see Giugliano, 2009; Kafka, 2010; Kaplan & Krueger, 2010; Marshall & Briken, 2010). Some have argued that behaviors associated with NPCSB are transient, context dependent, or the result of a conflict between an individual and culturally defined sexual norms (Levine & Troiden, 1988; Winters, Christoff, & Gorzalka, 2010). Others have argued that NPCSB is a manifestation of another underlying disorder (i.e., bipolar disorder or borderline personality disorder; Moser, 1993). There also is limited understanding of the etiology of NPCSB (Gold & Heffner, 1998; Kafka, 2010; Kaplan & Krueger, 2010). Many experts agree that NPCSB warrants classification as a mental health disorder, but even among these experts there is little consensus about its proper diagnostic classification, with hypotheses including an addictive disorder, obsessive-compulsive disorder, and impulse control disorder (Kafka, 2010; Kaplan & Krueger, 2010). As a consequence, NPCSB is relegated to the classification of sexual disorders, not otherwise specified in the *Diagnostic and Statistical Manual for Mental Disorders—Fourth Edition, Text Revision* (DSM-IV; American Psychiatric Association [APA], 2000). Experts agree that more high quality research is needed regarding the classification of NPCSB and that the dearth of such research is impeding the development of effective treatments (Kuzma & Black, 2008; Marshall & Briken, 2010).

The primary aim of this study, titled "Project SPIN," was to examine the diagnostic classification of NPCSB. A number of pioneering efforts to describe the features of NPCSB have been made. However, these efforts are limited in their ability to evaluate the classification of NPCSB. First, these works did not assess reliability nor rudimentary descriptive validity of a criteria set, often using unstructured interviews with varying criterion (Carnes, 1991; Kafka & Hennen, 1999) or self-report methods (Coleman, Miner, Ohlerking, & Raymond, 2001; Wines, 1997). Second, sample sizes were generally small and select (Black, Kehrberg, Flumerfelt, & Schlosser, 1997; Coleman et al., 2001; Raymond et al., 2003; Wines, 1997). Specifically, participants were typically seeking treatment and identified themselves as sexually compulsive (Black et al., 1997; Coleman et al., 2001; Kafka & Hennen, 1999; Wines, 1997). These sample limitations make it difficult to determine whether the distress reported was a product of conflict between culturally defined sexual norms and individual behavior or represented a clinically significant disorder. In addition, high comorbidity rates across prior studies (Black et al., 1997; Kafka & Hennen, 2002; Kafka & Prentky, 1994; Wines, 1997), ranging up to 100% in some work (Raymond et al., 2003), make it unclear whether the participants' sexual problems were not simply manifestations of other underlying disorders.

For a problem to be classified as a mental disorder certain minimal criteria must be met (Spitzer & Williams, 1985). These criteria have been tested in the DSM-IV (APA, 2000) and *International Statistical Classification of Diseases and Related Health Problems* (ICD-10; World Health Organization [WHO], 1992) field trials for the major psychiatric disorders. Although many studies are needed to adequately determine classification, first steps can be taken by ensuring that symptoms can be reliably assessed and that the rudimentary elements of descriptive validity are present: (a) symptoms are clinically meaningful, (b) symptoms form a coherent, enduring pattern, and (c) the disorder appears distinct from related disorders.

Diagnosis is most informative when an underlying model of psychopathology is specified and confirmed. Because the earliest and most prominent model for defining and explaining NPCSB is the addiction paradigm (Carnes, 1991; Kafka & Hennen, 1999), an important aim of this study was to examine whether NPCSB would fit the features of the dependence syndrome as outlined originally by Edwards and Gross (1976). Hallmark features of the dependence syndrome are loss of control (e.g., continued engagement despite negative consequences), salience (e.g., prioritizing dependence above other needs), and neuro-adaptation (e.g., tolerance and withdrawal). These symptoms are thought to span a continuum of severity and lead to the chronic relapsing nature of the disorder. In the DSM-IV (APA, 2000), dependence has been used exclusively to classify disorders where psychoactive substances are ingested. However, prior research suggests that other behaviors, such as gambling, fit an addiction model

(Goudriaan, Oosterlaan, de Beurs, & Van den Brink, 2004; Orford, 2001), and many experts have outlined the specific fit of dependence criteria to sexual behavior (Goodman, 2001; Schneider, 1994). Previous study reveals preliminary support for an addiction model of sexual behavior, including the features of loss of control, salience, and neuro-adaptation (Wines, 1997). However, Wines's work is subject to the same empirical limitations discussed above, including a self-identified, treatment-seeking sample, a relatively small sample size, and self-report methodology. Thus, the question of whether NPCSB might fit an addictive disorders model has important implications for future classification schemes and for the development of treatments for NPCSB.

Study Aims

The broad aim of the present study was to test the hypothesis that NPCSB demonstrates elementary forms of reliability and descriptive validity criteria for an addictive disorder. In addition, the study examined whether simply modifying the current DSM substance dependence criteria set would be an adequate strategy to operationalize a measure of dependence for NPCSB. We addressed issues of prior sample limitation by recruiting a relatively large group of non-treatment seeking participants who exceeded the threshold on a NPCSB screening measure. Participants were self-reported gay and bisexual men living in New York City. Social norms regarding sexual behavior are thought to be more liberal among gay and bisexual men living in urban areas than those for heterosexual populations (Morin et al., 2003). Thus, the sample offered an opportunity to explore an important confound: that distress is primarily related to culturally defined conflicts.

The specific aims of the study were (a) to test the inter-rater reliability of a semi-structured interview to assess NPCSB based on adapting diagnostic criteria for substance dependence; (b) to examine whether the items measured form a clinically meaningful, distinct, enduring, and coherent pattern of symptoms; and (c) to examine rates of comorbidity with current Axis I disorders to determine the overlap between NPCSB and other disorders.

METHOD

Participants and Procedures

Participants were 183 gay and bisexual male individuals living in the New York City area. Recruitment procedures were designed to identify a representative sample of gay and bisexual men who were having trouble controlling their sexual behaviors (see Table 1). To avoid self-labeling, the recruitment materials described an interview study and read, "Is your sex life spinning out of control? Is sex interfering with your life? Are sexual thoughts getting

TABLE 1 Participant Characteristics ($N = 183$), New York City, 2002–2004

Characteristic	Percent of Sample	<i>M</i>	<i>SD</i>
Age		36	8.33
Race/Ethnicity			
White	59.0		
Hispanic	17.9		
Black	15.8		
Asian	2.2		
Other	4.9		
Education Level			
High school/GED	8.2		
Some college/associates degree	25.7		
College graduate	39.9		
Advanced degree	23.0		
Employed full/part-time	58.5		
Income (Median category)		\$30–39K	
Sexual Identity			
Gay	89.6		
Bisexual	10.4		
Have main partner	36.6		
Live alone	86.0		
Sexually Transmitted Infections			
HIV-positive	24.6		
STI lifetime ^a	75.4		
STI last 3 months	6.6		
Treatment for NPCSB			
Current	12.6		
Past ^b	21.3		
Previously attended self-help	26.2		

^aSTI = sexually transmitted infection excluding HIV status, ^bPast treatment for NPCSB excludes those in current treatment.

in the way?" Recruitment included active techniques such as direct personal contact at a variety of venues frequented by gay and bisexual men (e.g., outside bathhouses and parks) as well as posting study information in online chat rooms. Passive techniques such as posting tear-off flyers in high density spots where people search for sexual partners were also used, as were ads in gay-oriented magazines (Wolitski et al., 2005). Participants were included if they were biologically male, at least 18 years old, identified as gay or bisexual, scored one standard deviation above the mean on the Kalichman Sexual Compulsivity Scale (KSCS; Kalichman & Rompa, 1995), had sex with at least two male partners in the last 90 days, and evidenced geographical stability. Participants were excluded if they were grossly cognitively impaired, were currently psychotic, and/or had been in more than two other HIV research studies in the last 2 years.

Three hundred sixty-four persons were screened by telephone and 282 (77%) were eligible based on the phone screen. Participants were excluded primarily for low scores on the KSCS. Of the 282 eligible, 37 did not show for

their interview, 23 were dismissed prior to completing the interview for inconsistent responses between the interview and the screening measure, and 6 reported being no longer interested. Two hundred sixteen persons (77% of those eligible) completed the assessment and 183 (85% of those assessed) were included in the final data analysis. Of the 216 participants who completed the interview, 33 were removed because they did not meet eligibility criteria once interviewed—the majority of these men reported less than two sex partners in the last 90 days—or had inconsistent response patterns on self-report scales. After participants were given a complete description of the study, written informed consent was obtained. Eligible persons were paid \$40 for participation which included completing a one-time 2 to 4 hr assessment which consisted of a qualitative interview, a semi-structured diagnostic interview for NPCSB, structured diagnostic interviews for Axis I disorders, and a multi-domain battery of self-report measures.

All interviewers were currently attending graduate psychology or social work programs. Interviewers received extensive didactic training on clinical interviewing, question intent, and supervision on coding, and participated in weekly interview meetings. An inter-rater reliability study established five ratings for 25 randomly selected tapes. This study was approved by the Institutional Review Boards of Mount Sinai School of Medicine, Columbia University College of Physicians and Surgeons, Hunter College, and the Centers for Disease Control and Prevention.

Measures

NPCSB MEASURES

The *Diagnostic Interview for Sexual Compulsivity* (DISC) is a semi-structured interview created by the study team to assess NPCSB symptoms based on the *Structured Clinical Interview for the DSM-IV* (SCID; First, Gibbon, Spitzer, & Williams, 1996) substance abuse and dependence modules. The DSM-IV and ICD-10 substance abuse and dependence criteria were used as templates in an effort to measure the consequences of NPCSB and the constructs that underlie the dependence syndrome: loss of control; salience; and neuro-adaptation (tolerance and withdrawal; Edwards & Gross, 1976). Because the nature of sexual behaviors is different from substance abuse, we assessed a variety of sexual behaviors participants viewed as problematic via their self-assessment. Based on a comprehensive literature search of NPCSB, six categories of potentially problematic sexual behaviors were identified (see Table 2). Following pilot testing and modification, a seventh category of problem behaviors, romantic obsessions, was added. The final interview included the period of time bothered, seven problem behaviors and an “other” category, abuse and dependence criterion adapted for NPCSB (see

TABLE 2 Problem Behaviors Related to NPCSB ($N = 183$), New York City, 2002–2004

Problem Behavior	Percent Endorsing as Problem	M	SD
Anonymous/Casual partners ^a	92.3	29.8/90 days ^b	35.7
Violating parameters of a relationship ^c	72.6		
Internet/Phone	55.2	10 hr/week	13.7
Known partners ^d	38.3		
Masturbation	38.3	9.7/week	10.8
Pornography	34.4	5.2 hr/week	7.7
Romantic obsession ^e	31.0		

^aAnonymous partners included cruising for sex. ^bNumber of partners included anonymous and known but excluded primary or main partner. ^cViolating parameters of a relationship only included the 36.6% of the sample in a current relationship and included having sex outside of a relationship without their partner's knowledge or to a greater extent than agreed upon. ^dKnown partners included friends or repeat partners. ^eRomantic obsession included fixation on a partner(s) or love relationships. This definition was based on the self-help and popular CSB literature.

Table 3), presence of distress or impairment, age of onset (beginning of impairment or distress), and course of the problem (description of problem over time and time bothered). Findings on the reliability and validity of this measure are presented in the Results section.

TABLE 3 Diagnostic Interview for Sexual Compulsivity (DISC) Item Thresholds, New York City, 2002–2004

Item	Percent Meeting Criteria
Loss of Control	
Continued engagement despite consequences	96
More than intended	85
Persistent desire or unsuccessful efforts to stop	74
Salience (Narrowing of Repertoire)	
Great deal of time spent	97
Important activities given up	77
<i>Unable to modify behavior despite other activities^a</i>	67
<i>Affected major role obligations^{a,b}</i>	65
Neuro-Adaptation	
Withdrawal	57
Tolerance	56
Abuse	
Put self in dangerous situations	89
Psychological or physical problems	67
Psychological problems	54
Physical problems	40
Affected major role obligations	65
Social or interpersonal problems	44
Financial problems	20
Legal problems	6

^aCriteria in italics represent items not included in the DSM-IV substance dependence criteria. ^bAffected Major Role Obligations was included in both the Salience and Abuse categories.

The *Kalichman Sexual Compulsivity Scale* (KSCS; Kalichman & Rompa, 1995) was used as the screening measure. It is a 10-item measure of statements related to CSB rated on a 4-point scale from 1 (*not at all like me*) to 4 (*very much like me*), and was the only measure of NPCSB that has been used with large samples of gay and bisexual men at the start of the present study. We selected a cut-off of one standard deviation above the mean with the expectation that individuals in the lower ranges of that cut-off would report low symptom levels and would constitute a group either without the disorder or one experiencing subthreshold problems. The KSCS has been used in numerous studies and has been shown to have very good reliability and construct validity and could discriminate between participants based on number of sexual partners and other features associated with NPCSB (Dodge, Reece, Cole, & Sandfort, 2004; Kalichman & Rompa, 1995, 2001).

The *Compulsive Sexual Behavior Inventory* (CSBI; Coleman et al., 2001) is a self-report scale which measures control over sexual activity and other aspects of problematic sexual behavior including sexual abuse and violence. Only the sexual control sub-scale was used in the present study. The sexual control subscale is a 13-item measure of sexual thoughts and behaviors, which are resistant to control, rated on a 5-point scale from 1 (*very frequently*) to 5 (*never*). This subscale has excellent reliability ($\alpha = .96$ in the present sample) and reasonably discriminated between individuals with NPCSB and controls in prior studies (Coleman et al., 2001; Miner, Coleman, Center, Ross, & Rosser, 2007).

The *Yale Brown Obsessive Compulsive Scale* (YBOCS; Goodman, Price, Rasmussen, & Mazure, 1989) was modified for NPCSB by study investigators (YBOCS-CSB). The YBOCS-CSB interview assesses the constructs of loss of control, salience, distress, interference, and resistance against obsessions and compulsions related to NPCSB. Though it was originally created to assess symptoms of obsessive compulsive disorder, the YBOCS has been successfully adapted to assess thoughts and behaviors related to pathological gambling (Hollander et al., 2000; Pallanti, DeCaria, Grant, Urpe, & Hollander, 2005), body dysmorphic disorder (Phillips, Hollander, Rasmussen, & Aronowitz, 1997), and substance use disorders (Modell, Glaser, Cyr, & Mountz, 1992). Because the constructs measured by the YBOCS such as loss of control, are essential for measuring the dependence construct, we posited that this measure might be useful as an alternative method for examining dependence severity. Coefficient alpha for this measure in the present sample was .82 (see Results section).

COMORBID PSYCHOPATHOLOGY MEASURES

The *Composite International Diagnostic Interview-Short-Form* (CIDI-SF; Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998) is a series of short-form interviewer administered screening scales designed to evaluate nine Axis I

diagnoses (major depressive disorder, generalized anxiety disorder, specific phobia, social phobia, panic disorder, agoraphobia, obsessive-compulsive disorder, alcohol dependence, and drug dependence) according to the definitions and criteria of the DSM-IV and DSM-III-R. Overall classification accuracy compared to the original full CIDI ranged from 93% for major depressive disorder to 99% for generalized anxiety disorder.

The *Structured Clinical Interview for the DSM-IV* (SCID; First et al., 1996) Mood and Psychotic Modules were used to assess mania, hypomania, and psychosis.

The *DSM-IV Interview for Paraphilic Disorders* (E. Coleman, 2003; personal communication) was used to assess the seven paraphilias listed in the DSM-IV. Questions are based on the operational definitions and diagnostic criteria of each paraphilic.

Data Analysis

The inter-rater reliability of the DISC was examined by computing two-way mixed model intraclass correlation coefficients (ICCs) to measure the absolute agreement among 23 interviews rated by 5 interviewers (Aim 1). Aim 2, to examine whether the DISC items form a clinically meaningful, distinct, enduring, and coherent pattern of symptoms, was assessed in several ways. First, we computed the frequency of problem sexual behaviors, the percent of the sample that indicated experiencing a period (at least 6 months) of significant distress or impairment related to the problem behaviors, and the thresholds for the diagnostic items of the DISC. Next, a confirmatory factor analysis (CFA) was performed to determine if the items adapted from the substance dependence criteria would form a single factor. Because DISC items were dichotomous, a matrix of tetrachoric item correlations was created prior to performing the CFA. Exploratory factor analyses (EFAs) were also conducted using principle components analysis (PCA) to better understand the structure of the data. Items were rotated using promax rotation with Kaiser normalization. Rotations were converged in five iterations (Schumacker & Lomax, 2004). In addition, means, ranges, and standard deviations were computed for NPCSB onset and course. Finally, convergent validity was assessed using bivariate correlations among five measures of NPCSB. Last, sample percentages of Axis I disorders were computed to assess rates of Axis I comorbidity with NPCSB (Aim 3).

RESULTS

Participant Characteristics

Participant demographic characteristics are presented in Table 1. Participants were 183 gay or bisexual men ranging in age from 19 to 63 who self-identified

as having difficulty controlling their sexual behavior. The sample primarily consisted of White men (59%), though 41% identified as belonging to racial or ethnic minority groups. The sample was generally well educated, with 88.6% having completed at least some college courses, and 58.8% were employed full or part-time. Most of the sample (89.6%) was gay-identified and 36.6% reported being in a current romantic relationship with a male partner. Nearly a quarter of the sample (24.6%) self-identified as HIV+ and three-quarters (75.4%) reported having had a sexually transmitted infection other than HIV in their lifetime.

DISC Inter-rater Reliability

Participants were instructed to report on the period in which their NPCSB was most bothersome for the DISC. The majority of the sample reported their worst period of NPCSB was within the last 12 months (83%). Because no differences existed between persons reporting a current or past episode on measures of concurrent NPCSB or current comorbidity (all $ps > .10$), we included all participants in the data analysis. The inter-rater reliabilities of DISC domains were as follows: problem behaviors ranged from an ICC of .90 to .99, representing the most stable of the domains measured; loss of control criteria ranged from an ICC of .80 to .87, salience criteria ranged from an ICC of .88 to .94, neuro-adaptation ranged from an ICC of .91 to .93, and abuse criteria ranged from an ICC of .66 to .92.

Problem Behaviors: Frequency and Prevalence

Frequencies of problem sexual behaviors are shown in Table 2. Sex with anonymous and casual partners represented the most endorsed behavior. Participants reported an average of 29.8 partners in the last 90 days. The next most frequently endorsed category was using the Internet/phone for sexual purposes ($M = 10$ hr/week, $SD = 13.7$). Though this question inquired about both Internet and phone, the overwhelming majority indicated that the Internet was primary. Although only 25% of the overall sample endorsed violating parameters of a relationship as a problem, it was endorsed by almost three-quarters (72.6%) of those in a current relationship with a male partner. Additionally, 43.7% reported "other" problematic behaviors associated with NPCSB, with the excessive fantasy representing 60% of the other category. Overall, participants reported spending an average of 2.9 hr/day thinking about sex and 3.7 hr/day engaging in sexual activity. Sexual activity was defined as any sexual behavior outside of thoughts. When we examined the sum of all problem behaviors, participants endorsed an average of 3.89 ($SD = 1.68$) out of eight problem behaviors and 91.8% reported experiencing more than one problem behavior.

DISC Item Thresholds

Individual criterion results revealed that 97.8% of participants endorsed three or more DSM-IV dependence criteria adapted for NPCSB with the average being 5.4 ($SD = 1.3$) out of seven possible criteria, and 94% indicated significant distress and/or impairment. As presented in Table 3, items representing loss of control and salience were most frequently endorsed and highly skewed. The abuse criteria displayed more variability with putting oneself in dangerous situations representing the most frequently endorsed item (89%). The majority of participants endorsing this item indicated that they either engaged in risky anal sex (i.e., high STI risk) as a result of an episode of their NPCSB (74%) and/or frequently went to strangers' houses during sexual episodes. Social or interpersonal problems were endorsed by less than half the sample (44%), and only 6% reported having legal problems as a result of their NPCSB. The majority of these represented being arrested for engaging in sex in public.

NPCSB Coherence

A confirmatory factor analysis was attempted to test whether the NPCSB adapted dependence items of the DISC would represent a unitary construct. The CFA could not be computed because the matrix was singular, indicating significant multicollinearity between two items: "more often than planned" and "a great deal of time spent engaging in behavior." When these items were removed, the goodness of fit indices suggested a fair fit to the data ($NFI = .91$, $NNFI = .88$, $CFI = .94$).

To better understand the relationship between items we also ran an EFA using all of the DISC items. Because the "more often than planned" item loaded lowest in the PCA (.26), the analysis was re-run without this item (Schumacker & Lomax, 2004). EFA results indicated a 2-factor solution with all items loading above .4 (five loaded above .6) on the first factor which accounted for 42% of the variance (eigenvalue = 2.5).

Because the DISC item thresholds were highly skewed, perhaps as a result of the dichotomous response set, we also assessed the factor structure of the YBOCS-CSB, which provides a continuous measure of the constructs underlying addictive disorders such as loss of control and salience. Because resistance against urges and behaviors is not representative of the underlying constructs of the dependence syndrome, these items were removed from analyses. Results indicate that the YBOCS-CSB demonstrated good internal consistency ($\alpha = .82$) and represented a unitary construct accounting for 44.4% of the variance (eigenvalue = 3.55) with all items loading above .57 on a single factor.

TABLE 4 NPCSB Onset and Course ($N = 183$), New York City, 2002–2004

Variable	Percent	<i>M</i>	<i>SD</i>	min	Max
Age of onset (years) ^a		27.8	8.7	11	59
Time bothered since age of onset (yrs)		6.6	7.6	.16	40
Longest Continual Time Period Free of Problems ^b					
No time free	63.9				
Less than 6 months	78.1				
Number of Episodes ^c					
One episode	73.2				
Description of problem over time ^d		1.68	1.1	0	4

^aAge of onset was defined as the age in which sexual activity started to cause distress or interference with functioning. ^bLongest continuous time free of problems was defined as the longest period of continuous time one was free of any problems related to CSB. ^cSeparate episodes are defined by a period of at least 6 months free of problems. ^dDescription of problem over time is based on a 5-point likert scale ranging from 0 (*much worse*) to 4 (*much better*).

NPCSB Onset and Course

As presented in Table 4, results regarding onset and course of the problem reveal that NPCSB appears to be more than a temporary condition with over half (63.9%) of the sample reporting no continual relief and 78.1% reporting less than 6 months symptom free since first onset. Additionally, only 8.7% of the sample indicated that their problem was present for less than 6 months, and most participants (76.1%) reported it had stayed the same or gotten worse over time.

Convergent Validity

All measures of NPCSB were significantly correlated but effect sizes were significantly less than expected from measures of a similar construct. The lowest correlation was found between the seven DISC dependence symptoms and the YBOCS-CSB ($r = .19, p < .05$), while the highest were found between the YBOCS-CSB and the KSCS ($r = .51, p < .001$) and the sexual control subscale of the CSBI ($r = .50, p < .001$).

Axis I Comorbidity

Comorbidity rates with Axis I disorders are presented in Table 5. Participants reported high rates of comorbidity with Axis I disorders, particularly major depression, though no one cluster of disorders was present significantly more often than any other. Paraphilias were endorsed by 15.8% of the sample individually ranging from 8.7% (voyeurism) to 0% (pedophilia). Overall, 34.5%

TABLE 5 Axis I Comorbidity Assessed by CIDI-SF ($N = 183$), New York City, 2002–2004

Axis I Disorder	Percent Meeting Criteria
Affective disorders	32.8
Depression	32.8
Mania/Hypomania ^a	2.6
Substance dependence	35.0
Drug	23.0
Alcohol	20.2
Anxiety disorders	35.2
Agoraphobia	4.4
Specific phobia	14.2
Social phobia	8.2
Panic disorder	10.4
Obsessive-Compulsive disorder	8.2
Generalized Anxiety disorder	14.8
Any paraphilia	15.8
Any Axis I Disorder	65.5
More than one Axis I Disorder	39.9

^aMania and hypomania were measured using the Structured Clinical Interview for the DSM-IV (SCID).

of the study sample met three NPCSB dependence criteria but were not diagnosed with any comorbid disorder.

DISCUSSION

This is among the very first studies to rigorously examine diagnostic features of NPCSB in a non-treatment seeking sample. The fact that the sample was relatively large, contained relatively few individuals currently in treatment for NPCSB, and that participants were members of a community (urban gay and bisexual men) that has relatively liberal social norms about sexual behaviors helps to reduce potential confounds associated with prior studies.

DISC Reliability

Problem behaviors and symptoms on the DISC had good inter-rater reliability. Findings support the study's measurement approach. Rather than asking about sexual behavior in general, the study identified a specific set of problem behaviors associated with NPCSB and then queried participants whether these behaviors were a source of distress or impairment. The behaviors identified were then referred to specifically in determining whether participants met diagnostic threshold for each symptom. The set of seven behaviors listed in Table 2 appear to provide good coverage of how NPCSB is typically manifested in this population, and are consistent with prior reports (Kaplan &

Krueger, 2010). In addition, participants identified excessive engagement in sexual fantasy as the most prominent problem not classified in the seven *a priori* problem behaviors. This suggests that future work is needed to better understand and measure cognitive manifestations of NPCSB as previously posited by Leeds and Morgenstern (2003). The majority of participants in our sample reported several problem behaviors. Previous studies reported similar results (Wines, 1997), which suggests that problem sexual behaviors rarely occur in isolation. It should be noted that many participants engaged in certain sexual behaviors, but did not report being distressed by them. For example, 74% of participants watched pornography in the last month, but only 34% considered it a problem, whereas, 92.3% considered sex with anonymous partners problematic. Thus, it appears important not to define sexual compulsivity via objective behaviors alone as used in some previous investigations (e.g., Carnes, 1991), but to use a combination of objective symptom presentation and subjective attribution.

Descriptive Validity

Overall, findings support the descriptive validity of NPCSB as assessed in this study. Participants reported extremely high levels of problem behaviors, indicated these behaviors caused significant distress or impairment, and reported substantial physical, psychosocial, and social problems resulting from these behaviors. The mean age of onset was about 28, which is somewhat higher than previous studies (Black et al., 1997), and the average duration (until the time of the interview) was about 7 years. Most participants (63.9%) reported no remission in symptoms since onset (defined as at least 6 months symptom free) and most (76.1%) reported that their symptoms stayed the same or got worse over time, suggesting their sexual problems are neither transient nor context dependent (e.g., related to a single episode of intense romantic involvement).

As expected, findings indicated that conflicts between the individual and social norms within the gay community were rarely, if ever, the primary source of distress or impairment. For example, almost 90% of participants reported engaging in behaviors that caused consequences as a result of NPCSB, but less than half (42%) reported any type of social or interpersonal conflict. This finding bears some consideration in light of the traditionally sex-negative U.S. cultural norms, and considering the result that 92% of men reported anonymous or casual sex as a problem behavior (i.e., problem behaviors were not isolated to solo sexual activities). Extensive qualitative data from interviews suggested that participants experienced relatively minimal disapproval about their behaviors from peers and many viewed their pattern of sexual behavior as normative. Additionally, when participants were asked about sexual norms they reported that they believed gay and bisexual men

in NYC averaged 84.1 partners per year ($SD = 115.3$; Median = 40), while they reported 29.8 per 3 months (or 119.2 per year) and 48.1% of participants reported that they had the same number or fewer sexual partners than other gay and bisexual men in NYC. Though this is a skewed perception, it is possible that a perceived high-sex gay/bi norm helps drive problem behaviors. It is also noteworthy that these views only reflect participants' perceptions of gay and bisexual community norms, and do not necessarily reflect the likely complex balance of pressures and norms perceived by the larger heteronormative culture. The potentially conflicting felt pressure between gay or bisexual and heterosexual cultural norms may result in secondary emotional reactions or secrecy regarding sexual behavior in some circles. This latter hypothesis indicates an ability to compartmentalize their sexual lives, which may result in additional negative secondary emotions. Future qualitative and quantitative work is needed to untangle this added layer of complexity for gay and bisexual men with NPCSB.

Similarly, patterns of comorbidity with other Axis I disorders contradict the hypothesis that NPCSB is a secondary result of a single underlying disorder (e.g., Moser, 1993). About one-third of participants (34.5%) reported no current Axis I disorder and co-occurrence of disorder was relatively equally distributed across affective, substance use, and anxiety disorders. Similar Axis I comorbidity rates and patterns have been found in other studies (Kafka & Hennen, 2002; Wines, 1997), suggesting that no one disorder is associated with NPCSB. Moreover, these results illuminate the complex mental health needs of individuals suffering from NPCSB, which are consistent with high co-morbidity rates observed with many other disorders (e.g., PTSD; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995).

The prevalence of problem sexual behaviors reported were surprising, as the study set a moderate threshold for inclusion on the screening measure. Although normative data on sexual behaviors are scarce, a recent survey study provides data on HIV risk behavior from a sample of 10,000 men who have sex with men (MSM) across 25 U.S. cities (Sanchez et al., 2006). In their large-scale survey, Sanchez and colleagues indicated that on average urban MSM reported 13.1 (Range = 1–300; Median = 4) non-main sexual partners in the last year. Thus, participants in the present study were far outside the norm on this behavioral index, reporting a mean of 29.8 such partners (Range = 1–251; Median = 20) in the prior 3 months. Similarly, on average participants reported engaging in sexual thoughts and behaviors multiple hours each day. The use of the Internet to search for sexual partners was also endorsed by over half of the sample and appears to substantially increase the availability of sexual partners. Of particular concern were reports of high levels of unsafe (i.e., high STI risk) sexual practices in this sample, which is consistent with findings in previous studies (Kuzma & Black, 2008) and highlights the dire public health need for interventions that simultaneously treat NPCSB and risky sexual behavior. Only the number of sexual partners

reported by participants in the current study appears substantially different from other studies of CSB and might be the result of our sample of urban gay and bisexual men with NPCSB (Quadland, 1985).

Goodness of Fit with the Dependence Syndrome

Findings from the DISC provided mixed support for the comparability of NPCSB to substance dependence. Item endorsement on the DISC was high as hypothesized. However, the DISC dependence items failed to form a cohesive pattern or relate well to other measures. Nevertheless, another measure which assesses the constructs underlying substance dependence, the YBOCS-CSB, provided positive results for conceptualizing NPCSB as an addictive or impulse control disorder. YBOCS-CSB items were highly endorsed, loss of control and salience items formed a strong single factor, items were normally distributed on a continuum of severity, and the YBOCS-CSB score correlated significantly and moderately with other measures of NPCSB. One possible explanation is that the skewed distribution of DISC items limited the convergence of items into a single factor. This seems unlikely because even when highly endorsed items were removed, a single factor solution was not found.

An alternative explanation is that substance dependence and NPCSB share common characteristics of addictive disorders such as loss of control and salience, but differ in how these symptoms are manifest and should be operationalized. Careful examinations of DISC findings indicate that translating loss of control items from substance dependence were not well suited for NPCSB. For example, participants had difficulty responding to the DISC item “engaged in the behavior more often than planned” because they said that finding anonymous partners typically involved elaborate planning and once the behavior was complete, they did not search for more partners but felt guilty about their encounter. Similar problems were found with other DSM and ICD items. By contrast, YBOCS-CSB items are generic in their wording. For example, “do urges and thoughts interfere with your social functioning.” Clearly, one implication of these findings is that simply translating DSM-IV dependence criteria for compulsive sexual behavior will not adequately NPCSB.

The pattern of symptoms is different from substance use disorders in that negative consequences were less frequently endorsed than criteria measuring loss of control or salience. This pattern was also observed when examining individual YBOCS-CSB items. Because in other studies persons reporting NPCSB report similar patterns of symptoms, it is unlikely that this effect was entirely due to participants receiving less social stigma as a result of sexual norms in the gay community. It may be the case that because sex is more self-limiting than ingesting substances or gambling, severe consequences—aside from HIV exposure—are reduced. Results from the qualitative portion of the study suggest that aside from physical consequences (i.e., STIs), participants

indicated many consequences that were intangible such as a loss of potential at work and an inability to be intimate in a relationship.

Classification

Our findings suggest that the symptom presentation of CSB appears similar to addictive spectrum and impulse control disorders such as pathological gambling and binge eating, which has also been suggested by several other investigators (Black et al., 1997; Goodman, 1998; Raymond et al., 2003). Our findings appear to support the position posited by Orford (2001), who suggested that significant overlap exists among excessive appetitive behaviors, such as eating, gambling, sex, drug addiction, and exercise. Orford suggests that these problems all represent activities that were originally pleasurable and rewarding but that eventually increase in intensity via positive reinforcement and soon are characterized by loss of control. He adds that excessive behaviors share common primary reinforcers which drive excessive behavior but have different secondary reinforcers. This hypothesis appears consistent with imaging studies which have found significant overlap in brain activity among disorders of behavioral excess (for review, see Goodman, 2008). In the case of NPCSB secondary reinforcers appear to be primarily related to intimacy (Black et al., 1997). Other characteristics include excessive guilt and shame and a cycle in which persons use sex as means of emotion regulation, all features of other excessive appetitive behaviors. Indeed, in the DSM-V Research Planning Agenda for Obsessive-Compulsive Related Disorders, two broad categories have been proposed: (a) Obsessive-Compulsive Related Disorders, and (b) Behavioral and Substance Addictions (or Impulsive-Compulsive Disorders) and NPSCB is proposed within the latter category (Hollander & Allen, 2006).

Summary and Implications for Gaining a Better Understanding of NPCSB

Overall, these findings provide strong support for the reliability and initial forms of descriptive validity in classifying NPCSB as a separate mental health disorder. Non-treatment seeking participants reporting difficulty controlling sexual impulses also reported high levels of problem sexual behaviors, high levels of distress/impairment related to this behavior, and high levels of loss of control and salience. In this sample, distress/impairment appeared to have less of a relationship to purely external or social conflicts, but was related to the consequences of loss of control and restriction of opportunities for alternative source of reward that is characteristic of the growing salience of a single appetitive behavior. In addition, symptoms appeared to have a definable onset, a protracted course, and a pattern of comorbidity with other Axis I disorders not consistent with the hypothesis that NPCSB is a symptom of

another underlying disorder. Taken together it appears that the simple face valid criteria proposed by Kafka and Prentky (Black et al., 1997) which posit that non-paraphilic NPCSB is “recurrent, intense sexually arousing fantasies, urges, and behaviors that are socially sanctioned, but lead to a loss of control over behavior and repeated negative consequences, for greater than 6 months duration, so as to preclude or significantly interfere with the capacity for reciprocal affectionate activity” (p. 351) are quite accurate.

Limitations

There are several factors which should be considered when interpreting results of the current study. Although a significant strength of the study was recruiting a sample of gay and bisexual men who were less likely to be driven to treatment as a result of social disapproval, this sample may be qualitatively different from samples of heterosexual men in their symptom presentation for precisely this reason. Moreover, the availability of sexual outlets reported by these men may not be characteristic of other populations, particularly heterosexual men, but may provide insight into the rise of sexual problems on the Internet. A second limitation is that we do not have a normative sample of gay and bisexual men with which to compare results. While many studies have analyzed the screening measure (KSCS) used in the current study with general samples of gay and bisexual men (Dodge et al., 2004; Kalichman & Rompa, 1995) and found significantly lower scores, it is difficult to generalize results to the findings of the current study. Although we assessed absolute agreement when examining inter-rater reliability, the participant pool entering the study was already endorsing out of control sexual behavior which may have inflated the agreement scores among raters. Although we made every effort to validate these instruments in the current study, we recognize that these measures should be used in other studies before any firm conclusions can be made about their utility. Finally, we did not use a similar semi-structured interview to test other diagnostic conceptualizations. In spite of these limitations, the present study provided support for conceptualizing NPCSB as a distinct disorder, which shares features with other disorders of behavioral excess. Based on these findings there appears to be sufficient evidence to warrant an addiction-based classification of NPCSB in the DSM-V. Further research is needed to delineate the proper diagnostic underpinnings of this serious problem.

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