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Which Dimensions of Human Sexuality Are Related to Compulsive Sexual Behavior Disorder (CSBD)? Study Using a Multidimensional Sexuality Questionnaire on a Sample of Polish Males

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ABSTRACT

Introduction: Human sexuality is a multidimensional phenomenon related to several factors, such as self-esteem, awareness of sexual needs, and ability to communicate them to others.

Aim: To examine the sexual characteristics of patients seeking treatment for compulsive sexual behavior disorder (CSBD)—a clinical diagnosis recently included in the 11th edition of the International Classification of Diseases classification.

Methods: We have investigated the sexual characteristics of 72 Polish men seeking treatment for CSBD compared with 208 men from the Polish general population.

Main Outcome Measures: The Multidimensional Sexual Questionnaire—PL was used to examine 12 sexual aspects of human sexuality. The severity of CSBD symptoms was assessed using Sexual Addiction Screening Test—PL, and the severity of problematic pornography use was measured by Brief Pornography Screener.

Results: Results show that CSBD patients (when compared with the general population) exhibit higher sexual anxiety, sexual depression, external sexual control, and fear of sexual relationship. Furthermore, CSBD severity is negatively related to sexual esteem, internal sexual control, sexual consciousness, sexual assertiveness, and sexual satisfaction.

Clinical Implications: Our findings suggest that the impairment of the abovementioned dimensions warrant attention during clinical work and future studies on CSBD.

Strengths & Limitations: This study was limited to men, most of whom self-identified as heterosexual. Future research should include women and non-heterosexual identified individuals.

Conclusion: Sexual esteem, consciousness, assertiveness, satisfaction and internal sexual control are commonly affected among CSBD individuals and should be properly addressed during the clinical interview and treatment intervention. **Kowalewska E, Kraus SW, Lew-Starowicz M, et al. Which Dimensions of Human Sexuality Are Related to Compulsive Sexual Behavior Disorder (CSBD)? Study Using a Multidimensional Sexuality Questionnaire on a Sample of Polish Males. J Sex Med 2019;16:1264–1273.**

Key Words: Compulsive Sexual Behavior Disorder; Multidimensional Sexuality Questionnaire; Human Sexuality; Sexual Satisfaction; Psychological Tendencies

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INTRODUCTION

Compulsive sexual behavior disorder (CSBD), due to the multitude of negative consequences reported by male [1–6] and female patients [7,8] (E. Kowalewska and M. Gola, unpublished data, 2019), was recently added by the World Health Organization in the forthcoming 11th edition of the International Classification of Diseases (ICD-11; 6C72).[9] CSBD is characterized by "a persistent pattern of failure to control intense, repetitive sexual impulses or urges resulting in repetitive sexual behavior".[10] Definition of CSBD is based on 3 primary criteria: preoccupation to the point of obsession with sexual fantasies or behavior, loss of control over sexual fantasies or behavior, and negative consequences that are linked to sexual fantasies or behavior.

To date, most of the studies on CSBD have focused on the measurement of its symptoms,[11–15] assessment of the "loss of control over sexual behavior" and treatment-seeking behavior,[1,8] relationship to religiousness/religiosity,[15–17] psychiatric comorbidity,[10,18] cognitive functioning and neural correlates,[3,19–22] or similarities to addictions.[6,23–25] Currently, there is a lack of data describing the sexual functioning of people with CSBD from a multidimensional perspective. Among the many psychological aspects that can influence people's sexual behavior, sexual self-esteem is considered critical for sexual satisfaction. Research suggests that sexual self-esteem predicts a higher ability to communicate with a partner about satisfying sexual behaviors.[26]

Sexual self-esteem is also positively associated with extroversion, agreeableness, and conscientiousness but negatively associated with neuroticism.[27] Sexual monitoring (awareness of the public impression that one's sexuality has on others) and self-monitoring positively correlate with sexual anxiety and an internal locus of control in groups of college men.[28–30]

Thus far, some studies suggest that pornography can have a potentially negative impact on sexual functioning. For instance, pornography use has been negatively associated with sexual satisfaction among American coupled heterosexual men [31,32] and male college students.[33,34] Another study, conducted by Egan and Parmar,[35] revealed an association between Internet pornography consumption, sexual preoccupation, personality, and obsession in relation to excessive Internet use. In subsequent studies, exposure to Internet pornography has been linked to lower sexual esteem,[36] higher sexual motivation,[37] and sexual anxiety and avoidance within romantic relationships.[38] In subsequent studies, researchers found that all types of sexual perfectionism, understood as a tendency to set extremely high standards for performance accompanied by tendencies for overly critical self-evaluations and concerns about negative evaluations by others about one's sexual life, showed positive correlations with preoccupied, fearful, and dismissing attachment [39] and sexual monitoring.[40] Furthermore, preoccupation with sexual thoughts is related to aggression and antisocial behavior in college-aged men.[41] Research also suggests that childhood sexual abuse is related with lower perceived sexual control in adulthood [42] and lower sexual assertiveness, understood as a tendency to be assertive about sexual aspects of one's life. Sexual control has been found to be a partial mediator of the relationship between sexual self-esteem and sexual satisfaction.[43] Currently, there is a paucity in the literature examining the sexual functioning and characteristics of individuals seeking treatment for CSBD. More research is needed to describe the characteristics of individuals reporting problems managing their sexual behavior, particularly with regard to problematic pornography use.

Hypothesis

Based on prior work, we hypothesized that self-esteem, sexual anxiety, monitoring, and assertiveness would be impaired among individuals with CSBD. However, human sexuality is a multidimensional phenomenon, and other dimensions of sexual functioning can be affected in CSBD. Therefore, using Multidimensional Sexual Questionnaire (MSQ) and other questionnaires (described in the Material and Methods section), we sought to explore differences between CSBD patients and control subjects, as well as to assess the correlations between specific dimensions and CSBD symptoms.

MATERIAL AND METHODS

Participants

Clinical Group

The clinical sample consisted of 72 heterosexual men (age 22–56; mean 35.36, SD 7.70) seeking pharmacologic or psychological treatment due to the loss of control over their sexual behaviors. All individuals were interviewed by qualified psychiatrist and met ≥4 of 5 criteria of CSBD (according to ICD-11).[9] All individuals were interviewed by a qualified psychiatrist. Inclusion criteria were meeting ≥4 of 5 ICD-11 criteria for CSBD, adults ≥ 18 years of age, the Sexual Addiction Screening Test – Polish language version (SAST-PL) score ≥ 6. Patients meeting diagnostic criteria for other addictions (Alcohol Use Disorders Identification Test score ≤ 16, South Oaks Gambling Screen score ≤ 5), psychotic or bipolar disorder, serious brain injury/lesion, or with current depressive disorder were excluded from this study. 90.3% of participants self-identified as "exclusively heterosexual," 6.9% as "predominantly heterosexual, only incidentally homosexual," 1.4% as "predominantly heterosexual, but more than incidentally homosexual," and 1.4% as "exclusively homosexual" on the Polish adaptation of the Kinsey Scale.[44] Sexual history and pornography use characteristics are presented in Table 1.

Control Group

The healthy control sample consisted of 208 men (aged 21–52; mean 27.78, SD 5.75). 82.5% of them self-identified as exclusively heterosexual, 8.2% as "Predominantly heterosexual, only

incidentally homosexual," 1% as "Predominantly heterosexual, but more than incidentally homosexual," 1% as "Equally heterosexual and homosexual," 1.5% as "Predominantly homosexual, but more than incidentally heterosexual," 1.5% as "Predominantly homosexual, only incidentally heterosexual," and 4.1% as "Exclusively homosexual" on the Polish adaptation of the Kinsey Scale.[44] Participants were recruited via the Internet. Those who completed the online survey were eligible to win a prize (bookstore voucher or ticket to movie theater). Analyses were performed on a group of men who did not experience a loss of control over sexual behavior, obtained ≤5 points in SAST-PL, aged 18+, and with the same exclusion criteria as in the clinical group.

Questionnaires

To examine the relationships between different dimensions of sexuality and CSBD symptoms, participants completed 3 instruments. 12 individual propensities associated with sexual relationships were measured by the Polish-language version of the MSQ (MSQ-PL). The higher scores on the MSQ-PL subscales, the greater amount of the relevant sexual tendency (absolute range from 0−240). CSBD symptom severity was measured by the SAST-PL).[1,11] A cutoff value for SAST-PL is 5 (absolute range 0−20), and a higher score indicates a greater intensify of compulsive sexual behaviors. Finally, severity of the problematic pornography use was assessed using the Brief Pornography Screener−Polish-language version (BPS-PL),[45,46] with a cutoff point of 4 (absolute range 0−10). The higher the result obtained, the greater the problem of pornography use. The study was approved by the Ethical Committee of the Institute of Psychology, Polish Academy of Sciences, and all the participants provided an informed consent in accordance with the ethical standards of the institutional or national research committee and with the 1964 Helsinki declaration and its later amendments.

Table 1. Sexual history and pornography use characteristics of both samples

Characteristics	Healthy controls (n = 208)	Clinical group (n = 72)
First sexual intercourse		
Onset of first sexual intercourse	N = 164; mean 18.48; SD 3.24	N = 3; mean 19.84; SD 3.77
Never had sexual intercourse	N = 27	N = 9
Refused to answer	N = 17	—
Pornography use		
Onset of first pornography use	N = 181; mean 12.16; SD 2.85	N = 72; mean 13.04; SD 3.72
Never watched pornography	N = 5	—
Refused to answer	N = 22	—
In the last week (7 days), how much time did you spend watching erotic or pornographic materials? (in minutes)	N = 148; mean 128.32; SD 183.52	N = 65; mean 231.23; SD 240.39
No pornography during the last week	N = 43	—
Refused to answer	N = 17	N=7
In the last year, how many unique sexual partners have you had?	N = 134; mean 2.97; SD 4.00	N = 50; mean 2.38; SD 3.48
Refused to answer	N = 74	N = 22
Number of times engaged in sexual intercourse during the last week (7 days)	N = 91; mean 3.03; SD 3.12	—
Number of times engaged in sexual intercourse during the last month (30 days)	—	N = 39; mean 4.92; SD 4.69
Refused to answer	N = 117	N = 33
Number of times masturbating during the last week (7 days)	N = 147; mean 5.05; SD 4.07	N = 65; mean 4.74; SD 3.80
Refused to answer	N = 61	N = 7
Loss of control over sexual behavior	—	N = 65
Time spent watching pornography		81.5%
Excessive masturbation		81.5%
Paid sexual services		18.5%
Casual sexual contacts		10.8%
Excessive fantasizing and focusing on sexual behavior		47.7%
Internet chats, webcams		17.5%
Other		4.2%
Refused to answer		N = 7

Responses to questions were not mandatory; thus, some missing data occurred.

Characteristics of MSQ

The original version of the MSQ [47] consists of 60 basic statements that concern the topic of sexual relationships, and 1 additional statement, which is used to determine whether the participant responded to all items based on a current sexual relationship, a past sexual relationship, or an imagined sexual relationship. The basic 60 items constitute 12 subscales that concern the following: (i) Sexual Esteem—a generalized tendency to positively evaluate one's capacity to relate sexually with another person; (ii) Sexual Preoccupation—the tendency to become absorbed in, obsessed with, and engrossed with thoughts about the sexual aspects of life; (iii) Internal Sexual Control—the belief that the sexual aspects of one's life are determined by one's own personal control: (iv) Sexual Consciousness—the tendency to think and reflect about the nature of one's sexuality; (v) Sexual Motivation—the desire to be involved in a sexual relationship; (vi) Sexual Anxiety—the tendency to feel tension, discomfort, and anxiety about the sexual aspects of one's life; (vii) Sexual Assertiveness—the tendency to be assertive about the sexual aspects of one's life; (viii) Sexual Depression—the tendency to feel depressed about the sexual aspects of one's life; (ix) External Sexual Control—the belief that human sexuality is determined by influences outside of one's personal control (e.g., chance); (x) Sexual Monitoring—the tendency to be aware of the public impression that one's sexuality makes on others; (xi) Fear of Sexual Relationships—a fear of engaging in sexual relations with another individual; and (xii) Sexual Satisfaction.

The internal consistency of the MSQ Questionnaire subscales (measuring using Cronbach's α) ranged from 0.71−0.94, with an overall average of 0.85. Confirmatory factor analysis confirmed a 12-factor structure.[47]

Analysis revealed that the MSQ was associated with the Sexual Relationship Scale,[48] a measure of communal and exchange approaches toward sexual relations. Exchange approach toward sex was positively associated with the Sexual Preoccupation Scale, Sexual Motivation Scale, Sexual Anxiety Scale, Sexual Depression Scale, External Sexual Control Scale, and Sexual Monitoring Scale, while negatively related to the Sexual Esteem Scale, Internal Sexual Control Scale, Sexual Consciousness Scale, and Sexual Satisfaction Scale. In turn, communal approach toward sex was positively correlated to the Sexual Esteem Scale, Sexual Preoccupation Scale, Internal Sexual Control Scale, Sexual Consciousness Scale, Sexual Motivation Scale, Sexual Assertiveness Scale, and Sexual Satisfaction Scale. According to the author's investigation, participants who were more willing to take a quid-pro-quo approach to sex and to keep an eye on their sexual activities described themselves as preoccupied with sex, and they perceived their sexual relations as due to chance or luck. Individuals who approached their sexual relations from a more interpersonal perspective (communal approach to sex) perceived themselves in a highly favorable way (i.e., greater sexual esteem), and they also described themselves as sexually assertive and sexually aware.[47]

The MSQ was also correlated with people's attitudes toward sex.[49] Individuals who were more preoccupied with sex, or those who were characterized by an external approach toward sex, held more liberal sexual attitudes endorsing open and casual sex and approved of manipulative attitudes toward sex. Individuals with more communal and responsible sexual attitudes regarded themselves as being more sexually aware, motivated, and internally controlled.

Research has also examined the relationships between heterosexual men's sexual experiences as examined by the Human Sexuality Questionnaire,[50] the Scale of Sexual Experience,[51] and the 12 MSQ subscales.[47] A higher number of sexual experiences is related to greater sexual esteem, sexual motivation, and sexual satisfaction. Individuals with higher sexual experience report more positive views about their own sexuality and sexual capability and are more satisfied with the sexual aspects of their life. In turn, individuals who were anxious and depressed about their sexuality, and those who had an external orientation to the sexual aspects of their life, were less involved in a variety of sexual experiences.

MSQ-PL is characterized by the same structure as original instrument. The translated version of the questionnaire can be found in the Supplement.

Characteristics of SAST-PL

The SAST-PL [1,11] consists of 20 items, divided into 5 scales: (i) Affect Disturbance—low mood, with potential depressive states and high level of anxiety related to one's own sexual behavior and its consequences; (ii) Relationship Disturbance—significant difficulties in sustaining a close relationship due to one's own sexual behavior; (iii) Preoccupation—persistent, obsessive thoughts on one's own sexual behavior; (iv) Loss of Control—inability to refrain from specific sexual behavior, despite the resulting problems and costs; and (v) Associated Features—issues related to the experience of sexual abuse in childhood, sexual problems experienced by parents, and engagement in sexual activity with minors.

The SAST-PL was validated on a sample of 442 men aged 18−51 years (mean 27.72; SD 6.36), of which 116 sought treatment for CSBD. It was shown to have parameters similar to those of the original version and a very high internal consistency. Cronbach's α coefficient was identical to that in the original version ($\alpha = 0.90$). The discriminatory power of each item, estimated as its correlation with the overall result, was very close to the English version. Furthermore, the results confirmed the authors' theoretical assumption concerning the 5-factor structure of the SAST-R, and analysis of a receiver operating characteristic curve showed that 5 test points appear to be the optimal cutoff value for the classification of clinical groups, ensuring sensitivity of 99.1% and specificity of 78.3% (in the original version, the cutoff value was 6 points). The relatively short form (20 test items) and good psychometric and classification qualities described above make SAST-PL a good screening test for symptoms of CSBD, and it may be successfully used by clinicians and researchers.

Characteristics of BPS-PL

BPS-PL[45,46] is a 5-question tool created to identify problematic pornography use. Psychometric properties of this instrument were examined on U.S. and Polish samples of 3,561 subjects (both treatment-seeking and non-treatment—seeking individuals), which make it useful for scientists and clinicians. Analyzes carried out on all groups revealed high internal consistency of a tool. Furthermore, BPS correlated positively with other instruments measuring problematic pornography use.[52,53]

Examination of the psychometric properties of the BPS-PL was carried out on a group of 703 Polish adults (512 women, 191 men) aged 18—54 years (mean = 26.04; SD = 6.07). BPS-PL has been shown to have high internal consistency ($\alpha = 0.89$). Confirmatory factor analysis using diagonally-weighted least-squares approach confirmed author's original assumption of a 1-factor structure. Conducted analysis revealed excellent fit of BPS-PL: $\chi^2(5) = 2.12$, $P = .83$ (Root Mean Square Error of Approximation = 0.00, Standarized Root Mean Square Residual = 0.02, Comparative Fit Index = 1.00, Tucker-Lewis Index = 1.00). As it turned out, men (mean 3.56, SD 3.11) scored higher on BPS-PL than women (mean 1.12, SD 1.92), and BPS-PL scores were positively correlated with results obtained on SAST-PL in both groups.

Next, 105 Polish male adults aged 18—55 years (mean 32.94; SD 7.45) who were seeking treatment for CSBD were assessed to examine a cutoff value of the BPS-PL. Men from the clinical group scored significantly higher (mean 7.50; SD 2.58) than 191 male control subject from the study on BPS-PL psychometric features.

Evaluation of the performance of the classification of clinical sample (n = 105) in comparison to the control group (n = 191) using receiver operating characteristic curve revealed that 5 BPS-PL items are characterized by 95% CI with limits of 77.5% and 86.9%. The optimal clinical cutoff score is 4, for which sensitivity is 90.5% and specificity 58.4%.

RESULTS

Between-Group Comparison

We first compared the results obtained by CSBD patients (n = 72) and a control population of men (n = 208) on SAST-PL and BPS-PL scales and each of the 12 dimensions of the MSQ-PL (Figure 1 and Table 2). We used a Mann-Whitney U test for this purpose, because of the large difference in the number of subjects in each group. The results found significant differences between groups for the Sexual Esteem Scale ($Z = 3.48$; $P < .001$), Internal Sexual Control Scale ($Z = 3.95$; $P < .001$), Sexual Consciousness Scale ($Z = 2.95$; $P < .01$), Sexual Anxiety Scale ($Z = 5.65$; $P < .001$), Sexual Assertiveness Scale ($Z = 3.44$; $P < .01$), Sexual Depression Scale ($Z = 4.70$; $P < .001$), External Sexual Control Scale ($Z = 2.06$; $P < .05$), Fear of Sexual Relationships Scale ($Z = 3.49$; $P < .001$), Sexual Satisfaction Scale ($Z = 3.83$; $P < .001$), SAST-PL ($Z = 10.61$; $P < .001$), and BPS-PL ($Z = 9.48$; $P < .001$). Groups did not significantly differ only in the Sexual Preoccupation Scale, Sexual Motivation Scale, and Sexual Monitoring Scale.

Correlation Between CSBD Symptoms and MSQ-PL Dimensions

Further analysis focused on the examination of which dimensions of the MSQ-PL are related to CSBD symptoms in both

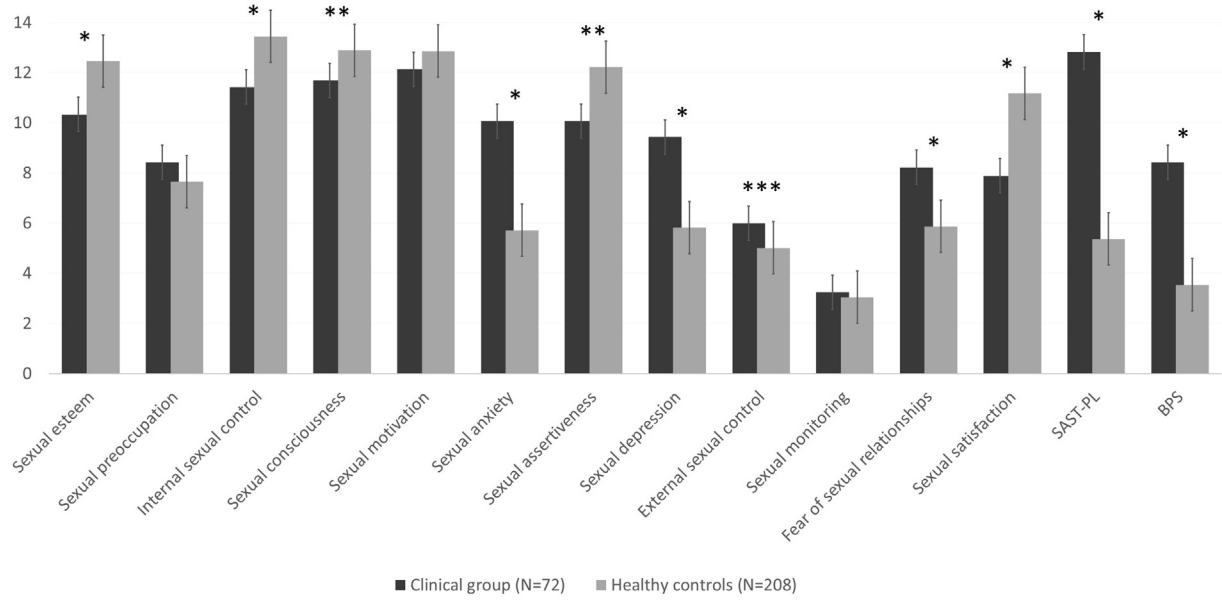

Figure 1. Comparison of mean scores obtained by patients with CSBD and healthy control subjects on the 12 dimensions of MSQ-PL, SAST-PL, and BPS-PL. BPS-PL = Brief Pornography Screener—Polish language version; CSBD = compulsive sexual behavior disorder; MSQ-PL = Multidimensional Sexuality Questionnaire—Polish-language version; SAST-PL = Sexual Addiction Screening Test—Polish language version. *$P < .001$; ** $P < .01$; *** $P < .05$.

Table 2. Mean scores on the MSQ-PL subscales, SAST-PL, and BPS-PL for healthy control subjects and clinical group, Z-values of the Mann-Whitney and effect sizes given in values of Glass rank-biserial correlation coefficient.

	Mean (SD)			
	Healthy controls (n = 208)	Clinical group (n = 72)	*Z*	r_{rb}
Sexual esteem	12.46 (4.28)	10.33 (4.71)	$P < .001$	0.275
Sexual preoccupation	7.65 (5.09)	8.42 (5.67)		
Internal sexual control	13.44 (3.54)	11.42 (3.45)	$P < .001$	0.312
Sexual consciousness	12.88 (2.94)	11.69 (2.98)	$P < .01$	0.232
Sexual motivation	12.86 (4.32)	12.13 (4.07)		
Sexual anxiety	5.71 (5.26)	10.06 (5.52)	$P < .001$	-0.446
Sexual assertiveness	12.22 (4.29)	10.06 (4.99)	$P < .01$	0.272
Sexual depression	5.82 (5.63)	9.43 (5.61)	$P < .001$	-0.370
External sexual control	5.01 (5.11)	5.99 (4.54)	$P < .05$	-0.162
Sexual monitoring	3.04 (3.99)	3.24 (3.85)		
Fear of sexual relationships	5.86 (4.47)	8.22 (5.00)	$P < .001$	-0.275
Sexual satisfaction	11.17 (6.27)	7.88 (5.56)	$P < .001$	0.303
MSQ-PL total score*	107.67 (20.22)	108.85 (20.42)		
SAST-PL total score†	5.37 (4.21)	12.82 (2.71)	$P < .001$	-0.753
BPS-PL total score‡	3.54 (3.11)	8.42 (2.09)	$P < .001$	-0.841

BPS-PL = Brief Pornography Screener—Polish-language version; MSQ-PL = Multidimensional Sexuality Questionnaire—Polish-language version; SAST-PL = Sexual Addiction Screening Test—Polish language version.
*Absolute range: 0—240.
†Sexual Addiction Screening Test - PL, absolute range: 0—20.
‡Brief Pornography Screener - PL, absolute range: 0—10.

groups. Analysis of the group of men from general population showed that the strongest positive correlations were between the Sexual Addiction Screening Test—PL and Sexual Anxiety Scale ($r = 0.49$; $P < .01$), and Sexual Preoccupation Scale ($r = 0.42$; $P < .01$), whereas the strongest negative correlations occurred for the Sexual Satisfaction Scale ($r = -0.27$; $P < .01$) (Table 3). In the case of the BPS-PL, the strongest positive correlation for men from general population occurred for the Sexual Anxiety Scale ($r = 0.32$; $P < .01$), whereas the Sexual Satisfaction Scale ($r = -0.19$; $P < .05$) correlated negatively with BPS-PL the most.

The analysis did not show any significant correlations between the MSQ-PL and SAST-PL among individuals meeting the criteria of

Table 3. Correlations between the SAST-PL, and the BPS-PL (2-tailed Spearman's rho) for both samples

	Control group (n = 208)		Clinical group (n = 72)	
Dimension	SAST-PL	BPS-PL	SAST-PL	BPS-PL
Sexual esteem	−0.085	−0.04	−0.13	−0.21
Sexual preoccupation	**0.42***	**0.38***	0.23	0.15
Internal sexual control	**−0.23***	−0.15†	−0.18	−0.28†
Sexual consciousness	0.10	0.03	−0.13	−0.18
Sexual motivation	0.16†	0.19*	0.22	−0.01
Sexual anxiety	**0.49***	**0.40***	0.19	0.22
Sexual assertiveness	**−0.25***	−0.09	−0.04	0.03
Sexual depression	**0.39***	**0.32***	0.17	0.18
External sexual control	**0.35***	**0.24***	0.04	0.18
Sexual monitoring	**0.31***	**0.35***	0.12	0.06
Fear of sexual relationships	**0.29***	**0.22***	0.14	0.13
Sexual satisfaction	**−0.27***	−0.19*	−0.12	−0.29†

BPS-PL = Brief Pornography Screener—Polish-language version; SAST-PL = Sexual Addiction Screening Test—Polish language version.
Bonferroni-corrected *P* values are bolded.
*$P < .01$.
†$P < .05$.

CSBD (according to ICD-11). In the case of BPS-PL, the negative correlation occurred for the Internal Sexual Control Scale ($r = -0.28$; $P < .05$) and Sexual Satisfaction Scale ($r = -0.29$; $P < .05$).

DISCUSSION

The current study examined the relationships between various psychological tendencies and symptoms of CSBD (measured with the Sexual Addiction Screening Test-PL and Brief Pornography Screener-PL) [1,45,46] in men with CSBD and without CSBD. Using the Multidimensional Sexuality Questionnaire-PL (MSQ-PL),[47] we were able to explore the multidimensional aspects of sexuality among men with and without CSBD. As expected, CSBD patients scored higher on SAST-PL and BPS-PL as compared with a general population (Figure 1 and Table 2). We found significant differences between groups in 9 of the 12 MSQ-PL scales highlighting that CSBD individuals exhibited higher tendencies of sexual anxiety, sexual depression, external sexual control, and fear of sexual relationship but had lower tendencies for sexual esteem, internal sexual control, sexual consciousness, sexual assertiveness, and sexual satisfaction compared with men without CSBD. Higher level of anxiety and depression and lower sexual esteem are in line with previous studies conducted on a clinical sample of men with CSBD,[54,55] as well as a sample on Internet pornography users.[36,38] In addition, lower levels of sexual dissatisfaction confirm the results of previous studies conducted on American pornography users.[31–34] Among men without CSBD, we found that scores on the SAST-PL correlated positively with the tendency to become absorbed in thoughts about the sexual aspects of life, the anxiety about the sexual aspects of one's life, the tendency to feel depressed about the sexual aspects of one's life, the belief that human sexuality is determined by influences outside of one's personal control, the tendency to be aware of the public impression that one's sexuality makes on others, and a fear of engaging in sexual relations with another individual (R ranging from 0.29–0.49 with $P < .01$). A high number of CSBD symptoms (assessed with SAST-PL) was negatively related to internal sexual control, sexual assertiveness and sexual satisfaction in a group of healthy controls (respectively, $R = -0.23$, $P < .01$; $R = -0.25$, $P < .01$; and $R = -0.27$, $P < .01$). In case of problematic pornography use (measured with BPS-PL), positive correlations were noted for the same tendencies as in SAST-PL. Among men without CSBD, BPS-PL was positively associated with the Sexual Preoccupation Scale, Sexual Anxiety Scale, Sexual Depression Scale, External Sexual Control Scale, Sexual Monitoring Scale, and Fear of sexual relationships Scale. Negative correlations were also noticeable between BPS-PL scores and MSQ-PL subscales, but they were too small to draw conclusions from them.

The same correlational analyses conducted on a clinical sample of 72 individuals seeking treatment for CSBD did not reveal significant positive and negative correlations between SAST-PL scores and MSQ-PL subscales, which may be due to the more complex nature of negative consequences of sexual behavior development in this group (compared to the general population). The severity of problematic pornography use (measured by BPS-PL) was negatively related to internal sexual control ($R = -0.28$, $P < .05$) and sexual satisfaction ($R = -0.29$, $P < .05$).

Our findings show the usability of the MSQ-PL in studies on CSBD and suggest that the above-mentioned dimensions warrant further attention during clinical work and future clinical field trials on CSBD. Detailed assessment of MSQ-PL subscales may also help clinicians in orienting therapeutic interventions toward the most affected and distressing dimensions of their patients' sexual functioning. Currently, there is limited data describing the complexity of sexuality among those seeking treatment for CSBD. Prior work has mostly focused on the frequency of sexual behaviors or examined the severity of symptoms among those seeking treatment for CSBD. However, more research is needed to examine how sexual tendencies, those assessed on the MSQ, are affected among those reporting issues with CSBD. We also believe it would be important to examine the value of dimensions related to CSBD symptoms for developing future diagnostic tests given the World Health Organization inclusion of CSBD in the forthcoming ICD-11 (6C72).[9] In sum, the current study speaks to the complexity of sexual functioning, and the need for more comprehensive examinations of sexual behavior among individuals reporting issues with CSBD.

Limitations

The results of this study should be interpreted considering their limitations. First, we recruited only men in the study, and most of the participants self-identified as heterosexual. Future research is needed to investigate CSBD among women and ethnic and sexual minorities (LGBTQ). Preliminary research examining CSBD among women suggests that clinical presentation and manifestation of CSBD may differ between men and women [8]; however, no current studies have yet examined the relationships between MSQ, problematic use of pornography, and CSBD symptom severity among women. Such information, if gathered, could shed light on possible new approaches for treating CSBD in women. Additionally, the current study used a cross-sectional design and, therefore, cannot speak to causation. Research using longitudinal research designs are needed to understand the temporality of CSBD over the lifespan. Finally, because the control group was recruited via the Internet, it cannot be considered representative of the general population.

CONCLUSIONS

Men with CSBD who are seeking treatment may differ from control population in sexual esteem, consciousness, assertiveness, satisfaction and internal sexual control. These dimensions of

sexual functioning are also correlated with severity of CSBD and pornography use. Thus, all of them warrant attention during the CSBD treatment.

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SUPPLEMENTARY DATA

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