

Assessing psychological symptom patterns of patients seeking help for hypersexual behavior

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This study used the Symptom Checklist to examine the psychological symptom patterns among hypersexual patients ($n = 59$) at intake compared to a control group of non-hypersexual individuals ($n = 55$). Group membership for the hypersexual group was assigned based on the individual's chief complaint at intake and on elevated scores on the Hypersexual Behavior Inventory. A discriminant function analysis of between-group differences was statistically significant and post-hoc univariate tests revealed several distinct features associated with the hypersexual group compared to the controls. These findings are discussed in the context of treatment implications for clinicians working with patients seeking help for hypersexual behavior.

Keywords: hypersexuality; sex addiction; sexual compulsivity; psychopathology

Introduction

Hypersexual behavior is a phenomenon that has received increased attention among mental health professionals and researchers during the past few decades (e.g. Coleman, 1991; Dodge, Reece, Cole, & Sandfort, 2004; Goodman, 1993; Kafka, 1997; Lundy, 1994; McCarthy, 1994; Moore & May, 1982; Quadland, 1985; Reid, 2007; Rinehart & McCabe, 1997, 1998). Correlational studies have linked hypersexual behavior to clinical attributes such as anxiety, depression (Raviv, 1993; Raymond, Coleman, & Miner, 2003; Reid & Carpenter, in press), attention-deficit disorders (Blankenship & Laaser, 2004; Kafka & Prentky, 1998; Reid, 2007), social phobia, substance abuse (Kafka & Hennen, 2002), obsessive tendencies (Reid & Carpenter, in press; Schwartz & Abramowitz, 2003), sexual dysfunction (Butts, 1992) and post-traumatic stress disorders (Howard, 2007). Personality traits such as boredom proneness (Chaney & Blalock, 2006), interpersonal sensitivity, shame, alexithymia, loneliness, low self-esteem and emotional dysregulation have also been observed among hypersexual patients (Adams & Robinson, 2001; Guigliamo, 2006; Reid, Carpenter, Spackman, & Willes, 2008; Wilson, 2000; Yoder, Virden, & Amin, 2005). Evidence suggests that hypersexuality jeopardizes healthy attachments between romantic partners (Reid & Woolley, 2006; Zapf, Greiner, & Carroll,

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2008). As part of the continuing body of research, this article attempts to expand the current understanding of psychological symptom patterns among patients seeking help for hypersexual behavior and to discuss ways in which this information might inform treatment interventions for clinicians serving this population.

Hypersexual behavior

Over the years, the phenomenon of hypersexuality has been discussed under different labels, from early categorizations such as nymphomania and satyriasis to more recent conceptualizations including sexual addiction (Carnes, 1986; Carnes, Murray, & Charpentier, 2005; Goodman, 1993, 2001; Leedes, 2001; Myers, 1995; Ragan & Martin, 2000; Schneider & Irons, 2001; Schwartz & Brasted, 1985), sexual compulsivity (Coleman, 1987, 1991, 1992, 2003; Cooper & Lebo, 2001; Quadland, 1985; Travin, 1995; Weissberg & Levay, 1986), sexual dependency (Wan, Finlayson, & Rowles, 2000), sexual impulsivity (Barth & Kinder, 1987; Gabbard & Bennett, 2005) and hypersexuality (Brandell & Nol, 1992; Finlayson, Sealy, & Martin, 2001; Kafka, 1997, 2001, 2003; Orford, 1978; Reid, 2007; Reid & Carpenter, in press; Rinehart & McCabe, 1997, 1998; Salzman, 1972). Although there is uncertainty about what advantages or disadvantages exist for these different conceptualizations, it is apparent that the descriptors can have implications for how presenting symptoms are treated (e.g. an addiction model, an impulse control disorder, a compulsive behavior).

For the purpose of this study, hypersexual behavior has been conceptualized as difficulty regulating or diminishing sexual thoughts, feelings and behavior, to the degree that negative consequences are experienced by the self or others. Patients seeking help for these problems report significant personal or interpersonal distress related to preoccupation with sex, and their sexual choices are frequently incongruent with their personal values or desired goals. It is commonly hypothesized that, as a group, hypersexual patients often use sex as a tension-reduction behavior (e.g. stress relief, affect regulation) to either self-soothe or disassociate from unpleasant mood states (Reid, Harper, & Anderson, in press). Hypersexuality, as a syndrome, requires the behavior to continue across a significant period of time (e.g. several months) and involve activities that are non-paraphilic, although it is plausible that hypersexual behavior can exist as a comorbid condition with paraphilic tendencies (Kafka, 1997, 2001). Additionally, excessive sexual behavior alone or preference for sex that falls outside societal norms does not by itself constitute hypersexual behavior (Muench et al., 2007) because the syndrome must include additional elements such as disconstraint, distress or diminished functioning.

Hypersexual behavior can involve either socially deviant or normal expressions of sexual behavior and can include a variety of solo or relational sexual activities, such as compulsive masturbation; pornography dependence; protracted promiscuity; multiple extra-dyadic relationships; excessive online sexual pursuits; solicitation of commercial sex workers or use of escort services, strip clubs or other venues associated with the adult entertainment industry; and telephone sex. The important aspects that distinguish such behaviors as symptoms of hypersexuality are predominantly determined by the degree to which they create psychological distress and diminished functioning and the extent to which a person reports a sense of powerlessness over his or her ability to regulate sexual thoughts, feelings and behaviors.

Patients seeking help for hypersexual behavior encounter a host of difficulties, including employment loss, financial debt, diminished self-worth and lost productivity. Some patients have required medical attention for genital lesions caused by compulsive masturbation. Risky sexual practices associated with hypersexual behavior may also create health risks for some patients, such as the contraction of a sexually transmitted disease (Dodge, Reece, Cole, & Sandfort, 2004). Legal problems and interference with interpersonal relationships are not uncommon among this population (Reid & Woolley, 2006). Among college populations, hypersexual students may sacrifice grades, fail classes and, in some cases, even be expelled from school as a consequence of their excessive preoccupation with sexual pursuits. Sex for many of these patients comes with a high price tag, yet they frequently report feeling driven by, compelled by or obsessed with an intense preoccupation with and desire for sex despite these negative consequences.

Psychological symptom patterns

Psychopathology among hypersexual patients requires careful consideration in order to understand what relationships might exist between these conditions. Although some researchers have indicated that the frequency of sexual behavior need not indicate pathology (Levine & Troiden, 1988; Moser, 1993; Todd, 2004), it would appear that for a portion of individuals, hypersexuality may reflect attempts to manage or reduce symptom distress associated with psychopathology and therefore may reflect a comorbid condition (Reid et al., 2008).

Previous research among a sample of hypersexual patients ($n = 152$) using the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) revealed several clinical elevations across multiple scales, suggesting that assessment of this population using an instrument that allows for the concurrent examination and comparison of a broader spectrum of psychiatric and personality variables yields meaningful results (Reid & Carpenter, in press). Such analysis also provides the opportunity to place the occurrence of these variables within the well-defined normative populations of these measures.

Rationale for the Symptom Checklist

In the present study, the Symptom Checklist-90-R (SCL-90-R: Derogatis, 1994) was chosen because it is a brief screening measure of psychopathology supported by a substantial body of research, including correlational studies reporting convergent validity data with more comprehensive psychological measures such as the MMPI-2. The SCL-90-R is widely used in clinical settings, making it accessible to those who actually work with hypersexual patients. As an assessment measure, it provides results for nine psychological symptom patterns and three indices of general symptom distress (see Table 1).

There is extensive literature supporting the SCL-90-R as a reliable and useful tool for psychological and symptomatic assessment. The SCL-90-R has also been used to monitor treatment outcomes across a broad domain of clinical populations (Derogatis & Fitzpatrick, 2004). Applications of the SCL-90-R have been utilized in numerous studies, including some investigations of particular interest to hypersexuality researchers, such as depression and anxiety (Starcevic, Bogojevic, & Marinkovic, 2000), trauma (Ross & Haley, 2004), substance-related disorders

Table 1. Comparison of SCL-90-R mean scores for hypersexual and college subjects.

	Group		<i>F</i>
	Hypersexual	College control	
HBI			
Total score	67.73	32.76	248.87**
Control	31.71	13.62	286.18**
Coping	23.36	13.62	87.41**
Consequences	12.66	5.53	175.03**
SCL-90-R			
Somatization	57.80	58.42	.10
Obsessive Compulsive	68.53	62.56	10.53**
Interpersonal Sensitivity	68.95	62.11	11.92*
Depression	70.80	64.40	13.16**
Anxiety	62.80	58.73	3.22
Hostility	58.75	55.85	3.30
Phobic Anxiety	58.83	55.93	2.52
Paranoid Ideation	58.83	56.76	1.04
Psychoticism	72.15	60.67	48.94**
Global Severity Index	69.64	62.98	13.43**
Positive Symptom Distress Index	60.17	55.33	11.78**
Positive Symptom Total	66.81	62.42	8.29*

Note: * $p < .01$; ** $p < .001$.

(Benjamin, Mossman, Graves, & Sanders, 2006), pathological gambling (González-Ibáñez, Mora, & Gutierrez-Maldonado, 2005) and eating disorders (Herpertz-Dahlmann, Wewetzer, Schulz, & Remschmidt, 1996; Manara, Manara, & Todisco, 2005; Zeeck et al., 2007). These studies analyze disorders with symptoms similar to those found in hypersexual behavior, such as impulse control and emotional dysregulation.

The brevity of the SCL-90-R makes it an ideal instrument to measure symptoms diagnostically and across treatment outcomes in clinical settings. This characteristic was attractive to the authors of this paper, who are also clinical practitioners. If hypersexual patients show several elevations across subscales on the SCL-90-R, the measure could subsequently be used across sessions of psychotherapy to determine the effectiveness of treatment interventions. Although the area of outcome research is outside the scope of this article, it should be noted that there is a paucity of outcome studies on the efficacy of treatment with hypersexual patients, creating an important need for researchers to focus their attention on ways this population can be best served by mental health professionals.

Purpose of this study

The first purpose of this study is to assess what psychological symptom patterns might exist among a sample of patients seeking help for hypersexual behavior. It is anticipated that patients, on average, will experience greater overall symptom distress than will the controls. More specifically, it is predicted that hypersexual patients will experience greater tendencies towards obsessiveness, depression, anxiety, interpersonal sensitivity and social alienation, as frequently implied in the

current literature. It is not anticipated that any patterns of somatization, psychosis, paranoia or hostility will be present among hypersexual patients as a group.

A second prediction of this study is that greater overall symptom distress will be positively correlated with greater tendencies toward hypersexual behavior. It is anticipated that the strongest correlations will exist between hypersexuality and measures of affect regulation (e.g. depression).

Thirdly, it is anticipated that a portion of hypersexual patients will show few to minimal elevations across the various scales of psychopathology measured by the SCL-90-R. If the analysis shows evidence in support of this hypothesis, it will substantiate a perception that hypersexual patients are not a homogenous group. This could have implications for clinicians who use standardized approaches in working with this population. It is our contention that each patient requires an individualized assessment and clinicians who use the same treatment strategy for each hypersexual patient will likely experience increased treatment failures, attrition or even deterioration across psychotherapy.

Finally, if rich insight or observations are obtained from the SCL-90-R (e.g. a significant portion of patients show clinical elevations on various scales or show other evidence of psychological distress), clinicians may consider using the SCL-90-R as both an assessment and outcome measure in their clinical practices.

Methods

Participants

The patient sample used in this study consisted of men ($n = 59$) recruited from an outpatient clinic that specialized in the treatment of hypersexuality. Ethnic representation among the sample included Asian ($n = 1$), Hispanic ($n = 1$) and Caucasian ($n = 57$) and participants ranged from 19 to 54 years of age ($M = 31.9$, $SD = 9.1$). Relationship status included never married ($n = 23$), first marriage ($n = 27$), remarried ($n = 6$), separated ($n = 1$) and divorced ($n = 2$). Sexual preferences included homosexual ($n = 5$), bisexual ($n = 2$) and heterosexual ($n = 52$). A portion (27%) of the participants in the patient sample attended university full-time, which partially influenced the rationale for using a college sample as a control group. A substantial majority of patients were self-referred and perceived their behavior as problematic. In some cases, a spouse or partner insisted they receive help, although once engaged in treatment, these individuals reported that they appreciated the encouragement offered by loved ones.

Self-reported presenting sexual behaviors among the patient sample included compulsive masturbation (56%), pornography dependence (51%), habitual solicitation of commercial sex workers (7%), extra-marital affairs (21%) and excessive unprotected sex with multiple anonymous partners (12%).

The college control sample ($n = 54$) was obtained from several undergraduate classes. A portion of the sample was drawn from evening classes in which non-traditional students participated, which provided some data more representative of a community sample (e.g. individuals who worked full-time, attended college in the evenings and were older than the average college student). This is reflected in the higher mean age of the college sample ($M = 26$, $SD = 4$, range 20–38 years). Ethnic representation among the sample included Asian ($n = 3$), Hispanic ($n = 1$), Native American ($n = 1$) and Caucasian ($n = 49$). Relationship status included never married ($n = 28$), first marriage ($n = 23$), remarried ($n = 2$) and divorced ($n = 2$).

Sexual preferences represented included homosexual ($n = 2$), bisexual ($n = 1$) and heterosexual ($n = 52$).

Procedure

The members of the patient sample were selected consecutively based on (1) a primary complaint reported during intake and assessment being excessive and out-of-control sexual behavior and (2) willingness to participate in research, as reflected in consent provided at the outset of the treatment process. We had a 97% rate of participation from those who were invited to be involved in our research. Patients received no incentives to participate and all subjects in the study signed informed consent. The SCL-90-R, the HBI and a small battery of several other tests were administered to the patient sample. These tests were used as a regular part of intake at the clinic. The college sample was given informed consent and invited to participate in this study for extra credit in their courses. They completed the study measures under a condition of anonymity.

Measures

Hypersexual Behavior Inventory

The Hypersexual Behavior Inventory (HBI; Reid & Garos, 2007) is a 19-item, self-report measure that yields a 3-factor solution that was initially extracted using a maximum likelihood method with oblique rotation on a clinical sample ($n = 324$). The findings were later replicated and confirmed in a second clinical sample ($n = 203$) consisting of patients from treatment clinics across several demographic regions in the USA, including Utah, California, Pennsylvania, Kentucky, Texas and Arizona. The HBI purports to capture the extent to which respondents use sex to cope with emotional discomfort (e.g. anxiety); the degree to which they feel unable to control their sexual thoughts, feelings and behavior; and the extent to which they experience negative consequences as a result of their sexual activities. Respondents endorse items on a 5-point Likert scale ranging from 1 (never) to 5 (very often). The scale has demonstrated high overall reliability ($\alpha = .95$) and subscale reliability values of $\alpha = .91$ on the Control subscale, $\alpha = .91$ on the Coping subscale and $\alpha = .89$ on the Consequences subscale. Confirmatory factor analysis (CFA) has provided support for the factor structure, showing an acceptable goodness-of-fit with a Root Mean Square Error of Approximation (RMSEA) of .057 and a Comparative Fit Index (CFI) of .95. The HBI also showed an acceptable goodness-of-fit using CFA with a mixed college sample ($n = 450$) from Utah, Texas and Kentucky, yielding an RMSEA of .06 and a CFI of .95 (Reid & Garos, 2007). Test-retest reliability was derived from a sample of college students ($n = 81$) over a two-week period. The total HBI score ($r = .85$), the Control subscale ($r = .87$), the Coping subscale ($r = .87$) and the Consequences subscale ($r = .88$) all showed high correlations between the first and second administrations, suggesting excellent test-retest reliability over a two-week time interval. A recommended total scale cut-off score of 53 or higher to classify men as hypersexual was statistically calculated based on the work of Jacobson and Truax (1991). The HBI has shown strong concurrent validity with the Compulsive Sexual Behavior Inventory ($r = .92$, $p < .01$; Coleman, Miner, Ohlerking, & Raymond, 2001), the Sexual Compulsivity Scale ($r = .82$,

$p < .01$: Kalichman & Rompa, 1995) and the Sexual Addiction Screening Test ($r = .73$, $p < .01$: Nelson & Oehlert, 2008). The scale also shows excellent sensitivity (.92) and adequate specificity (.62) in classifying hypersexual patients (Reid & Garos, 2007).

Symptom Checklist-90-Revised

The Symptom Checklist-90-Revised (SCL-90-R) is a 90-item self-report measure that has its origins in the Hopkins Symptom Checklist developed by Derogatis and associates (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974), which was originally designed to capture data for the constructs of depression, anxiety, anger-hostility and obsessive-compulsivity. The SCL-90-R evolved from this original instrument by adding scales for the constructs of somatization, schizophrenia, interpersonal sensitivity, phobic anxiety and paranoid ideation. The current form yields T-scores for the nine primary symptom scales and for three global indices reporting on a broad range of psychological problems. Items are scored on a 5-point Likert scale ranging from 0 (not at all distressed) to 4 (extremely distressed). Traditional psychometric properties are well established. Derogatis, Rickels and Rock (1976) found that internal consistency for the SCL-90-R ranged from .77 (Psychoticism) to .90 (Depression). Test-retest validity studies show consistency over time. In a one-week retest sample of 94 outpatients, test-retest validity ranged from .78 (Hostility) to .90 (Phobic Anxiety) (Derogatis, 1994), while a ten-week retest sample of 103 outpatients resulted in test-retest validity ranging from .68 (Somatization) to .83 (Paranoid Ideation) (Horowitz, Rosenberg, Baer, Ureno, & Villaseñor, 1988).

Results

Group comparisons

As shown in Table 1, it is evident that the SCL-90-R captures meaningful differences between hypersexual subjects and the control group of college students, with hypersexual individuals presenting with more elevated scores. Consistent with findings from other studies, differences emerge in obsessive and depressive features; in contrast, there is not a significant difference for anxiety even though such a difference has been noted in other research. Also, similar to other studies, hypersexual individuals report more interpersonal difficulties. Of particular interest, hypersexual patients report significantly more psychoticism than do members of the control group; inspection of group differences at the item level, however, rather than reflecting actual psychoticism, reveals that this difference is driven by a few items examining loneliness/interpersonal distance and distress/guilt over sexual thoughts and actions. Not surprisingly, these elevations translate to significantly higher scores for hypersexual patients on the three SCL-90-R global indices.

Discriminant function analysis

To better understand the nature of these differences and how meaningfully they account for group membership (hypersexual versus control), we performed a multivariate analysis of our data. This analysis also served to help account for possible predictive redundancy across multiple predictor variables. Although a

variety of techniques is available for multivariate assessment, discriminant function analysis (DFA) is sufficient for our purposes because it provides a straight-forward presentation of how the various subscales can be used to classify subjects. In effect, DFA both examines the capacity of multiple variables to distinguish groups and, by combining weighted subscale scores into a single index (called the discriminant function), yields a single cut-score to predict group membership. (When membership in more than two groups is being predicted, multiple functions and cut-scores are required.) The accuracy of this score and cut-off can then be easily compared to actual group membership.

For the DFA, the nine SCL-90-R Primary Symptom Dimension subscales were used as predictors of group membership. The three global indices were not included in the analysis, both because of their redundancy with the symptom scales and because they do not reveal specific information about which symptoms are most predictive of the presence of hypersexual problems.

This analysis yielded a highly significant function, with canonical correlation = .66 and Wilkes' $\lambda = .57$ ($\chi^2 [9] = 60.23, p < .001$). Weights for this function are found in Table 2, along with the pooled within-group correlations between discriminating variables and the standardized canonical discriminant function. In keeping with the univariate analyses above, the strongest association with the final function is with Psychoticism, followed by Depression, Interpersonal Sensitivity, and Obsessive-Compulsive. Among the various weights, the largest contributions come from Psychoticism and Obsessive-Compulsive, with Paranoid Ideation and Somatization appearing to function as moderator variables.

Group membership

The DFA function yields a score for each participant. When a cut score is applied to yield group sizes approximately equal to the actual group membership sizes, the score, in effect, predicts group membership. The predicted group classifications can be compared to actual group classification, as shown in Figure 1. As can be seen, this yields an overall classification accuracy of 77%, with 75% of hypersexual clients being correctly classified as hypersexual and 80% of normal subjects being correctly classified as such.

Table 2. Discriminant function standardized weights and index of contribution.

SCL-90-R subscales	Standardized weights ¹	Structure correlations ²
Somatization	-.433	-.04
Obsessive Compulsive	.280	.35
Interpersonal Sensitivity	-.203	.38
Depression	.072	.40
Anxiety	-.087	.20
Hostility	.118	.20
Phobic Anxiety	-.106	.17
Paranoid Ideation	-.552	.11
Psychoticism	1.321	.76

Notes: ¹Weights are standardized to allow for greater comparability; ²For each subscale the within-group correlations between the subscale and the standardized canonical discriminant function score are pooled.

Clinically meaningful elevations

In clinical practice we are usually interested in clinically meaningful elevations to determine whether patients fall within various groups. That same principle can be applied to understand how frequently hypersexual subjects produce SCL-90-R elevations that are diagnostically significant (usually regarded as $T \geq 63$ for the SCL-90-R). To better understand how frequently such elevations are found in hypersexual individuals versus the control group, frequencies of participants falling above and below this threshold on the SCL-90-R scales were computed (see Table 3). For these data, 91% of hypersexual subjects had at least one clinical elevation among the Primary Symptom Dimension subscales, with 81% having two or more elevations and 78% having three or more elevations. Comparable percentages for the college students were 74% with at least one elevation, 60% with two or more and 56% with three or more elevations. As shown in Table 3, scales with the most frequent elevations are Psychoticism (85% of the hypersexual subsample), Depression (78%), Interpersonal Sensitivity (72%) and Obsessive-Compulsive (63%). As can be seen, elevations are also rather common in the control sample

Actual group membership	Predicted		Total (% correctly classified)
	Hypersexual	College	
Hypersexual	44	15	59(75)
College	11	44	55(80)
Total (% correctly classified)	55(80)	59(75)	114(77)

Figure 1. Predicted group membership based on the discriminant function.

Table 3. Percentage of participants, by group, with elevated ($T \geq 63$) SCL-90-R scores.

SCL-90-R subscales	Percent with T-scores ≥ 63		χ^2
	Patients	Controls	
Somatization	33.9	34.5	.01
Obsessive Compulsive	66.1	47.3	4.12
Interpersonal Sensitivity	72.9	45.5	8.90**
Depression	76.3	60.0	3.49
Anxiety	52.5	38.2	2.37
Hostility	35.6	27.3	.91
Phobic Anxiety	39.0	29.1	1.24
Paranoid Ideation	32.2	27.3	.33
Psychoticism	88.1	47.3	22.00**
Global Severity Index	74.6	52.7	5.90*
Positive Symptom Distress Index	42.4	18.2	7.83**
Positive Symptom Total	76.3	52.7	6.93*

Note: p values for χ^2 based on Fisher's Exact Test; * $p < .05$; ** $p < .01$.

of college students, suggesting that caution should be used in interpreting the elevations as necessarily indicating the presence of clinical attributes.

In examining the data, we noticed that 25% of the hypersexual patients ($n = 15$) did not have clinically significant scores ($T \geq 63$) on the GSI. We isolated these patients as a separate group and compared their HBI scores ($M = 59.9$) to those of the remainder of their cohort ($M = 70.4$), revealing a significant difference in the severity of hypersexuality scores ($t [57] = 2.83, p < .01$) in relation to their level of overall symptom distress.

Associations between hypersexuality and the SCL-90-R

Not only were we able to examine hypersexuality as a function of group membership, but all subjects had completed the HBI, which yielded various scores reflecting the degree of hypersexuality. The correlations of HBI scores with SCL-90-R scores are found in Table 4. Not surprisingly, the correlates are with essentially the same variables as emerged as important in the analyses above. Interestingly, even though the HBI subscales assess different aspects of hypersexuality, the correlates with the SCL are not particularly different.

We also examined the within-group correlations and compared them. Hypersexual Behavior Inventory variability was much less within groups than it is for all subjects combined, as would be expected given the large mean difference across groups. Although a number of within-group correlations were still significant, overall they were smaller and not meaningfully different between the groups.

Discussion

In comparing hypersexual patients to a college sample on indices of hypersexual behavior and psychological symptom distress, several significant differences

Table 4. Correlations of HBI and SCL-90 scales.

SCL-90-R subscales	HIB scores for all subjects combined				HBI total score by group		
	Total	Control	Coping	Consequences	Hypersexual	Control	z
SOM	.02	.01	.02	.03	.15	-.02	.89
O-C	.38**	.36**	.35**	.35**	.25	.27*	-.09
I-S	.42**	.40**	.40**	.35**	.28*	.35**	-.39
DEP	.46**	.42**	.44**	.41**	.34**	.38**	-.21
ANX	.23*	.20*	.23*	.20*	.19	.10	.46
HOS	.19*	.15	.25**	.13	.02	.19	-.88
PHOB	.25**	.24**	.21*	.25**	.30*	.14	.84
PAR	.16	.11	.23*	.11	.20	.06	.73
PSY	.64**	.63**	.54**	.60**	.44**	.35**	.53
GSI	.44**	.41**	.42**	.40**	.36**	.28*	.48
PSDI	.45**	.45**	.39**	.42**	.45**	.23	1.32
PST	.35**	.32**	.36**	.31**	.25	.27*	-.14

Notes: * $p < .05$; ** $p < .01$. SOM = Somatization; O-C = Obsessive Compulsive; I-S = Interpersonal Sensitivity; DEP = Depression; ANX = Anxiety; HOS = Hostility; PHOB = Phobic Anxiety; PAR = Paranoid Ideation; PSY = Psychoticism; GSI = Global Severity Index; PSDI = Positive symptom Distress Index; PST = Positive Symptom Total.

emerged. Although it is not entirely surprising that the patient sample was significantly different from the college sample in the severity of their hypersexuality, it should be remembered that college-age young adults are often more sexually adventurous, they make riskier sexual decisions and they are more vulnerable to subtypes of hypersexuality (e.g. pornography dependence) than are subjects drawn from a community sample (Chng & Moore, 1994; Paul, McManus, & Hayes, 2000). However, it should be noted that the college sample in this study included some non-traditional students in order to more closely resemble a community sample.

The pattern of psychological symptoms that emerged in the patient population included obsessiveness, interpersonal sensitivity, depression and psychoticism. The obsessive nature of the patient group is reflected in their inability to manage intrusive sexual thoughts, their excessive preoccupation with sex and their indulgence in sexual behavior that is sometimes used to inoculate restlessness caused by these tendencies. Interpersonal sensitivity reflects patterns of feeling inadequate, being plagued with self-doubt and experiencing attention bias in their interpersonal relations, meaning that they often assume others will perceive them in a negative way. Interpersonal sensitivity also parallels some aspects of shame (e.g. contempt for the self), which is common among hypersexual populations (Adams & Robinson, 2001; Reid, Harper, & Anderson, in press). Although anxiety scores were not significantly different between the groups, it should be noted that as a group, the hypersexual patients' average ($M = 62.03$) was just shy of a 63, a T-score which would have placed the group average in a clinical range.

The elevated scores for depression among the patient sample merit some consideration. This finding is partially counterintuitive because anhedonia is an associated feature of depressed mood states. Interestingly, this observation has been noted in other studies of hypersexual populations (e.g. Bancroft & Vukadinovic, 2004; Raviv, 1993; Reid et al., 2008; Weiss, 2004) as well as in general studies of men, depression and sexuality (Angst, 1998; Matthew & Weinman, 1982; Nofzinger et al., 1993). One explanation for this finding is the possibility that these individuals use the intoxicating features of sex to tranquilize themselves from the unpleasant aspects of a depressed mood state. Some research suggests that the pattern of increased sexual interest in association with negative mood states occurs for approximately 15–25% of individuals (Bancroft & Vukadinovic, 2004). In the current sample, a substantial portion of the patients showed increased patterns of sexual behavior despite feeling depressed. This paradoxical relationship is worthy of consideration in future investigations.

The finding that psychoticism was so prominent in all analyses was not expected. Eysenck's original conceptualization of psychoticism (Eysenck & Eysenck, 1968) was not an index of overt psychosis but a collection of attributes, such as recklessness, disregard for common sense and emotional coldness, that presumably made individuals more vulnerable to psychotic conditions. The SCL-90-R operationalization of this construct includes items assessing overt schizotypal/psychotic symptoms (4 items) and a fear that something is wrong with one's mind and body (2 items), but it also includes items directly relevant to hypersexuality (e.g. thoughts about sex bother one a lot and one should be punished for one's sins) as well as the emotional flatness and social distance commonly described in hypersexual individuals (e.g. feeling lonely when one is with people and never feeling close to another person). It is our contention that because of these choices regarding content, the Psychoticism

subscale has inadvertently become an index of hypersexuality for subjects who otherwise do not endorse the items about thought disorder. Item analysis confirms this because the hypersexual group is not elevated on any of the overt schizotypal/psychotic items but has strong endorsement of the item about sex and moderate endorsement – well beyond that of the control group – of the items about emotional distance, punishment for sins and concern that something is wrong with one's mind.

An important observation upon a cursory glance of the results indicates that the SCL-90-R might be sensitive to overpathologizing non-clinical student populations, as evident in the high average scores across several subscales in the college sample. The tendency to produce higher scores than unscreened adult non-patient normative data among college samples has also been noted in other studies (Barker-Collo, 2003; Porter, Wilson, & Frisch, 1994; Todd et al., 1997). This trend is somewhat problematic as it can lead to the overidentification of caseness among college students (caseness defined by a T-score ≥ 63 on the GSI or on two or more of the nine clinical subscales). Some have suggested that a more accurate comparison in order to reduce symptomatic false positives among college samples is to use the SCL-90-R norms for unscreened non-patient adolescents (Todd et al., 1997). Nevertheless, despite these limitations, the SCL-90-R clearly detected differences between the groups on several subscales and global indices.

The clinical usefulness of the SCL-90-R among this population as an outcome measure has yet to be determined. The constellation of meaningful elevations in the hypersexual patients suggests that the SCL-90-R highlights the presence of psychological symptoms that require treatment and the utility of the SCL-90-R in outcome research has been noted among populations that exhibit similar tendencies of behavioral inhibition, such as substance-use, eating disorders and pathological gambling (González-Ibáñez et al., 2005; Herpertz-Dahlmann et al., 1996; Hulse & Tait, 2002; Ro, Martinsen, Hoffart, & Rosenvinge, 2003; Weinstein, Gottheil, & Sterling, 1997). The results of these data suggest at a minimum that there is something to be measured among hypersexual patients across the course of psychotherapy and that the SCL-90-R is sensitive to these symptoms of psychological distress apparent in this group.

Limitations

Despite a number of interesting findings, this study is limited in several ways. This study is correlational and therefore does not address whether the various SCL-90-R elevations exert a causal or interactive affect on hypersexual behavior. This study also possesses the limitations commonly associated with, and found in, studies in which self-report measures are used.

Inferences about our findings beyond those listed in this study should be made with caution, in part because our sample was completely male and also because many of the subjects in our control group were college students, which the SCL-90-R appears to overpathologize. We also did not screen for mental health disorders among the college sample, which could have affected the current results. In addition, a more diverse ethnic representation among subjects in our sample would have been ideal.

Although this sample lacks patients with comorbid hypersexuality and substance-related disorders, which has been noted in other studies (Kafka & Prentky, 1994), we see this dynamic as a strength because the absence of

substance-related problems makes these patients a more pure sample of the construct we are attempting to investigate, namely hypersexual behavior.

Future research

There are several findings from this study that might prompt future research. In particular, the SCL-90-R, because of its brevity and some sensitive to change, has become common as a change measure in outcome therapy research. We might, then, study the association among hypersexual clients of change in hypersexual behavior with changes in SCL-90-R attributes. Unfortunately, the SCL-90-R provides little insight into more enduring clinical attributes such as those found in Axis II disorders. Although some ideas have been advanced (Montaldi, 2002) about possible Axis II characteristics of hypersexual patients, personality disorders among this population is a domain that remains virtually untapped and could be the topic of future studies. Similarly, studies are needed to investigate whether medical etiology is implicated in hypersexuality. For instance, do hypersexual patients experience abnormal levels of androgens that might influence their behavior? Currently, the domain of hypersexuality remains a largely uncharted field that welcomes research by inquisitive investigators and multi-center studies across various geographic regions would be a particularly valuable contribution to the existing literature.

Conclusion

This study used the SCL-90-R to investigate the presence of psychological symptom patterns among a group of hypersexual patients compared with a control group. A number of significant differences emerged, including elevated scores for the hypersexual group showing tendencies toward interpersonal sensitivity, depression, obsessiveness, social alienation and preoccupation with sexually intrusive thoughts (captured by elevated scores on psychoticism). There were also overall differences on global indices of distress. Although the SCL-90-R showed some trend toward overpathologizing college students, it clearly detected significant differences between the patient and control groups on several subscales and global indices. These findings suggest that the SCL-90-R can provide clinically useful information for assessment in a hypersexual population. Future studies should consider utilizing the SCL-90-R in outcome research to determine the effectiveness of treatment interventions with hypersexual patients.

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