

MMPI-2 Correlates of Sexual Preoccupation as Measured by the Sexuality Scale in a College Setting

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The current study explored associations between MMPI-2 scales and a measure of sexual preoccupation college students. Participants were 846 undergraduate students at a Midwestern university who completed the MMPI-2 and Sexuality Scale. Correlational analyses were conducted by gender to identify significant relations, which were then examined for potential gender differences. Results indicated significant correlations between sexual preoccupation scores and a wide variety of psychopathological symptoms measured by the MMPI-2, with especially strong associations demonstrated for externalizing dysfunction. There were no statistically significant gender differences in the pattern of correlations. Implications for the assessment and treatment of sexual preoccupation, as well as for future studies, are discussed.

INTRODUCTION

Compulsive sexual behavior is one of the theoretical models that has been developed to describe excessive or uncontrolled sexual cognitions and behaviors that lead to subjective distress, functional impairment, or negative consequences (Quadland, 1985). As originally proposed, compulsive sexual behaviors were theorized to be a combination of cognition and affect, or sexual preoccupation, and sexualized behaviors over which an individual has poor control. Additionally, sexually compulsive behaviors were hypothesized to be distressing and performed despite the presence of negative consequences (Quadland, 1985). In more practical terms, sexual

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preoccupation and compulsions are experienced as a wide variety of intrusive sexual thoughts, fantasies, and urges that result in repetitive sexual behaviors (Black, Kehrberg, Flumerfelt, & Schlosser, 1997).

According to this theory of excessive sexual behavior, the poorly controlled behaviors theoretically are different from those of the “normal” population. Previous research has demonstrated associations between report of sexual compulsivity and an increased frequency and variety of sexual fantasies, number and variety of sexual partners, and frequency and variety of sexual interactions (Coleman, Miner, Ohlerking, & Raymond, 2001; Kalichman et al., 1994; Lee, Ritchey, Forbey, & Gaither, 2009). Individuals who endorsed multiple indicators of sexual compulsivity have been demonstrated to be more likely to engage in risky sexual behavior with one-time partners, as well be at higher risk for sexually transmitted infections when compared to individuals not reporting symptoms of sexual compulsivity (Bancroft & Vukadinovic, 2004; Gullette & Lyons, 2005; Kalichman & Cain, 2004). Previous research has also supported high rates of comorbidity between compulsive sexual behavior and Axis I mood, anxiety, substance use, and impulse control disorders, as well as Axis II histrionic paranoid, and obsessive-compulsive personality disorders (Black et al., 1997; Raymond, Coleman, & Miner, 2003). Lastly, sexual compulsivity has also been related to negative cognitive and behavioral outcomes in psychosocial domains (Black et al., 1997; McBride, Reece, & Sanders, 2007, 2008).

While sexual compulsivity describes both cognitive and behavioral aspects of excessive sexual behaviors, sexual preoccupation is a term that can be used to describe the cognitive aspects (Coleman, 1987). Sexual preoccupation can theoretically be related to the concept of obsession as described in the revised, fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000). The sexualized cognitions are a product of an individual's mind and include a pattern of recurrent and persistent thoughts, impulses, or images that are experienced as intrusive or inappropriate. However, unlike DSM-IV-TR defined obsessions, in the case of sexual preoccupation, the cognitions are exclusively sexual in content and can create marked distress or anxiety that is expressed in sexual activity.

Sexual preoccupation is described frequently as an aspect of various sexual disorders. Excessive sexual fantasy has been noted in exhibitionism, fetishism, frotteurism, pedophilia, and non-specific paraphilias (Laws & O'Donohue, 1997). Each disorder has its own unique fixation for the sexual preoccupation, but underlying each is a recurrent theme of intrusive sexual thoughts. 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 larger percentage of participants reported fantasies related to paraphilia behaviors that were not acted on.

There are also documented accounts of sexual preoccupation in research examining the long-term effects of childhood abuse on sexuality. Noll, Trickett, and Putnam (2003) demonstrated sexual preoccupation frequently is a long-term effect of abuse, even after accounting for pathological dissociation, depression, anxiety, and other sexual problems in victims of sexual abuse. The authors hypothesized sexual preoccupation in these cases was an unexpressed and internalized form of sexual compulsivity. Further, Noll, Horowitz, Bonanno, Trickett, and Putnam (2003) demonstrated a small positive association between report of sexual preoccupation and sexual revictimization and suggested sexual preoccupation may be related to some confusion between sexual behaviors and emotional intimacy.

There is some evidence to suggest sexual preoccupation can be empirically linked to personality. In a sample of undergraduate students, Heaven et al. (2003) examined the ability of self-report of personality using the Five Factor Model to relate to sexuality related attitudes and behaviors. Results indicated sexual preoccupation was significantly related to higher levels of excitement seeking and imagination, as well as lower levels of dutifulness, modesty, and morality. Additional significant personality predictors of sexual preoccupation in this study included male gender and anxiety.

Conceptualizing the cognitive component of sexual compulsivity as sexual preoccupation is helpful as the construct clearly delineates the level of intrusiveness of sexualized thoughts. This construct also defines some of the conditions required for patterns of sexual thought to be considered a symptom of sexual compulsivity. However, the empirical literature on sexual preoccupation and compulsivity has focused almost exclusively on the behavioral/compulsive outcomes of sexualized thought. We believe this focus has limited linkages between sexual preoccupation and compulsivity to broader networks of psychological theory, especially theories of psychopathology and personality. Research that would allow these links to be made would require the use of measures that allow for a broadband assessment of psychopathology and personality, such as the Minnesota Multiphasic Personality Inventory 2 (MMPI-2; Butcher et al., 2001).

To this end, the present study investigated the associations between self-reported sexual preoccupation, measured using the sexual preoccupation subscale of the Sexuality Scale (SS; Snell & Papini, 1989), and MMPI-2 scales assessing personality and psychopathology in a large sample of undergraduate students. Although our college student sample represents a sample of convenience, Reece and Dodge (2004) have argued that research exploring sexual compulsivity in college students is needed as these individuals are at a critical point in their sexual development. Further, previous research supports the idea that sexual compulsivity in college students is potentially

problematic and has deleterious consequences (Dodge, Reece, Cole, & Sandfort, 2004; McBride, Reece, & Sanders, 2007, 2008).

Broadly, our goal was to examine the links between sexual preoccupation and larger networks of personality and psychopathological constructs. Based on our review of the previous research on sexual compulsivity and preoccupation, we hypothesized that self-reported sexual preoccupation, as measured by the SS, would be most strongly related to MMPI-2 scale scores indicative of symptoms and personality predispositions associated with generalized distress, depression, anxiety, and substance use disorders. We also hypothesized there would be significant associations demonstrated between self-reported sexual preoccupation and MMPI-2 scales describing obsessive thought processes and impulsive behaviors. Lastly, potential differences in the expression of sexual preoccupation by gender were explored, although no specific hypotheses concerning potential gender differences were established *a priori*.

METHOD

Participants

Participants included 846 undergraduate students (264 men and 582 women) from a Midwestern United States university enrolled in Introductory Psychology classes. Participants ranged in age from 18 to 48 ($M = 19.18$, $SD = 2.48$) and were Caucasian ($n = 775$, 91.6%), African American ($n = 44$, 5.2%), or of another or unidentified ethnicity ($n = 27$, 3.2%). To participate in the study participants had to be at least 18 years of age and had to speak English as their primary language (as required to complete the MMPI-2; Butcher et al., 2001).

To reduce error variance in the statistical analyses and based on recommendations for research with the MMPI-2 (Butcher, Graham, Kamphuis, & Rouse, 2006), 82 participants were excluded for potentially responding in an invalid manner to the instruments. Invalid responding for the MMPI-2 was defined by raw scores greater than 30 on the Cannot Say (?) scale, MMPI-2 T-Scores greater than 80 on the Variable Response Inconsistency (VRIN), Lie (L), and Correction (K) scales, 80T or 80F on True Response Inconsistency scale (TRIN), and scores greater than 100 on the Frequency (F), Frequency Back (Fb), or Frequency of Psychopathology (Fp) scales, as suggested by the instrument's technical manual (Butcher et al., 2001). For the SS, sexual preoccupation subscale scores were considered invalid if 10% or more of all items on the subscale were not completed. Of the 82 participants excluded from analyses, 69 invalidated on the MMPI-2, 12 invalidated on the SS, and one participant invalidated on both instruments. Potential demographic differences between participants who were excluded versus those that were retained were examined using chi-square and *t*-test analyses.

Results indicated no significant differences in ethnicity, gender, or age between individuals who responded validly or invalidly to either the MMPI-2 or the SS. The final sample, after excluding participants who responded invalidly, consisted of 764 students (233 men and 531 women) ranging in age from 18 to 48 ($M = 19.21$, $SD = 2.57$) who indicated they were Caucasian ($n = 698$, 91.4%), African American ($n = 40$, 5.2%), or of another or unidentified ethnicity ($n = 26$, 3.4%).

Materials

MINNESOTA MULTIPHASIC PERSONALITY INVENTORY-2

Revised from the original Minnesota Multiphasic Personality Inventory designed by Hathaway and McKinley (1940), the MMPI-2 (Butcher et al., 2001) is a 567 item, true/false self-report inventory. Intended to assess social, behavioral, and emotional functioning, the MMPI-2 is the most widely used broadband instrument assessing personality and pathology used in clinical practice (Camara, Nathan, & Puente, 2000). The MMPI-2 Technical Manual provides extensive reliability and validity data for this instrument (Butcher et al., 2001). Internal consistencies of the MMPI-2 substantive scale scores in the current study are presented in Table 1.

SEXUALITY SCALE, SEXUAL PREOCCUPATION SUBSCALE

The Sexuality Scale (SS; Snell & Papini, 1989) consists of 30 items that asks respondents to rate how much they agree or disagree with each statement using a 5-point Likert-type scale ($-2 = Highly Disagree$, $2 = Highly Agree$). The SS contains three subscales including sexual esteem, sexual depression, and sexual preoccupation, and a total score for each subscale is obtained by summing the ratings. The sexual preoccupation subscale consists of 10 items. Factor analysis indicated items scored on the sexual preoccupation subscale loaded substantially on their corresponding factor with an average loading of .65 (range = .41 to .84) and accounted for 32% of the common variance (Snell & Papini, 1989). Estimates of internal consistency were .88 for male and female respondents and test-retest reliability ranged from .70 to .76. Internal consistency in the current sample was acceptable ($\alpha = .89$ for both men and women). Previous research has supported the validity of the subscale, with sexual preoccupation scores related to scores on conceptually related self-report measures (e.g., erotophilia), as well as self-reports of sexual behaviors and experiences (Snell, Fisher, & Schuh, 1992).

Procedure

In exchange for credit in their General Psychology courses, participants completed a computerized administration of the MMPI-2 and an electronic

TABLE 1 Internal Consistency Estimates for the Substantive Scales of the MMPI-2 (N = 764)

MMPI-2 Scale	Men	Women	MMPI-2 Scale	Men	Women	MMPI-2 Scale	Men	Women
	N = 233	N = 531		N = 233	N = 531		N = 233	N = 531
	α	α		α	α		α	α
Clinical			Content			Supplementary		
1 (Hs)	.78	.80	ANX	.86	.86	A	.91	.91
2 (D)	.69	.69	FRS	.71	.75	R	.65	.48
3 (Hy)	.52	.53	OBS	.78	.78	Es	.72	.68
4 (Pd)	.66	.66	DEP	.88	.88	Do	.45	.47
5 (Mf)	.62	.41	HEA	.78	.81	Re	.67	.63
6 (Pa)	.59	.53	BIZ	.80	.74	Mt	.88	.88
7 (Pt)	.90	.89	ANG	.78	.77	Pk	.89	.90
8 (Sc)	.90	.90	CYN	.81	.82	MDS	.67	.69
9 (Ma)	.67	.60	ASP	.76	.73	Ho	.85	.85
0 (Si)	.84	.87	TPA	.74	.73	O-H	.25	.29
			LSE	.84	.85	MAC-R	.60	.40
Restructured Clinical			SOD	.84	.87	AAS	.73	.73
RCd	.89	.89	FAM	.76	.81	APS	.46	.37
RC1	.79	.78	WRK	.86	.87	GM	.79	.77
RC2	.74	.72	TRT	.84	.84	GF	.67	.63
RC3	.73	.76				Psychopathology/ Personality Five		
RC4	.80	.77				AGGR	.71	.64
RC6	.72	.64				PSYC	.78	.74
RC7	.85	.85				DISC	.67	.57
RC8	.79	.74				NEGE	.85	.84
RC9	.81	.77				INTR	.74	.75

Note. MMPI-2 = Minnesota Multiphasic Personality Inventory 2. Scale abbreviations by MMPI-2 Family- Clinical: 1 (Hs) = Hypochondriasis, 2 (D) = Depression, 3 (Hy) = Hysteria, 4 (Pd) = Psychopathic Deviate, 5 (Mf) = Masculinity-Femininity, 6 (Pa) = Paranoia, 7 (Pt) = Psychasthenia, 8 (Sc) = Schizophrenia, 9 (Ma) = Hypomania, 0 (Si) = Social Introversion; Restructured Clinical: RCd = Demoralization, RC1 = Somatic Complaints, RC2 = Low Positive Emotions, RC3 = Cynicism, RC4 = Antisocial Behavior, RC6 = Ideas of Persecution, RC7 = Dysfunctional Negative Emotions, RC8 = Aberrant Experiences, RC9 = Hypomanic Activation. Content: ANX = Anxiety, FRS = Fears, OBS = Obsessiveness, DEP = Depression, HEA = Health Concerns, BIZ = Bizarre Mentation, ANG = Anger, CYN = Cynicism, ASP = Antisocial Practices, TPA = Type A Behavior, LSE = Low Self-Esteem, SOD = Social Discomfort, FAM = Family Problems, WRK = Work Interference, TRT = Negative Treatment Indicators; Supplementary Scales: A = Anxiety, R = Repression, Es = Ego Strength, Do = Dominance, Re = Social Responsibility, Mt = College Maladjustment, Pk = Posttraumatic Stress Disorder, MDS = Marital Distress Scale, Ho = Hostility, O-H = Overcontrolled-Hostility, MAC-R = MacAndrew Alcoholism Scale-Revised, AAS = Addiction Acknowledgement Scale, APS = Addiction Potential Scale, GM = Masculine Gender Role, GF = Feminine Gender Role; Psychopathology/Personality Five: AGGR = Aggressiveness, PSYC = Psychoticism, DISC = Disconstraint, NEGE = Negative Emotionality/Neuroticism, INTR = Introversion/Low Positive Emotionality.

survey containing a series of self-report measures (including the SS) as part of a larger study. The MMPI-2 was presented either prior to or after the electronic survey, and all measures in the electronic survey were administered via a Latin Square design. Participation was in accordance with procedures approved by the Institutional Review Board of the University.

RESULTS

To explore possible associations between the SS and the substantive scales of the MMPI-2 (i.e., all standard scored scales of the MMPI-2, excluding validity scales), a series of Pearson Product Moment correlation analyses were calculated. Potential Type I Error was reduced when interpreting the statistical significance of correlations by applying a Dunn-Sidak adjustment in which the number of individual correlations (108 total) were utilized in the calculation of the correction. As a result of this analysis, alpha for the correlational analyses was set to .00047. Interpretation of the magnitude of the correlations followed suggestions from Cohen (1988), with .1, .3, and .5 reflecting small, medium, and large effects, respectively. However, because shared method variance may artificially inflate the magnitude of correlations, correlations of at least a medium effect size (i.e., $r \geq .3$) were emphasized as clinically meaningful, with significant correlations of smaller magnitude discussed only in support of these larger effects. Results of all correlation analyses for men and women are presented in Table 2.

For men, results indicated statistically significant correlations of a moderate effect size between SS Sexual Preoccupation scores and MMPI-2 scales assessing antisocial behavior and aggression (Content Scales Anger [ANG] and Antisocial Practices [ASP] and Supplementary Scale Hostility [Ho]), as well as a disconnect from consensual reality (Psychopathology-Five [PSY-5] Psychoticism [PSYC] scale). The moderate correlations of the Sexual Preoccupation subscale with MMPI-2 antisociality scales converged with statistical significance, but correlations of a small effect size demonstrated with other MMPI-2 scales assessing aspects of antisocial behavior (Clinical Scale 4 [Pd; Psychopathic Deviate], Restructured Clinical Scale 4 [Antisocial Behavior], and Supplementary Scale Social Responsibility [Re]), anger/irritability (Restructured Clinical Scale 7 [Dysfunctional Negative Emotions], Content Scale Type A Behavior [TPA] and PSY-5 Negative Emotionality [NEGE]), and cynicism/alienation from others (Restructured Clinical Scale 3 [Cynicism] and Content Scale Cynicism [CYN]). The moderate correlation for PSYC, suggesting a disconnection from consensual reality, was supported by small associations demonstrated for other scales assessing disordered thinking and processes (Clinical Scale 8 [Sc; Schizophrenia], Restructured Clinical Scale 6 [Ideas of Persecution], and Content Scale Bizarre Mentation [BIZ]). Results also indicated there were statistically significant but small associations between SS Sexual Preoccupation scores with scales indicative of anxiety (Clinical Scale 7 [Pt; Psychasthenia], Content Scales Anxiety [ANX] and Supplementary Scale Welsh's Anxiety [A]), novelty/sensation seeking and risk taking (Supplementary Scale Addiction Acknowledgement Scale [AAS] and PSY-5 Disconstraint [DISC]), and endorsement of stereotypically less feminine gender roles (Supplementary Scale Feminine Gender Role [Gf]).

TABLE 2 Relations between SS Sexual Preoccupation Scores and Substantive Scales of the MMPI-2 (N = 764)

MMPI-2 Scale	Men	Women	MMPI-2 Scale	Men	Women	MMPI-2 Scale	Men	Women
	N = 233	N = 531		N = 233	N = 531		N = 233	N = 531
	<i>r</i>	<i>r</i>		<i>r</i>	<i>r</i>		<i>r</i>	<i>r</i>
Clinical			Content			Supplementary		
1 (Hs)	.17	.12	ANX	.28*	.17*	A	.26*	.20*
2 (D)	.11	.00	FRS	.16	.10	R	-.10	-.16*
3 (Hy)	.04	-.08	OBS	.18	.25*	Es	-.18	-.12
4 (Pd)	.25*	.17*	DEP	.21	.13	Do	-.16	-.11
5 (Mf)	.11	-.04	HEA	.15	.14	Re	-.28*	-.39*
6 (Pa)	.07	.14	BIZ	.28*	.20*	Mt	.29*	.18*
7 (Pt)	.24*	.19*	ANG	.34*	.31*	Pk	.29*	.24*
8 (Sc)	.29*	.26*	CYN	.25*	.26*	MDS	.18	.18*
9 (Ma)	.22	.25*	ASP	.30*	.31*	Ho	.32*	.30*
0 (Si)	.01	.06	TPA	.28*	.27*	O-H	-.21	-.15
			LSE	.17	.11	MAC-R	.07	.17*
Restructured Clinical			SOD	-.08	.04	AAS	.29*	.29*
RCd	.22	.14	FAM	.23*	.19*	APS	.16	.16*
RC1	.15	.13	WRK	.27*	.18*	GM	-.17	-.10
RC2	.10	.03	TRT	.21	.15	GF	-.24*	-.31*
RC3	.28*	.20*				Psychopathology/ Personality Five		
RC4	.29*	.34*				AGGR	.20	.25*
RC6	.23*	.19*				PSYC	.30*	.24*
RC7	.24*	.21*				DISC	.29*	.39*
RC8	.22	.18*				NEGE	.27*	.23*
RC9	.28*	.36*				INTR	.05	.04

Note. * $p \leq .00047$. MMPI-2 = Minnesota Multiphasic Personality Inventory 2. Scale abbreviations by MMPI-2 Scale Family- Clinical: 1 (Hs) = Hypochondriasis, 2 (D) = Depression, 3 (Hy) = Hysteria, 4 (Pd) = Psychopathic Deviate, 5 (Mf) = Masculinity-Femininity, 6 (Pa) = Paranoia, 7 (Pt) = Psychasthenia, 8 (Sc) = Schizophrenia, 9 (Ma) = Hypomania, 0 (Si) = Social Introversion; Restructured Clinical: RCd = Demoralization, RC1 = Somatic Complaints, RC2 = Low Positive Emotions, RC3 = Cynicism, RC4 = Antisocial Behavior, RC6 = Ideas of Persecution, RC7 = Dysfunctional Negative Emotions, RC8 = Aberrant Experiences, RC9 = Hypomanic Activation. Content: ANX = Anxiety, FRS = Fears, OBS = Obsessiveness, DEP = Depression, HEA = Health Concerns, BIZ = Bizarre Mentation, ANG = Anger, CYN = Cynicism, ASP = Antisocial Practices, TPA = Type A Behavior, LSE = Low Self-Esteem, SOD = Social Discomfort, FAM = Family Problems, WRK = Work Interference, TRT = Negative Treatment Indicators; Supplementary Scales: A = Anxiety, R = Repression, Es = Ego Strength, Do = Dominance, Re = Social Responsibility, Mt = College Maladjustment, Pk = Posttraumatic Stress Disorder, MDS = Marital Distress Scale, Ho = Hostility, O-H = Overcontrolled-Hostility, MAC-R = MacAndrew Alcoholism Scale-Revised, AAS = Addiction Acknowledgement Scale, APS = Addiction Potential Scale, GM = Masculine Gender Role, GF = Feminine Gender Role; Psychopathology/Personality Five: AGGR = Aggressiveness, PSYC = Psychoticism, DISC = Disconstraint, NEGE = Negative Emotionality/Neuroticism, INTR = Introversion/Low Positive Emotionality.

For women, results indicated statistically significant correlations of a moderate effect size between SS Sexual Preoccupation scores and MMPI-2 scales assessing antisocial behavior and aggression (Restructured Clinical Scale 4 [Antisocial Behavior], Content Scale Antisocial Practices [ASP],

Supplementary Scales Social Responsibility [Re], and Supplementary Scale Hostility [Ho]), impulsivity (Restructured Clinical Scale 9 [Hypomanic Activation] and PSY-5 Disconstraint [DISC]), anger and irritability (Content Scale Anger [ANG]), and endorsement of stereotypically less feminine gender roles (Supplementary Scale Feminine Gender Role [Gf]). The moderate correlations for these scales converged with statistically significant, but modest correlations demonstrated with other MMPI-2 substantive scales assessing antisocial behaviors and aggression (Clinical Scale 4 [Pd; Psychopathic Deviate] and PSY-5 Aggressiveness [AGGR]), impulsivity (Clinical Scale 9 [Ma; Mania] and Supplementary scale Repression [R]), anger and irritability (Restructured Clinical Scale 7 [Dysfunctional Negative Emotions] and Content Scale Type A Behavior [TPA]), and cynicism/alienation from others (e.g., Restructured Clinical Scale 3 [Cynicism] and Cynicism Content Scale [CYN]). Results also indicated there were statistically significant but small associations between SS Sexual Preoccupation Scores and MMPI-2 scales assessing anxiety and distress (e.g., Content scales Anxiety [ANX], Family Problems [FAM] and Work Problems [WRK], as well as Supplementary Scales Anxiety [A], Maladjustment [Mt], Post-traumatic Stress Disorder [Pk], and Marital Distress Scale [MDS]), aberrant experiences (e.g., Clinical Scale 8 [Sc; Schizophrenia], Restructured Clinical Scales 6 [Ideas of Persecution] and 8 [Aberrant Behaviors], Content Scale Bizarre Mentation [BIZ], and PSY-5 Psychoticism [PSYC]), negative emotionality (e.g., Clinical Scale 7 [Pt; Psychasthenia], Restructured Clinical Scale 7 [Dysfunctional Negative Emotions], Content Scale Obsessiveness [OBS], and PSY-5 Negative Emotionality [NEGE]). Additional modest relations between SS Sexual Preoccupation scores and MMPI-2 scales assessing substance use/abuse (e.g., Supplementary scales MacAndrew's Alcoholism Scale-Revised [MAC-R], Addiction Acknowledgement Scale [AAS], and Addiction Potential Scale [APS]) were demonstrated.

The correlations between sexual preoccupation subscale scores and the substantive scales of the MMPI-2 were compared for potential differences in magnitude between men and women. These comparisons were conducted using a *z*-test for independent correlations (as outlined by Steiger, 1980). No alpha correction was applied for these analyses and the required level of significance was $p \leq .05$ for all comparisons. Results of the *z*-tests indicated that there were no statistically significant differences in the magnitude of MMPI-2 scale score correlations with sexual preoccupation scores between genders.¹

DISCUSSION

The goal of the current study was to examine the association between self-reported sexual preoccupation and a wide variety of personality and psychopathology indicators assessed using the MMPI-2. Overall, the results

provide mixed support for the study's hypotheses as results suggest sexual preoccupation is more strongly related to externalizing than internalizing types of personal and psychopathological pre-dispositions in college-aged men and women. As hypothesized, sexual preoccupation scores were correlated with markers of distress, anxiety, and obsessiveness, but not as strongly as they were related to markers of antisocial behaviors and attitudes, impulsivity, and substance use/abuse tendencies.

Associations between General Psychopathology and Sexual Preoccupation

For both men and women, the pattern of results suggests moderate associations between MMPI-2 scales assessing externalizing forms of psychopathology and self-reported sexual preoccupation. This includes MMPI-2 scales assessing antisocial beliefs, attitudes, and behaviors, as well as substance use/abuse, impulsivity, and disinhibition. These significant associations are congruent with past research that has demonstrated college students reporting higher levels of sexual preoccupation also described themselves as having higher levels of excitement seeking and lower levels of dutifulness, modesty, and morality (Heaven et al., 2003). The personality traits suggested by the current study and the study by Heaven and colleagues may help explain the mechanisms underlying demonstrations of individuals with sexual compulsivity and preoccupation difficulties being more likely to engage in risky sexual behaviors and having higher risk for sexually transmitted infections (Bancroft & Vukadinovic, 2004; Gullette & Lyons, 2005; Kalichman & Cain, 2004).

Graham (2001) reviewed evidence that individuals with higher scores on MMPI-2 scales assessing antisociality, substance use/abuse, impulsivity, and disinhibition are frequently at risk for interpersonal and societal difficulties due to poor behavioral control, difficulties inhibiting inappropriate behaviors, and a disregard for society's standards. More specifically, the pattern of correlations demonstrated in the current study appears to converge on a personality style that manifests in what Harkness, McNulty, Ben-Porath, and Graham (2002) have described as "disconstrait." These individuals are likely to be impulsive in their actions and seek out excitement. Individuals who have high levels of disconstrait are similar to the types of individuals that Zuckerman (1994) described as "sensation seeking" in that they were likely to seek experiences in their environments related to thrill and gaining a sense of adventure, as well as significant difficulties in functioning because of high levels of disinhibition and boredom susceptibility. An underlying personality organization of this type has significant implications for college-aged individuals presenting with sexual preoccupation as it suggests they are likely to engage in behaviors without thinking through the consequences of their actions and are likely to experience a wide variety of psychosocial

dysfunction due to these types of behaviors, especially when substance use/abuse is involved.

Although the results of the study appear to emphasize the association between externalizing psychopathology, unconstrained personality predispositions, and report of sexual preoccupation in college students, it is important to note that statistically significant (though small) associations were also demonstrated between MMPI-2 scales assessing internalizing types of dysfunction and sexual preoccupation. For both men and women, the pattern of relations suggested the report of generalized distress and negative emotions, in addition to the externalizing types of difficulties. Previous studies of sexual compulsivity have suggested that self-reported distress, hopelessness concerning the cessation of sexualized thinking, and negative affectivity (e.g., feelings of anxiety) are frequently of concern for individuals with sexually compulsive behaviors (Black et al., 1997; McBride, Reece, & Sanders, 2007, 2008; Raymond, Coleman, & Miner, 2003). Due to the correlational nature of this study, it is impossible to conclude the cause and effect relation between the report of sexual preoccupation, externalizing behaviors, and feelings of distress and a tendency to view experiences as a source of negative emotion. However, the results suggest that difficulties with sexual preoccupation may be related to a wide variety of psychological impairments and symptoms.

One of the most interesting sets of associations demonstrated in this study between sexual preoccupation and MMPI-2 scales were those related to self-report of symptoms typically associated with thought dysfunction. Small to moderate relations were demonstrated between MMPI-2 scales assessing this construct (e.g., Clinical Scale 8 [Sc; Schizophrenia], Content Scale Bizarre Mentation [BIZ], and Psychopathology-Five Scale Psychoticism [PSYC]) for both men and women. Rather than suggestive of difficulties related to psychoticism or schizophrenic-like symptoms, these associations may suggest what Harkness, McNulty, and Ben-Porath (1995) described as a disconnection from consensual reality. While not directly evidenced in this study, it is possible that individuals with high levels of sexual preoccupation may be likely to spend considerable amounts of time engaging in their sexual thinking and fantasies at the expense of staying connected with others. This hypothesis would be congruent with previous research results suggesting that excessive use of Internet pornography (Delmonico & Miller, 2003; Perry, Accordino, & Hewes, 2007), solo sexual activities (e.g., masturbation; Kalichman & Cain, 2004) and engagement in sexual fantasies lacking intimacy themes (Lee et al., 2009) are associated with sexual compulsivity.

In addition to these general findings, it is worth noting that there were no statistically significant differences in the pattern of associations for men and women in this sample. Previous investigators examining sexual compulsivity (e.g., Raymond et al., 2003) have theorized that women may manifest difficulties with sexual compulsivity and preoccupation differently than men due to dissimilarities that have been indicated in the pattern of

sexual arousal, fantasies, and behaviors (see for example Alexander & Sherwin, 1991). However, to our knowledge, these theoretical differences have never been empirically examined. Although in need of replication, the pattern of correlations for men and women in the current study is similar and may provide some evidence to suggest the experience of sexual preoccupation and psychopathology (at least in college students) may be more related to a general personality style than gender differences.

Limitations

There were several limitations of the current study. First, generalizability of the current results are restricted by the composition of the sample, which consisted primarily of first year, Caucasian college students who may have limited experiences with sexuality and/or sexuality related difficulties. The likely restricted range of sexual preoccupation scores may have influenced the strength of the associations that were demonstrated. Second, the current study did not assess for other important aspects of sexuality (e.g., frequency of engagement in specific types of sexualized thought and behaviors). Although this is of concern, it should be noted that Lee and colleagues (2009) conducted a study on college students at the same university and found their participants were similar to other college student samples in terms of engagement in sexual behaviors and participation in risky sexual behaviors (e.g., unprotected vaginal and anal sex). This provides some reassurances that this set of individuals is not likely different from other samples.

Clinical Implications

There are three strong implications of the current study that clinicians should be aware of when assessing and treating clients presenting with difficulties related to sexual preoccupation. First, results broadly suggest the MMPI-2 can be helpful in broadening the context of the presenting problem for individuals reporting sexual preoccupation difficulties. Regular use of the MMPI-2 in evaluations of individuals reporting sexual preoccupation would allow for the large and ranging body of MMPI-2 research findings related to personality and pathology to be utilized (see for example, Graham, 2006 and Greene, 1999). Second, results of the current study suggest that difficulties with sexual preoccupation (as measured by the SS) may be strongly related to a disconstrained personality orientation—manifested in antisocial or impulsive behaviors, as well as excitement seeking and difficulties with behavioral inhibition. Harkness, McNulty, Ben-Porath, and Graham (2002) reviewed therapeutic implications of treating individuals with high levels of disconstraint and suggested these individuals are likely to benefit from exploring constructive ways of behaving that still meet their needs for novelty, excitement seeking, and risk-taking. This approach may be appropriate for individuals presenting with this personality style who also are indicating

problems with sexual preoccupation. Last, results of the current study suggest that, when assessing an individual presenting with difficulties related to sexual preoccupation, an important area of assessment should include the individual's connection to a consensual reality (Harkness & McNulty, 1994). Answering questions concerning the individual's experience of alienation from others, engagement in unrealistic thinking, and ability to engage in reality testing could provide helpful targets in the treatment of sexual preoccupation.

Research Implications

There are several implications of the current research for future empirical investigations. First, the pattern of correlations in the current study suggested there are associations between the cognitive aspects of sexual compulsivity (sexual preoccupation) and a wide variety of broader personality traits and associated psychopathological impairments. In other words, as the level of self-reported sexual preoccupation increased, scores on several MMPI-2 scales assessing personality traits associated with externalizing dysfunction and related impairments increased. For the upcoming revision to the DSM-IV-TR (APA, 2000), several pivotal studies in psychopathology research have recently indicated that psychological dysfunction can be linked to underlying personality and temperamental markers in a way that allows for the disorders to be better assessed and differentiated (see Clark, 2005). Previous studies have related sexual compulsivity to reports of impairments in psychosocial domains (e.g., self-reported difficulties within social, occupational, and academic domains) and engagement in sexual behaviors (e.g., Dodge et al., 2004; McBride et al., 2007, 2008), but rarely have examined underlying personality and temperamental predictors (for an exception see Heaven et al., 2003). While the current study does not directly explore these associations, the results imply that personality orientations can be helpful in understanding sexual preoccupation, as well as link this sexuality construct to a larger body of research on psychopathology. We believe this area of research could be pursued in future studies.

Second, results of the current study suggest that the associations between sexual preoccupation (representing only cognitive aspects of sexual compulsivity) and personality traits and psychopathological constructs may be different for those of the broader sexual compulsivity construct. Uniquely in this study, small to moderate associations were demonstrated between MMPI-2 markers of thought dysfunction and sexual preoccupation. This suggests an interesting area for future research in terms of the potential of individuals reporting high levels of sexual preoccupation and/or compulsivity also reporting a disconnection from a consensual reality reflected in social alienation and the decreased ability to engage in reality testing. This might be an especially important area of research to pursue with sexual offenders who also report sexual compulsivity/preoccupation, as both sexual preoccupation

and deviant and distorted beliefs (possibly related poor reality testing) have been demonstrated to be associated with increased risk for recidivating (Hanson & Morton-Bourgon, 2005).

Finally, no gender differences in associations between MMPI-2 scales and sexual preoccupation scores were demonstrated in the current study. However, we believe strongly that future research examining the question of gender differences in the pattern of association between sexual preoccupation/compulsivity and other constructs of interest should be pursued.

CONCLUSION

The current study examined associations between the substantive scales of the MMPI-2 and self-reported sexual preoccupation in male and female college students. Broadly, results indicated small to moderate associations between reports of sexual preoccupation and measures of personality and psychopathology variables related to externalizing dysfunction (e.g., antisocial attitudes and behaviors, impulsivity and behavioral disinhibition, substance use/abuse, anger, and aggression). Additional results indicated small associations between sexual preoccupation reports and the report of negative emotionality (primarily related to anxiety). These two findings are largely in congruence with previous studies demonstrating sexual preoccupation was negatively related to facets of agreeableness and conscientiousness, as well as positively related to neuroticism, within a Five-Factor Trait model of personality (Heaven et al., 2003). Uniquely in comparison to previous studies, results suggest a statistically significant association between report of sexual preoccupation and thought dysfunction—possibly indicating a disconnection from consensual reality. Lastly, the current study indicated there were no statistically significant gender differences in the associations between sexual preoccupation and measures of broader personality and psychopathology variables. These results, although limited in generalizability to populations outside of a college setting, have implications for the assessment and treatment of individuals presenting with difficulties related to sexual preoccupation, as well as for future empirical research studies examining this construct.

NOTE

1. As these results were non-significant, the actual z -test results are not presented. These results are available from the first author.

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