Compulsive Sexual Behavior and Dysregulation of Emotion

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ABSTRACT

Introduction: Dysregulation of emotion (DE) is commonly seen in individuals suffering from compulsive sexual behavior (CSB), as well as represents a crucial element of its common comorbidities like mood, anxiety, and substance use disorders.

Aim: To investigate the links between CSB and DE.

Methods: A review of pertinent literature on CSB and DE was performed using EBSCO, PubMed, and Google Scholar databases.

Main Outcome Measure: Patterns of DE were evaluated as a common clinical feature, underlying mechanisms, as well as a target for psychological and pharmacological interventions in CSB.

Results: Across different conceptualizations of CSB, DE represents the core element of a failure to cope with sexual impulses, thoughts, urges, or resulting uncontrolled sexual behaviors. DE may contribute to the occurrence of CSB while for individuals affected by this condition, sexual arousal and release act as an easier/learned (yet uncontrolled and leading to negative consequences) way of coping with negative mood states. CSB may represent a delusive form of self-regulation. Experience of child sexual abuse and insecure attachment patterns are considered risk factors for CSB (likely to be mediated by DE) but require further investigation. DE is also positively associated with CSB symptom severity. Pharmacological treatments affecting mood regulation, anxiety, impulsivity, and regulation within the brain reward system have been reported to help people with CSB achieve better control over their sexual urges and behavior. However, the available data are scarce and well-powered randomized controlled trials are needed to support these observations. Although improvement in one's emotional self-regulation is considered as an important healing factor in treatment, its benefit in psychological therapies specific to CSB requires further investigation.

Conclusion: DE represents a core symptom of compulsive sexual behavior disorder and related comorbidities as well as a predisposing factor to the development of compulsive sexual behavior disorder. Addressing DE may facilitate better treatment outcomes for patients with CSB. **Lew-Starowicz M, Lewczuk K, Nowakowska I, et al. Compulsive Sexual Behavior and Dysregulation of Emotion. J Sex Med 2020;8:191–205.**

Key Words: Compulsive Sexual Behavior; Hypersexuality; Dysregulation of Emotion; Emotional Regulation; Emotional Self-control

INTRODUCTION

Compulsive sexual behavior (CSB; also referred to as hypersexual disorder [HD]) and dysregulation of emotion (DE) are 2 distinct areas tightly connected by many different threads. In this review, we investigate the links between CSB and DE, looking at them from the angles of (i) DE as an important concept in sexual

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compulsivity and hypersexuality operationalizations, (ii) DE as a component underlying the comorbidity of CSB with other mental disorders (eg, mood and anxiety disorders), (iii) attachment styles and attachment insecurity as a context for DE in CSB, (iv) CSB and emotion regulation abilities, (v) psychopharmacology of DE and CSB, and (vi) psychotherapy of DE and CSB. Literature search was performed using the following scientific databases: EBSCO, PubMed, and Google Scholar. The search included the terms "compulsive sexual behavior," "sexual addiction," "sexual impulsivity," "sexual compulsivity," "hypersexuality," "emotion dysregulation," "emotion regulation." In addition, a number of articles were included in the review through cross-referencing.

EMOTION REGULATION AND DYSREGULATION

Emotion regulation has been traditionally conceptualized as all the intrinsic and extrinsic processes responsible for monitoring, evaluating and modifying emotional reactions, especially their intensive and temporal features to accomplish one's goals.[1,2] Conversely, DE is defined as deficits manifesting in several interrelated areas: (i) awareness of emotions, (ii) acceptance of emotions, (iii) the ability to control impulsive behaviors, (iv) ability to behave in accordance with desired goals when experiencing negative emotions, (v) emotional clarity, and (vi) the ability to use situationally appropriate emotional regulation strategies to achieve personal goals and meet situational demands.[3]

As defined above, DE underlies many psychopathological disorders and is a significant contributor to various negative health outcomes.[4–7] For example, research drawn from 2 large-size representative samples in a cross-sectional design (study 1, n = 1,130; Study 2, n = 9,616) found that emotional competencies (which refer to emotion regulation, identification, understanding, expression, and use of emotions) predicted objective health symptom indicators (eg, drug consumption, consumption of health services or medical consultations) over and above other important factors like gender, education, body mass index, social support, physical activity, diet or alcohol, and tobacco use habits. In addition, other works have suggested that emotion competencies attenuate or even compensate for the detrimental influence of other risk factors.[8]

DYSREGULATION OF EMOTION AS A CORE CONCEPT IN CSB OPERATIONALIZATION

Broadly speaking, CSB is characterized by a persistent pattern of a failure to control intense, recurrent sexual impulses, thoughts, or urges, resulting in repetitive sexual behavior. In line with the current draft of the 11th version of the *International Classification of Diseases* (ICD-11), CSB will be recognized as a mental health disorder (compulsive sexual behavior disorder, [CSBD]), the main features of which include (i) high preoccupation with sexual behavior, which results in the neglect of other spheres of functioning, (ii) loss of control over sexual behavior; (iii) involvement in sexual activities despite risk of negative consequences; (iv) significant distress experienced as a result of one's own sexual behavior; and (v) continued engagement in sexual behavior despite no enjoyment or satisfaction not being derived from it.[9,10] Although there are notable conceptions of CSB that do not postulate a prominent role of DE,[11,12] in the available literature, we can find numerous conceptualizations of CSB-related symptom clusters, and many of them directly refer to a crucial role of DE in the development, recognition, and diagnosis of CSB.[11,13–18] For instance, in the criterion set of hypersexual disorder (HD) proposed by Kafka[16] for the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, yet rejected, raised issues regarding emotional control, affect regulation and dysregulation are referenced in 4 of 6 criteria: Repetitively engaging in sexual fantasies, urges or behaviors in response to dysphoric mood states (eg, anxiety, depression, boredom, irritability) (criterion 2); Repetitively engaging in sexual fantasies, urges, or behaviors in response to stressful life events (criterion 3); Repetitive but unsuccessful efforts to control or significantly reduce these sexual fantasies, urges, or behaviors (criterion 4); and Repetitively engaging in sexual behaviors while disregarding the risk for physical or emotional harm to self or others (criterion 5)

As noted in Goodman's model explaining out-of-control sexual behaviors had 3 main components, of which the first was (i) impaired affect regulation, with the additional 2 features pertaining to (ii) impaired control of behavior and (iii) deviations in the functioning of the motivational reward system.[11]

Discussing various conceptualizations of the CSB etiology, Bancroft and Vukadinovic[13] underlined that the role of affect is important in most, if not all cases of episodes of CSB. In their work, they described 3 routes, through which a negative, dysregulated affect might lead to the development of CSB: (i) Sexual stimulation and sexual activity of a compulsive character might serve as a way to achieve regulatory goals while being in depression states. Such aims may include the establishment of personal contact via sexual activity, enhancement of self-esteem by the feeling of being desired by another person, feeling of validation by another person, or the anticipation of mood improvement after reaching an orgasm. This was also supported by the evidence suggesting that for a significant subset of people (15–25%), depression is, paradoxically, connected with increased sexual arousal.[19,20] (ii) Sexual arousal could distract from negative mood-inducing situations or stimuli (eg, sexual fantasies or activity provide a chance to move one's attention from distressing situations in personal life). (iii) A route that does not consider emotion regulation processes specifically, however, suggests the possibility of transferring nonsexual arousal linked to negative emotional states (eg, anger, anxiety, stress) to sexual

arousal. In this case, sexual arousal plays a role of a conditioned response to high arousal negative mood. The shift of the kind of the arousal (from emotional to sexual) makes an individual more susceptible to develop CSB. This may have a consequence in further deterioration of mood.[13]

Among the more recent models, Walton et al[18] proposed that CSB can be based on a specific, recurrent sequence of behavioral, emotional, and cognitive processes, called "sexhavior cycle." The cycle is purported to have 4 sequential stages: (i) sexual urge (eg, can be present in the form of dysregulated emotional desire), (ii) sexual behavior, (iii) sexual satiation, and (iv) postsexual satiation. These 4 stages are accompanied by cognitive abeyance, which occurs during the stages 1 and 2. During this phase, heightened sexual desire can be accompanied by temporary suspension in cognitive and emotional control. Furthermore, the model stresses that in the postsatiation stage, feelings of incongruence between CSB and one's own values, goals, and beliefs can arise. This stage is characterized by dysregulated emotions and cognitions, such as shame, guilt, and negative judgement of one's own behaviors.

Other model proposed recently by Grubbs et al[15] focuses on the role of moral disapproval of pornography as predicting self-perceived pornography addiction, but DE is postulated to also be one of the factors influencing self-perceived addiction to pornography.[18] Aforementioned examples illustrate the 2 key notions about the CSB-DE connection: (i) DE is a trans-diagnostic and transconceptual construct that lies at the roots of thinking about CSB and CSB-related disorders and (ii) out-of-control sexual behaviors may have their primary source in and can be understood as self-regulation problems.

When discussing conceptualizations of CSB, it is also important to point out at least 2 additional issues:

(1) Differing nosological and etiological models of CSB-related symptoms were proposed; most popular among them are sexual addiction, sexual compulsivity, and sexual impulsivity.[13,16,18,21–23] The addictive model of CSB conceptualizes it as a condition akin to substance addictions (also known as behavioral addictions), and it predicts that CSB develops because sexual behavior has a gratifying nature (ie, similar to psychoactive chemical substances), which promotes repeated, excessive engagement and preoccupation with sexual activities.[24–26] Compulsive approach depicts CSB-like symptoms as being akin to the ones in the obsessive-compulsive disorder (OCD). This model predicts that CSB development is driven by the occurrence of obsessive sexual thoughts, impulses, and images—in response to them—compulsions—in CSBD taking the form of CSBs.[27,28] Impulsive framework attributes the CSB manifestation primarily to generalized deficits in impulse control or heightened impulsivity and a habituated tendency to seek pleasure through sexual behavior. In line with this model, CSB-like symptoms have a close similarity to those of impulse control disorders.[29,30] All 3 aforementioned conceptions can accommodate DE as a feature of CSBD; however, no available studies have investigated the differential place and importance of DE in each of these models. We posit that further research is needed to better understand the interplay between DE and the clinical manifestation of CSB.

(2) Many researchers discuss the recognition of CSB-related symptoms as a disorder and pathologization of high-frequency sexual behavior more generally.[31,32] This often occurs because sexual behavior is highly individualized, influenced by both personal beliefs and social norms, and qualitative norms for sexual behaviors are hard to establish.[33–35] Also in line with this thinking, high-frequency sexual behavior can be a natural and healthy expression of high sexual desire, instead of a signal of pathological impulsivity, compulsivity, or addiction.[12]

Current screening instruments for CSB require additional field testing. As noted elsewhere, critics have reasonably concerned about producing high rates of CSB (~20%) in nonclinical samples, and many of the current measures lack sufficient testing to establish clinical use and accuracy for diagnosis.[18,36] The risk of overpathologizing high-frequency sexual behavior and labeling it as "excessive" was also one of the reasons for not including HD in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (for more information, see also a review by Montgomery-Graham[37]).

EMOTION REGULATION DIFFICULTIES AS A MECHANISM UNDERLYING CSB CO-OCCURRENCE WITH OTHER DISORDERS

The crucial place of DE in the etiology of CSB connects it with several other mental health disorders. The issue of DE underlying CSB is, in fact, one of the proposed mechanisms, responsible for high rates of comorbidity between CSB and other disorders.[13] This notion seems especially concise, as highest CSB comorbidities are observed for disorders, which have DE at their core: anxiety disorders (46–96%) and mood disorders (39–81%).[38–41] Some researchers have also stressed the similarities between CSB and OCD[42–44] and between CSB and impulse control disorders.[29,45] The possible 2-fold nature of CSB and its connections with compulsivity on one side, and impulsivity on the other, is clearly visible in the ICD-11 conceptualization of this symptom cluster.[10] In the framework adopted by ICD-11, the label "compulsivity" is present in the name of the disorder itself, signifying some degree of affinity to compulsive nature of CSB symptoms, while the unit belongs to the category of "impulse control disorders," which underlies its propinquity with impulsivity. As some researchers suggest, the presence of compulsive and impulse control disorder features in the presentation of CSB can also be directly underlined by emotion regulation problems.[10]

Given the high comorbidity often found between CSB and mood and anxiety disorders, some researchers have postulated

that CSB is better understood as a symptom of other disorders rather than characterized as a separate disorder.[46] Subsequent subsections are devoted to the nature of the relationship between CSB and mentioned comorbid disorders.

MOOD AND ANXIETY DISORDERS IN RELATION TO CSB

Comorbidity rates indicate substantial co-occurrence between CSB and mood disorders, although there is variability in the obtained indices, depending on a particular study, method of assessment, and especially the type of mood disorder.[16,40] CSB co-occurs with all major types of mood disorders: major depression,[47,48] bipolar disorder,[49,50] and dysthymic disorder.[41] A review by Schultz et al[51] showed that symptoms related to CSB are positively correlated with depressive symptoms (around $r = 0.3$), consistently across gender, age, and sexual orientation. In the study by Raymond et al,[41] among 25 participants with CSB, 96% of them manifested one of the subtypes of anxiety disorder, among which the most common were social phobia (21%) and generalized anxiety disorder (17%). In the same group, the prevalence of mood disorders was 71% (major depression in 58%, dysthymia and bipolar disorder each in 8%). Weiss[47] reported that among 220 individuals classified as "sex addicts," 28% also suffered from depression (as assessed by Beck Depression Inventory). Interestingly, Weiss[47] also showed that receiving therapy for sexual addiction lowered depressive symptoms. After reviewing relevant literature, Kowatch et al[50] reported that in youth with bipolar disorder, hypersexuality appeared in 31−45% cases of mania. In their meta-analysis, hypersexuality was the least frequent of analyzed distinct mania symptoms but still had a reliable and significant presence (Kowatch et al[50]).

Another indication of DE in CSB is difficulties associated with chronically high anxiety level experienced by a significant number of people with CSB. In previous research, patients with high level of CSB symptoms scored higher on trait anxiety measures, such as The State-Trait Anxiety Inventory - Trait questionnaire compared with healthy controls.[52,53] Zlot et al[54] showed that sexual addiction symptoms, as measured by Sexual Addiction Screening Test, were higher among participants who used online dating applications, than among those who did not use them. In addition, social anxiety, but not sensation seeking, was related to reported sexual addiction symptoms in this group. Other study showed that difficulty in forming intimate relationships (which is associated with social anxiety) is a strong, positive predictor of using cybersex (defined as watching, downloading, and trading of pornography online or using online chat rooms for sexual purposes). Cybersex can be understood as an online outlet for sexual purposes,[55] although most individuals engaging in cybersex activities do not have a history of CSB-related disorders.[56] Results of these studies show that, at least in some cases, DE, as manifested by high levels of anxiety, may be a potential driving force behind the development of CSB symptoms.

Some researchers postulate that the elevated level of anxiety may result from unresolved traumatic experiences in one's childhood,[24] and CSB plays a self-regulatory role. For example, a recent study found that individuals seeking treatment for CSB, as compared with healthy controls, had experienced more traumatic event in early life[57]; often times, this experience, mediated by tendency to internalize symptoms and high self-criticism, is related to CSB symptom severity. The authors' assertion that the role of early trauma as a risk factor for CSB development needs to be further investigated.[57]

OCD does not appear to co-occur with CSB as often as mood or anxiety disorders, nonetheless OCD symptoms are still manifested in a noticeable subgroup of CSB patients (previous studies report 0−15% co-occurrence).[16,38,58] The model explaining the associations between OCD and CSB describes engagement in repetitive sexual behaviors as being motivated by the need to alleviate negative emotions, such as anxiety, sadness, or discomfort, which are associated with obsessive sexual thoughts, urges, and mental images. In this sense, such behaviors can be themselves described as a maladaptive way of emotion regulation or coping,[38,42,43] which is at the center of our review. As individuals with CSB usually do not meet diagnostic criteria for OCD,[59] clinical presentations of CSB lack, in most cases, the components of rigidity and does not rely on following strict rules, which is characteristic of OCD. It seems that using sexual activities as a strategy to regulate emotions (which in itself constitutes a sign of DE) is, in fact, the strongest link that connects these 2 disorders.[13,18]

CSB AND IMPULSE CONTROL DISORDERS

A decreased impulse control is observed among some individuals with CSB.[60] Impulsive behavior is often thought of as an effect of using maladaptive emotion regulation strategies, that is, evidence for DE.[29] Impulsivity is also a positive predictor of DE both in general population and clinical samples.[61,62] However, it is still unclear whether, and to what degree, CSB is associated with general deficits in impulse control, or rather with more specific deficits limited to the domain of sexuality (eg, impulsivity in the presence of sexual stimuli). Previous studies on this subject led to conflicting findings, both confirming and contradicting the assertion about broad impulse control deficits among participants high in CSB symptoms severity.[63−67] The lifetime comorbidity of impulse control disorders among patients with CSB varies between specific conditions and was reported to be 2−14% for kleptomania, 0−3% for trichotillomania, 3−13% for intermittent explosive disorder, and 0−8% for pyromania.[40,68]

Previous research results also indicate a certain role of both impulsivity and compulsivity in the etiology of CSB. A recent study conducted on a large community sample (n = 13,778) by Bőthe[69] showed that impulsivity and compulsivity were significantly, positively, but only weakly related to problematic

pornography use assessed with the Problematic Pornography Consumption Scale (obtained standardized regression indices were $\beta = 0.17$ for impulsivity and $\beta = 0.19$ for compulsivity). However, impulsivity was a stronger predictor of hypersexuality as measured by the Hypersexual Behavior Inventory ($\beta = 0.37$) than problematic pornography use. The relationship between compulsivity and hypersexual symptoms was also significant and positive, but weak ($\beta = 0.19$).[69]

CSB AND OTHER MENTAL HEALTH DISORDERS

Reid et al[70] reported that among people seeking treatment for hypersexual behavior (n = 120), the degree of HD symptoms was positively associated with Difficulty Identifying Feelings of the Toronto Alexithymia Scale (TAS-20). Moreover, the described relation remained significant, although weak, after including neuroticism as an adjusted variable.[70] A study by Engel et al[59] corroborated these results and showed that a group of subjects fulfilling diagnostic criteria for HD had elevated scores in the Toronto Alexithymia Scale, compared with healthy controls. CSB is also highly comorbid with substance use disorders (46−71%) for which DE was also observed,[71,72] although it is not yet clear to what degree shared DE can be accounted for by this co-occurrence.

To summarize this section of our review, DE is a strong candidate for one of the most important factors responsible for comorbidity between CSB and other disorders, but it is also worth noting that actual comorbidity rates between CSB and other nosologic units are hard to accurately assess based on available data. This is because previous studies have relied on small samples (eg, Black et al[38]: n = 36; Kafka and Prentky[39]: n = 26; Raymond et al[41]: n = 25) and used different methodologies with respect to disorder recognition or participant recruitment, which is one possible explanation for the relatively high variance in the comorbidity across studies.

ATTACHMENT DISORDERS AND EARLY LIFE EXPERIENCES OF ABUSE AS A CONTEXT FOR CSB−DE CONNECTION

One of the most promising conceptual frameworks for explaining relationships between DE and CSB is the attachment theory. In line with the theory developed by Bowlby,[73,74] attachment bonds are formed early in the interaction between child and a parent or a caregiver. These bonds are central to the child's social, emotional, and behavioral development, and they constitute a foundation for providing the child with basic feelings of security, comfort, and belongingness. If the relationship between the child and an attachment figure is disturbed (eg, by attachment figure being distant or unavailable), it can contribute to the forming of insecure attachment patterns. During the first relationship with a caregiver, a child is learning specific behavioral, cognitive, and emotional responses to a caregiver's behavior, which can be used in other relationships. Because of this, attachment styles tend to be persistent and maintained through life and manifest themselves in relationships such as romantic and sexual partners. This connects attachment with sexual functioning and its manifestation through psychiatric disorders. The 2 most prominent insecure attachment styles that were distinguished are anxious attachment or avoidant attachment styles.[74,75]

Anxious attachment can be formed as a consequence of relation with a caregiver, who is unreliable or inconsistent when responding to a child's behavior. Anxiously attached individuals are prone to experience a higher amount of nervousness and sense of unworthiness in a relationship context, chronic feelings of anxiousness about their relationships, and concentrate on signals of rejection and are less resilient in the face of negative events in relationships. They have troubles tolerating ambiguity in relationship context and can require higher commitment from their partner and be more focused on detecting signals of lack of such commitment.[75−77] In contrast, avoidant attachment is more often formed in response to distant, unavailable, or consistently rejecting attachment figure. Individuals who are situated high on the dimension of avoidant attachment are prone to exhibit avoidance of closeness in relationships and high preference for self-reliance. They are also characterized by frequent disengagement in situations of close relationships and experience uneasiness or discomfort when depending on significant others.[76−78] Although childhood attachment styles are difficult to measure in adults, they are often manifested in personal and romantic relationships—in adult life—and are often measured in this domain.[75]

Previous research lends significant support to the hypothesized relationships between attachment, DE, and health symptoms. Estévez et al[79] reported that both poor emotion regulation and insecure attachment were related to addiction symptoms. DE was predictive of both substance use disorders (alcohol and drug abuse) and behavioral addictions (gambling addiction, video game addiction, and problematic internet use), while attachment predicted scores on the measures of behavioral addictions (enlisted above), but not substance use disorders. Although the latter research did not include CSB, both theoretical and empirical works indicate that CSB may be rooted in aberrations in the attachment bond between the child and a caregiver.[80] In agreement with this notion, prior works have provided preliminary evidence that attachment insecurity is a positive predictor of CSB. For example, Weinstein et al[81] reported that among 104 individuals, both attachment avoidance ($r = 0.39$; $P < .01$) and attachment anxiety ($r = 0.46$; $P < .01$) were positively associated with sexual compulsivity symptoms.

Insecure attachment can also be related to early life experiences of abuse[82−84] which seems to be also more prevalent among individuals high in CSB symptoms and may constitute an important factor in CSB development.[80,85−88] Laaser and Carnes[89] estimated that between 74% and 97% of individuals

manifesting CSB experienced some form of childhood abuse. Several other researchers confirmed the positive relationship between CSB and early life experiences of abuse and stressors and proposed that CSB arises as a form of regulatory behavior or coping with those stressors and associated negative emotions.[90–96] However, it is worth noting that some findings do not show elevated rates of child abuse among individuals manifesting CSB symptoms.[97]

To summarize, the emerging model can be conceptualized as follows: early experiences of child abuse and disruption in the parent-child relationship can result in an attachment insecurity, which in turn, contributes to DE or using ineffective strategies of emotion regulation (activated, at least partially, to deal with stressful early-life events) and, this might result in higher levels of CSB symptoms (see: Katehakis[98]). Furthermore, although the model can be preliminarily tested based on results of a cross-sectional study, further longitudinal-type research is needed for testing these associations.

CSB AND EMOTION REGULATION ABILITIES

Unfortunately, little research is available for directly assessing DE among CSB patients. For example, Hashemi et al[99] found that in the sample of substance addicts (n = 285), DE as operationalized by Gratz and Roemer,[3] Difficulties in Emotion Regulation Scale, was significantly connected to hypersexual behavior symptoms (assessed with the use of the Hypersexual Behavior Inventory [HBI], $r = 0.44$; effect remained significant after adjusting for psychological well-being and socioeconomic status).[99] Concurrently, in the research conducted by Pachankis et al[100] on the group of highly sexually active gay and bisexual men (prescreened for having at least 9 different male sexual partners in the last 90 days and at least 2 in the last 30 days), DE was positively related to the Hypersexual Disorder Screening Inventory score ($r = 0.40$) and—to some degree—Sexual Inhibition/Excitation questionnaire ($r = 0.14$ for Sexual Excitation subscale, $r = 0.26$ for Sexual Inhibition I subscale, but not significantly associated with Sexual Inhibition II subscale). It is worth noting that the sample was recruited from the general population and was not a clinical or treatment seeking sample meeting diagnostic criteria for CSB or HD criteria.[100] In another study, college students who scored above the diagnostic cutoff score for sexual addiction as measured by Sexual Addiction Screening Test-Revised (relatively high percentage of all students—16.9%) differed from other students in terms of their lower acceptance of emotions, troubles engaging in goal-directed behavior when upset, and limited access to emotional regulation strategies under negative affect.[101] Another research based on Gratz and Roemer[3] operationalization of DE showed that different disorders can have distinct DE profiles,[102] although none of the previous studies compared the CSB dysregulation profile with other disorders. Comparing the profile of DE among various groups of patients with CSB, and juxtaposing CSB with other related disorders, is an important area of study for future research.

Currently, the most influential model of emotional regulation is the process model proposed by Gross.[2,103] Previous research stemming from this model focused mostly on 2 emotion regulation strategies: cognitive reappraisal and expressive suppression. Suppression is based on a direct, cognitive, or physical inhibition of emotional response itself. In contrast, reappraisal affects the emotional response in an indirect manner and is often initiated before emotion has arisen. Reappraisal requires a reinterpretation of a stimulus or situation meaning (eg, finding a positive side to negative events) or relies on changing the perspective of a subject who experiences emotion (eg, taking perspective of a scientist, who looks at emotional events analytically, with a cool eye).[104] Previous research showed that frequent reappraisal use, along with seldom use of suppression, may be most adaptive in terms of prevention of development of psychopathological symptoms.[105] Moreover, research conducted by Petit et al[106] showed that alcohol-dependent patients seeking treatment differed from the those in the control group in terms of the frequency of suppression and reappraisal use. Treatment seekers used reappraisal less and suppression more frequently than the control subjects. In addition, the length of rehabilitation was positively related with reappraisal use, and higher use of suppression predicted higher craving.[106] Although there is much less research on emotion regulation strategies in people with CSB, in a recent study by Engel et al[59] showed that subjects with clinical level of CSB-related symptoms used reappraisal strategy less often than healthy controls, with no significant difference noted for suppression. In addition, they found that CSB subjects had higher levels of maladaptive emotion regulation strategies, but there was no significant difference found for adaptive emotion regulation strategies (as measured by FEEL-E; Fragebogen zur Erhebung der Emotionsregulation bei Erwachsenen) between groups. Future research should continue to investigate the role of particular emotion regulation strategies in predicting CSB symptom severity in clinical and nonclinical populations.[59]

OTHER INDICATORS OF DE: NEUROTICISM, COPING, AND EMOTIONAL INTELLIGENCE

Previous work also linked CSB to high neuroticism, which is a prototypical trait encapsulating DE on the level of personality, and also to low levels of agreeableness, which may indicate DE in interpersonal relations.[70,107–109] There are also other well-established constructs, similar to DE that have received limited interest from CSB researchers, such as coping strategies and emotional intelligence (EI). A study by Gil[110] indicates that avoidant coping style is positively related to engagement in risky sexual behavior. Results obtained by Reid, Harper, and Anderson[111] found that avoidance may be the coping strategy of choice among many individuals with high CSB symptom severity. In their study, compared with the control group, patients manifesting CSB coped with shame with higher levels of withdrawal and were more prone to attack self (as manifested by higher levels of contempt, harsh criticism, and anger toward the self) and

others (by externally directed anger and blaming others) as a way of coping with shame.[111]

A meta-analysis conducted by Kun and Demetrovics[112] indicated that substance addictions (smoking, alcohol use, drug use) are related to specific deficits in EI, especially to 2 of its components: (i) decoding and differentiation of emotions and (ii) regulation of emotions, which is at the center of this review. However, research on the relationship between EI and CSB, as of now, still has a status of "work undone." We also have some preliminary evidence that another DE-related construct—mindfulness—may be helpful in reducing CSB symptoms. Trait-mindfulness is understood as a predisposition to be open and attentive to one's own feelings and other internal states, without judging or appraising them. Reid et al[113] reported that the low level of mindfulness, understood as a disposition, is a stronger CSB predictor than impulsivity, prone to stress, or emotion regulation itself. Other research supported these results and showed that—in a sample of substance users—dispositional mindfulness is a negative predictor of sexual compulsivity across a variety of indicators, over and above measures of substance additions.[114] Available findings point to significant relationship between DE related constructs: neuroticism, mindfulness, and coping—with CSB symptoms. Future research should expand on these findings and further investigate the significance of aforementioned constructs for CSB.

DISTINCT EMOTIONAL PATTERNS AND EMOTION-RELATED COGNITIONS AS INDICATIVE OF DE IN CSB

Previous research showed that patients high in CSB symptoms have low levels of self-forgiveness and self-compassion,[115,116] high levels of self-hatred[117] and elevated levels of experienced shame and guilt.[80,111,118] Reid[119] showed that compared with a control group, men who sought treatment for hypersexual disorder differed most strongly on the level of self-hostility dimension (which encompasses emotions like shame).

PSYCHOPHARMACOLOGY OF EMOTIONAL DYSREGULATION AND CSB

Pharmacological approaches are often used to treat mental disorders that are related to DE (eg, depressive and bipolar disorders, anxiety disorders). For some disorders, pharmacotherapy represents a first-line treatment (eg, severe depression, acute mania), while for others, it is considered as a part of a combination treatment together with psychotherapy.[120–123] Previous reviews have pointed methodological limitations of available research data (small samples, mainly restricted to heterosexual, Caucasian men, inconsistent inclusion criteria, less-reliable outcome measures etc.) that limit implementation of different pharmacotherapies to the treatment of CSB.[124,125] As of now, the evidence-based data on CSB pharmacological treatments are limited, and no widely accepted protocols or clinical guidelines are available for prescribers. However, different pharmacological options ("off-label") are proposed to patients with CSB as reflected by a number of case reports published in the scientific literature. Pharmacotherapy of patients with CSB is commonly described as an adjunct treatment to different psychological interventions.[126] There are 2 major targets of such medications—hormones and neurotransmitters. While the first, mainly based on antiandrogens (aimed to decrease sexual drive and urges; used most commonly in sexual offenders or severe CSB cases) and not directly related to emotional regulation, is out of the scope of this review. The second approach will be thoroughly discussed in the following section.

If DE is a common feature in CSB, then medications used for the improvement of control over emotions, namely, antidepressants, anxiolytics, or mood stabilizers, might be considered as an optional intervention or an addition to psychotherapy. Indeed, one of the crucial concepts of pharmacological treatment in CSB is to improve the emotional regulation (mood stabilization, anxiety, and impulsivity reduction) and, as a consequence, reduce the sexual self-regulation and sexually acting out. Medications are sometimes used to lessen the "withdrawal" symptoms, namely, the negative mood states that appear when stopping engaging in problematic sexual activities such as pornography consumption, masturbation, impulsive sexual contacts, etc. By stabilizing emotional regulation, patients may also be more prone to psychotherapeutic interventions. However, good quality, evidence-based data are needed to confirm these assertions.

Individuals with CSB commonly present with clinical dimensions such as anxiety, depressiveness, obsessiveness, and compulsivity that are found to be related with serotonin dysregulation. Poor serotonergic regulation is considered as a central neurobiological correlate of affective instability and impulsivity and has been shown to be associated with low prefrontal serotonergic transmission in borderline and other impulsive personality disorders. Therefore, antidepressants with a serotonergic mechanism (namely selective serotonin reuptake inhibitors [SSRIs], monoamine oxidase inhibitors, and tricyclic antidepressants) have been used to decrease impulsive behaviors.[127] Increased levels of serotonin in the hypothalamus were related to inhibited sexual motivation and the testosterone signal, while increased levels of serotonin in the prefrontal cortex enhanced emotional resilience and impulse control.[128] An experimental, off-label use of medications that increase serotoninergic activity (mainly SSRIs) in hypersexual patients is reported in several case reports and case series. Fluoxetine in dosages 20–40 mg was found to improve mood and reduce inappropriate sexual behavior in individuals diagnosed with sexual addiction.[129] An open trial of sertraline (25–250 mg daily) was studied in 24 men including 2 subgroups: 13 individuals with paraphilia and 11 individuals diagnosed with paraphilia-related disorders (compulsive masturbation, ego dystonic promiscuity, problematic pornography or phone sex use, ego dystonic dependence on

sexual "accessories" to maintain sexual arousal, and "severe sexual desire incompatibility"). In the second subgroup, 6 men have shown clinical improvement when treated with sertraline, and one when switched to fluoxetine.[130] Sertraline and paroxetine were also successfully applied in 2 cases diagnosed as sexually addicted (1 woman, 1 man) as reported by Elmore, [131] leading to diminution of sexual addiction symptoms as well as restoring "normal" levels of sexual desire, arousal, and sexual activity. Finally, there was one randomized controlled trial in which citalopram in dosages ranging from 20 to 60 mg was compared with placebo, and citalopram was shown to reduce sexual desire, frequency of masturbation, and pornography use in 28 homosexual men with CSB symptoms.[132] A reduction of CSB symptoms was also seen in patients treated with tricyclic antidepressant clomipramine alone,[133] clomipramine combined with valproic acid (mood stabilizer and antiepileptic amplifying the inhibitory action of gamma-aminobutyric acid),[134] and nefazodone (a serotonin antagonist and reuptake inhibitor [SARI]).[135]

A more complex effect of SSRI treatment on sexual behavior in 3 patients seeking help because of problematic pornography use coupled with compulsive masturbation was described by Gola and Potenza.[136] When 20 mg of paroxetine was added to a cognitive-behavioral therapy, initially, a decrease in pornography consumption was observed in all 3 cases accompanied by significant decrease in anxiety levels. However, within 12−14 weeks of pharmacotherapy, new sexual behaviors emerged, namely, first-time paid sexual relations or extramarital affair. It was hypothesized by the authors that paroxetine may have helped to decrease amygdala-related reactivity, resulting in decreased anxiety and subsequently decreased compulsive pornography use. However, at some point, without targeting craving or reward-related processes, new CSBs may have emerged as a result of diminished anxiety.[136]

As stimulation of a brain reward system plays an important role in emotional regulation and CSB, medications that influence the brain reward circuits were also experimentally used in the treatment of hypersexual patients, especially, the opioid antagonist naltrexone (indicated to provide blockade of the pharmacologic effects of exogenously administered opioids and in the treatment of alcohol dependence to support abstinence) added to SSRI or other psychotropic medications[137−140] or used alone[141] was found effective in reducing CSB as presented in several case reports. The proposed mechanism is the inhibition of dopamine release in the mesolimbic area in response to incentive (also sexual) stimuli, thereby suppressing a euphorically compulsive behavior.

Finally, topiramate, an antiepileptic and multipotential drug (used off-label for instance in bipolar disorder, migraine, binge eating disorder, and substance addictions) was also associated with reduction in impulsivity and related CSB symptoms.[142,143] As an amino-3-hydroxy-5-methyl-isoxazole propionate/kainate antagonist, it is thought to act on a pathway underlying conditioned behaviors with a potential for the treatment of behavioral disorders that are associated with environmental cues.[143]

All the mentioned medications have a potential to regulate emotional processes within the brain circuits. The impact on mood regulation, anxiety, impulsivity, and cognitive and behavioral control over sexual cues and in response to erotic stimuli seem to be the key proposed targets for medical interventions in CSB. Their clinical efficacy in improving emotional regulation and reducing CSB symptoms in treatment-seeking individuals should be evaluated through well powered, randomized, double-blind, placebo-controlled trials. Because no clinical guidelines regarding specific indications and dosing are available, any medication implemented for the treatment of CSB should be used with caution, preceded with a careful and individual risk-benefit assessment by a qualified provider.

PSYCHOTHERAPY OF CSB AND DE

The state of the art of CSB treatment research is still much in its infancy (for review, see Efrati and Gola[144]) because of the lack of official diagnostic criteria and clarity about CSB conceptualization (as an addiction, compulsion, impulse control disorder, or high sexual drive). All studies conducted before 2018 were using different diagnostic and inclusion criteria that make their results hardly comparable. Fortunately, since inclusion of CSB Disorder in ICD-11,[10] researchers now have a diagnostic framework to build upon for future research studies. Interestingly, in accordance with the current ICD-11 criteria, DE is not considered as a key symptom of CSBD.[10] Nevertheless, many studies show DE-related effects,[145−148] and clinicians often try to address DE issues in their work as it seems to be an important underlying factor of CSB. Future research examining the function of DE in the expression and maintenance of CSBD is needed.

Keeping in mind that there are no well validated standardized methods of treatment, it is worth remembering that DE may have different sources and it seems like in case of CSB, one of them is moral incongruence between one's sexual behavior and beliefs about sexuality.[33−35,149] Such beliefs (both patient's and therapist's) are also related to the goals of the treatment.

The most radical therapists define the goal of CSB treatment as sexual abstinence with the exception of marital intercourse (such an approach is popular in the Sexaholics Anonymous [SA] 12-step program).[130] On the other hand, most liberal therapists address the reduction of negative consequences and focus on the development of strategies of controlled pornography use and masturbation or safe habits of interpersonal sexual activities. Therapists representing harm reduction approach are usually far from defining CSB as an addictive behavior, but rather as an expression of high sexual drive act out in an impulse manner.[131] However, many clinicians working with CSB individuals

represent a middle-of-the-road approach, admitting the potential addictive nature of certain sexual behaviors and recognizing the importance of natural sexual drive. Thus, the goal of treatment is often to (i) disentangle which sexual behaviors (and when) serve sexual needs and which serve different needs (eg, emotional regulation) or reflect impulsive tendencies and (ii) tackling the mechanisms of the latter to decrease CSB while reinforcing healthy behaviors. Differences in opinions among therapists regarding the need for initial sexual abstinence during treatment depend on their individual views. Thus, the alignment of therapist's values, attitudes, and perspectives on sexual behavior with patient's understanding of his or her behavior when determining client treatment goals (for more details, see the study by Efrati and Gola[144]).

To date, there are no systematic clinical trials with control groups investigating efficacy of CSB treatment. However, some treatment modalities have been tested in open label studies on small groups, and several recent reviews have examined theories of therapeutic methods and approaches to CSB.[150–153] Most of the treatment modalities address emotional regulation, but they do it from a different angle. This will be briefly elaborated within the few next paragraphs.

One among most popular modalities is the cognitive behavioral therapy (CBT). One study examining CBT group program (n = 10 men with CSB) revealed a significant decrease of symptoms 6-month after treatment.[154] The decrease in the number of problematic sexual behaviors during the course of therapy was also observed, suggesting that CBT may result in positive effects within the first 12 week of treatment. One of the key components of CBT is modification of dysfunctional beliefs which mediate reactions for certain situations causing specific emotional states. For example, if an individual with CSB has a belief that any kind of sexual behavior is a relapse cancelling his previous effort of abstaining from problematic behaviors, then facing such a relapse carries a high risk of shame, mood decrease, and feeling of hopelessness, which may result in long-term binge behavior as a temporary coping strategy for these emotions. The same situation could look completely different if the mentioned individual would have a belief that recovery from CSB is a longitudinal process and each day without problematic behaviors is a valuable experience and relapses may happen as a part of the healing process. In such situation, similar relapse may cause much less difficult emotions, and it will be easier to choose more adaptive way to cope with them, for example, by social distraction or other forms of constructive behaviors.

Another promising treatment modality is the cognitive analytic therapy (CAT)——3-phase, time-limited eclectic approach with clearly established and delineated assessment and treatment methods.[155] In accordance with the results presented by Ryle et al,[156] CAT can be particularly useful in cases where symptoms of CSB affect abilities to create intimate relationships. The researchers reported reduced obsessions and improved interpersonal connections between treated CSB individuals and their partners after the CAT. In CAT, participants develop interpersonal skills which may help them to cope with difficult emotion through open dialog with spouse or other significant people.[156]

Reid et al[113] reported mindfulness-based approach as helpful in improving affect regulation, stress coping, and increasing tolerance for desires to act on maladaptive sexual urges and impulses among patients with CSB. Research exploring the applications of mindfulness in relation to sexual behavior has explicitly focused on improving sexual dysfunction and/or enjoyment.[157,158] Other studies reported using mindfulness as a therapeutic intervention for treating sex addiction by a meditation awareness training.[159] More recent works also support the potential effectiveness of mindfulness approach.[160] In mindfulness-based approaches, individuals learn how to identify their internal states such as difficult emotions and acknowledge them as they are and let their feeling pass. There are several techniques allowing development of such metacognitive skills that need to be trained and reinforced with practice for effectiveness. There are also well historically established systems of CSB treatment grounded in the 12-step tradition. One of such systems was developed by Patrick Carnes, PhD, and it is well structuralized and described in his books.[24] Unfortunately, despite of years of its existence, there are no publications demonstrating its efficiency compared with any other treatment method or control condition. All 12-step–based programs teach similar methods of emotional regulation strategies. Fellows of these programs can share their emotions with others during the meetings; they usually also contact with others by phone on daily basis and work with more advanced fellow called "sponsor" on 12 steps. Some of these steps provide interesting emotional regulation strategies such as daily diaries, list of character defects generating repetitive difficult situations and related emotions (which is similar to the tables used in CBT treatment) or development of relation with some kind of higher power, who can take care of situations which are beyond control of certain individual, which may reduce significant amount of stress.

The most popular method of CSB management is self-help based on 12 steps and 12 traditions of Alcoholics Anonymous.[144,161] In these programs, individual beliefs on sexuality and goals of the treatment become visible. Unlike Alcoholics Anonymous, there are at least 3 large 12-step fellowships dedicated for CSB individuals. SA is conservative—it views sexual relations as taking place only within heterosexual marriage and does not accept people who engage in same sex behavior. Owing to such sharp definition of sexual abstinence, one of the main source of difficult emotion can be any type of believes and behaviors different from that shared by SA. Sex Addicts Anonymous (SAA) has broadened their scope, and members—together with the group and the sponsor—can define their "sexual abstinence." SAA is also open to same-sex relations and to

exclusive nonmarital relationships, so there should be less emotional discomfort related to certain types of sexual behaviors one acknowledge as nonproblematic. Sex and Love Addicts Anonymous (SLAA), in which women are more represented than in SA and SAA, also deals with instant crushes with fantasies about romance, romantic relationship, and a sexual relationship. According to SLAA, DE may also be related to the anxiety and personality problems, as it was shown that among women as compared with men, CSB was more strongly associated with social phobia, alcohol abuse, and paranoid, schizotypal, antisocial, borderline, narcissistic, avoidant, and obsessive-compulsive personality disorders.[162] All groups (SA, SAA, SLAA), view addiction as an advanced-stage chronic disease, a stage at which individuals are no longer in control of their life.[163] The disease/addiction is perceived as external to the person—it is incurable and can lead to insanity but can be temporarily halted by total abstinence from using the harmful substance[164] or—in the case of CSB—abstaining from the harmful behavior. There are currently studies in progress investigating the efficacy of 12-step programs for CSB treatment, and some therapists have adopted many of the 12-step principles in their treatment methods.[144]

CONCLUSIONS

The present study reviewed the literature to examine the associations between CSB and DE. Overall, we found that DE represents a core symptom of CSBD and other psychiatric disorders and may be a predisposing factor to the development and maintenance of CSBD. Given prior evidence that DE is implicated with other anxiety and mood disorders, future research is needed to explore treatment approaches aimed at addressing DE and CSBD concurrently. Additional research is needed to clarify the precise nature of DE in the etiology of CSBD. Given the lack of robust data available, additional research is needed to explore what role DE plays in the development and testing of pharmacotherapy and psychotherapy approaches for CSBD. Our findings suggest that DE remains an important area of study as it pertains to CSBD, and further research is needed to fully examine its clinical relevance in the treatment of CSBD in clinical populations.

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REFERENCES

1. Thompson RA. Emotion regulation: A theme in search of definition. **Monogr Soc Res Child Dev 1994;59:25-52.**
2. Gross JJ. Emotion regulation: Affective, cognitive, and social consequences. **Psychophysiol 2002;39:281-291.**
3. Gratz KL, Roemer L. Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. **J Psychopathol Behav Assess 2004;26:41-54.**
4. Berking M, Wupperman P. Emotion regulation and mental health: Recent findings, current challenges, and future directions. **Curr Opin Psychiatr 2012;25:128-134.**
5. Gross JJ, Jazaieri H. Emotion, emotion regulation, and psychopathology: An affective science perspective. **Clin Psych Sci 2014;2:387-401.**
6. Kring AM. Emotion disturbances as transdiagnostic processes in psychopathology. In: Lewis M, Haviland-Jones JM, Barrett LF, eds. Handbook of emotion. 3rd edtion. New York: Guilford Press; 2008. p. 691-705.
7. Sheppes G, Suri G, Gross JJ. Emotion regulation and psychopathology. **Ann Rev Clin Psych 2015;11:379-405.**
8. Mikolajczak M, Avalosse H, Vancorenland S, et al. A nationally representative study of emotional competence and health. **Emotion 2015;15:653-667.**
9. Kraus SW, Krueger RB, Briken P, et al. Compulsive sexual behaviour disorder in the ICD-11. **World Psychiatr 2018;17:109-110.**

10. World Health Organization. ICD-11 for mortality and morbidity statistics. Available at: https://icd.who.int/browse11/l-m/en. Accessed April 14, 2019.
11. Goodman A. Sexual addiction: The new frontier. **The Counselor 1997;16:17-26.**
12. Prause N. Evaluate models of high-frequency sexual behaviors already. **Arch Sex Behav 2017;46:2269-2274.**
13. Bancroft J, Vukadinovic Z. Sexual addiction, sexual compulsivity, sexual impulsivity, or what? Toward a theoretical model. **J Sex Res 2004;41:225-234.**
14. Carnes P. Don't call it love: Recovery from sexual addiction. New York, NY: Bantam Books; 1991.
15. Grubbs JB, Perry SL, Wilt JA, et al. Pornography problems due to moral incongruence: An integrative model with a systematic review and meta-analysis. **Arch Sex Behav 2018; 48:397-415.**
16. Kafka MP. Hypersexual disorder: A proposed diagnosis for DSM-V. **Arch Sex Behav 2010;39:377-400.**
17. Reid RC, Garos S, Carpenter BN. Reliability, validity, and psychometric development of the Hypersexual Behavior Inventory in an outpatient sample of men. **Sex Addict Compuls 2011;18:30-51.**
18. Walton MT, Cantor JM, Bhullar N, et al. Hypersexuality: A critical review and introduction to the "sexhavior cycle". **Arch Sex Behav 2017;46:2231-2251.**
19. Bancroft J, Janssen E, Strong D, et al. The relation between mood and sexuality in heterosexual men. **Arch Sex Behav 2003;32:217-230.**
20. Bancroft J, Janssen E, Strong D, et al. Sexual risk-taking in gay men: The relevance of sexual arousal, mood, and sensation seeking. **Arch Sex Behav 2003;32:231-242.**
21. Kowalewska E, Grubbs JB, Potenza MN, et al. Neurocognitive mechanisms in compulsive sexual behavior disorder. **Curr Sex Health Rep 2018;10:244-264.**
22. Stein DJ. Classifying hypersexual disorders: Compulsive, impulsive, and addictive models. **Psychiat Clin N Am 2008; 31:587-591.**
23. Wéry A, Billieux J. Problematic cybersex: Conceptualization, assessment, and treatment. **Addict Behav 2017;64:238-246.**
24. Carnes P. Out of the shadows: Understanding sexual addiction. Center City, MN: Hazelden Publishing; 2001.
25. Kraus SW, Voon V, Potenza MN. Should compulsive sexual behavior be considered an addiction? **Addiction 2016; 111:2097-2106.**
26. Potenza MN, Gola M, Voon V, et al. Is excessive sexual behaviour an addictive disorder? **Lancet Psychiat 2017; 4:663-664.**
27. Coleman E. Compulsive sexual behavior: New concepts and treatments. **J Psych Hum Sex 1991;4:37-52.**
28. Mick TM, Hollander E. Impulsive-compulsive sexual behavior. **CNS Spectrums 2006;11:944-955.**
29. Barth RJ, Kinder BN. The mislabeling of sexual impulsivity. **J Sex Marit Therap 1987;13:15-23.**
30. Giugliano JR. Sexual impulsivity, compulsivity or dependence: An investigative inquiry. **Sex Addict Compuls 2008;15:139-157.**
31. Klein M. Sex addiction: A dangerous clinical concept. **SIECUS Report 2003;31:8-11.**
32. Ley D, Prause N, Finn P. The emperor has no clothes: A review of the "pornography addiction" model. **Curr Sex Health Rep 2014;6:94-105.**
33. Gola M, Lewczuk K, Skorko M. What matters: Quantity or quality of pornography use? Psychological and behavioral factors of seeking treatment for problematic pornography use. **J Sex Med 2016;13:815-824.**
34. Grubbs JB, Perry SL. Moral incongruence and pornography use: A critical review and integration. **J Sex Res 2018; 56:29-37.**
35. Lewczuk K, Szmyd J, Skorko M, et al. Treatment seeking for problematic pornography use among women. **J Beh Addict 2017;6:445-456.**
36. Kafka MP. What happened to hypersexual disorder? **Arch Sex Behav 2014;43:1259-1261.**
37. Montgomery-Graham S. Conceptualization and assessment of hypersexual disorder: A systematic review of the literature. **Sex Med Rev 2017;5:146-162.**
38. Black DW, Kehrberg LLD, Flumerfelt DL, et al. Characteristics of 36 subjects reporting compulsive sexual behavior. **Am J Psychiatr 1997;154:243-249.**
39. Kafka MP, Prentky RA. Preliminary observations of DSM-III-R axis I comorbidity in men with paraphilias and paraphilia-related disorders. **J Clin Psychiatry 1994;55:481-487.**
40. Kuzma JM, Black DW. Epidemiology, prevalence, and natural history ofcompulsive sexual behavior. **Psychiatr Clin North Am 2008;31:603-611.**
41. Raymond NC, Coleman E, Miner MH. Psychiatric comorbidity and compulsive/impulsive traits in compulsive sexual behavior. **Compr Psychiatr 2003;44:370-380.**
42. Coleman E. Sexual compulsivity: Definition, etiology, and treatment considerations. **J Chem Depend Treat 1987;1:189-204.**
43. Coleman E. The obsessive—compulsive model for describing compulsive sexual behavior. **Am J Prev Psychiatr Neurol 1990;2:9-14.**
44. Fong TW. Understanding and managing compulsive sexual behaviors. **Psychiatr (Edgmont) 2006;3:51-58.**
45. Grant JE, Atmaca M, Fineberg NA, et al. Impulse control disorders and "behavioural addictions" in the ICD-11. **World Psychiatry 2014;13:125-127.**
46. Ley DJ. The myth of sex addiction. New York, NY: Rowman & Littlefield Publishers; 2014.
47. Weiss D. The prevalence of depression in male sex addicts residing in the United States. **Sex Addict Compuls 2004; 11:57-69.**
48. Kalra G. The depressive façade in a case of compulsive sex behavior with frottage. **Indian J Psychiatr 2013;55:183.**

49. Di Nicola M, Tedeschi D, Mazza M, et al. Behavioural addictions in bipolar disorder patients: Role of impulsivity and personality dimensions. **J Affect Disord 2010;125:82-88.**
50. Kowatch RA, Youngstrom EA, Danielyan A, et al. Review and meta-analysis of the phenomenology and clinical characteristics of mania in children and adolescents. **Bipolar Disord 2005;7:483-496.**
51. Schultz K, Hook JN, Davis DE, et al. Nonparaphilic hypersexual behavior and depressive symptoms: A meta-analytic review of the literature. **J Sex Marit Therap 2014;40:477-487.**
52. Berberovic D. Sexual compulsivity comorbidity with depression, anxiety, and substance use in students from Serbia and Bosnia and Herzegovina. **Eur J Psych 2013;9:517-530.**
53. Smaś-Myszczyszyn M, Lew-Starowicz M. Obsessive-compulsive disorder in hypersexual patients. **J Sex Med 2018;7(Suppl 3):S176.**
54. Zlot Y, Goldstein M, Cohen K, et al. Online dating is associated with sex addiction and social anxiety. **J Behav Addict 2018;7:821-826.**
55. Weinstein AM, Zolek R, Babkin A, et al. Factors predicting cybersex use and difficulties in forming intimate relationships among male and female users of cybersex. **Frontiers in Psychiatr 2015;6:54.**
56. Young K. Are you addicted to cybersex? Bradford, PA: Center for Internet Addiction Recovery; 2001.
57. Efrati Y, Gola M. The effect of early life trauma on compulsive sexual behavior among members of a 12-step group. **J Sex Med 2019;16:803-811.**
58. Shapira NA, Goldsmith TD, Keck PE Jr, et al. Psychiatric features of individuals with problematic internet use. **J Affect Disord 2000;57:267-272.**
59. Engel J, Veit M, Sinke C, et al. Same but different: A clinical characterization of men with hypersexual disorder in the sex@ brain study. **J Clin Med 2019;8:157.**
60. Reid RC, Berlin HA, Kingston DA. Sexual impulsivity in hypersexual men. **Curr Behav Neurosci Rep 2015;2:1-8.**
61. Schreiber LR, Grant JE, Odlaug BL. Emotion regulation and impulsivity in young adults. **J Psychiatr Res 2012;46:651-658.**
62. Weiss NH, Tull MT, Viana AG, et al. Impulsive behaviors as an emotion regulation strategy: Examining associations between PTSD, emotion dysregulation, and impulsive behaviors among substance dependent inpatients. **J Anxiety Disord 2012;26:453-458.**
63. Kowalewska E, Sadowski J, Wordecha M, et al. How impulsivity is related to problematic pornography use? Longitudinal study among participants of 12-steps sexual addiction treatment program. **J Behav Addict 2017;6:26.**
64. Miner MH, Raymond N, Mueller BA, et al. Preliminary investigation of the impulsive and neuroanatomical characteristics of compulsive sexual behavior. **Psychiatr Res 2009;174:146-151.**
65. Mulhauser KR, Struthers WM, Hook JN, et al. Performance on the Iowa Gambling Task in a sample of hypersexual men. **Sex Addict Compuls 2014;21:170-183.**
66. Reid RC, Garos S, Carpenter BN, et al. A surprising finding related to executive control in a patient sample of hypersexual men. **J Sex Med 2011;8:2227-2236.**
67. Schiebener J, Laier C, Brand M. Getting stuck with pornography? Overuse or neglect of cybersex cues in a multitasking situation is related to symptoms of cybersex addiction. **J Behav Addict 2015;4:14-21.**
68. Kraus SW, Potenza MN, Martino S, et al. Examining the psychometric properties of the Yale—Brown Obsessive—Compulsive Scale in a sample of compulsive pornography users. **Compr Psychiat 2015;59:117-122.**
69. Bőthe B, Tóth-Király I, Potenza MN, et al. Revisiting the role of impulsivity and compulsivity in problematic sexual behaviors. **J Sex Res 2018;56:1-14.**
70. Reid RC, Carpenter BN, Spackman M, et al. Alexithymia, emotional instability, and vulnerability to stress proneness in patients seeking help for hypersexual behavior. **J Sex Marit Ther 2008;34:133-149.**
71. Garland EL, Bell S, Atchley R, et al. Emotion dysregulation in addiction. In: Crowell S, Beauchaine T, eds. Oxford handbook of emotion dysregulation. New York: Oxford University Press; 2018.
72. Kober H, Bolling D. Emotion regulation in substance use disorders. In: Gross J, ed. Handbook of emotion regulation. New York: Guilford Publications; 2014. p. 428-446.
73. Bowlby J. The making and breaking of affectional bonds. I. Aetiology and psychopathology in the light of attachment theory. An expanded version of the Fiftieth Maudsley Lecture, delivered before the Royal College of Psychiatrists, 19 November 1976. **Brit J Psychiatr 1977;130:201-210.**
74. Bowlby J. Attachment and loss: Retrospect and prospect. **Am J Ortho Psychiatr 1982;52:664-678.**
75. Fraley RC, Shaver PR. Adult romantic attachment: Theoretical developments, emerging controversies, and unanswered questions. **Rev Gen Psych 2000;4:132-154.**
76. Feeney J, Noller P. SAGE series on close relationships: Adult attachment. Thousand Oaks: SAGE Publications, Inc.; 1996.
77. Li T, Chan DKS. How anxious and avoidant attachment affect romantic relationship quality differently: A meta-analytic review. **Eur J Soc Psych 2012;42:406-419.**
78. Edelstein RS, Shaver PR. Avoidant attachment: Exploration of an oxymoron. In: Mashek DJ, Aron AP, eds. Handbook of closeness and intimacy. Mahwah: Lawrence Erlbaum Associates Publishers; 2004. p. 397-412.
79. Estévez A, Jauregui P, Sanchez-Marcos I, et al. Attachment and emotion regulation in substance addictions and behavioral addictions. **J Behav Addict 2017;6:534-544.**
80. Adams KM, Donald W, Robinson KDW. Shame reduction, affect regulation, and sexual boundary development: Essential building blocks of sexual addiction treatment. **Sex Addict Compuls 2001;8:23-44.**

81. Weinstein A, Katz L, Eberhardt H, et al. Sexual compulsion—Relationship with sex, attachment and sexual orientation. **J Behav Addict 2015;4:22-26.**
82. Crittenden PM, Ainsworth MD. Child maltreatment and attachment theory. London, England: Cambridge University Press; 1989. p. 432-463.
83. Styron T, Janoff-Bulman R. Childhood attachment and abuse: Long-term effects on adult attachment, depression, and conflict resolution. **Child Abuse Negl 1997;21:1015-1023.**
84. Hildyard KL, Wolfe DA. Child neglect: Developmental issues and outcomes. **Child Abuse Negl 2002;26:679-695.**
85. Alexander PC. Application of attachment theory to the study of sexual abuse. **J Consult Clin Psych 1992;60:185.**
86. Creeden K. The neurodevelopmental impact of early trauma and insecure attachment: Rethinking our understanding and treatment of sexual behavior problems. **Sex Addict Compuls 2004;11:223-247.**
87. Schwartz MF. Sexual compulsivity as post-traumatic stress disorder: Treatment perspectives. **Psychiatr Ann 1992; 22:333-338.**
88. Schwartz MF. Developmental psychopathological perspectives on sexually compulsive behavior. **Psychiatr Clin North Am 2008;31:567-586.**
89. Laaser M, Carnes P. Sexual addiction: A clinical update. **Christ Couns Today 2008;15:44-47.**
90. Perera B, Reece M, Monahan P, et al. Childhood characteristics and personal dispositions to sexually compulsive behavior among young adults. **Sex Addict Compuls 2009;16:131-145.**
91. Opitz D, Tsytsarev S, Froh J. Women's sexual addiction and family dynamics,depression and substance abuse. **Sex Addict Compuls 2009;16:324-340.**
92. Edger K. The lived experiences of Evangelical Christian men who self-identify as sexual addicts: An existential-phenomenological study. **Sex Addict Compuls 2009; 16:289-323.**
93. Timberlake D, Meyer D, Hitchings S, et al. Sexually compulsive behaviors: Implications for attachment, early life stressors, and religiosity. **Sex Addict Compuls 2016;23:361-373.**
94. Zapf J, Greiner J, Carroll J. Attachment style and male sex addiction. **Sex Addict Compuls 2008;15:158-175.**
95. Gilliland R, Blue Star J, Hansen B, et al. Relationshipattachment styles in a sample of hypersexual patients. **J Sex Marit Ther 2015;41:581-592.**
96. Vaillancourt-Morel MP, Godbout N, Labadie C, et al. Avoidant and compulsive sexual behaviors in male and female survivors of childhood sexual abuse. **Child Abuse Negl 2015; 40:48-59.**
97. McPherson S, Clayton S, Wood H, et al. The role of childhood experiences in the development of sexual compulsivity. **Sex Addict Compuls 2013;20:259-278.**
98. Katehakis A. Affective neuroscience and the treatment of sexual addiction. **Sex Addict Compuls 2009;16:1-31.**
99. Hashemi SG, Shalchi B, Yaghoubi H. Difficulties in emotion regulation, psychological well-being, and hypersexuality in patients with substance use disorder in Iran. **Iranian J Psychiatr Behav Sci 2018;12:e10449.**
100. Pachankis JE, Rendina HJ, Ventuneac A, et al. The role of maladaptive cognitions in hypersexuality among highly sexually active gay and bisexual men. **Arch Sex Behav 2014; 43:669-683.**
101. Cashwell CS, Giordano AL, King K, et al. Emotion regulation and sex addiction among college students. **Int J Ment Health Addict 2017;15:16-27.**
102. Becerra R, Cruise K, Murray G, et al. Emotion regulation in bipolar disorder: Are emotion regulation abilities less compromised in euthymic bipolar disorder than unipolar depressive or anxiety disorders? **Open J Psychiatr 2013;3:1-7.**
103. Gross JJ. Emotion regulation: Current status and future prospects. **Psych Inq 2015;26:1-26.**
104. Gross JJ, John OP. Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. **J Pers Soc Psych 2003;85:348-362.**
105. Eftekhari A, Zoellner LA, Vigil SA. Patterns of emotion regulation and psychopathology. **Anxiety Stress Coping 2009;22:571-586.**
106. Petit G, Luminet O, Maurage F, et al. Emotion regulation in alcohol dependence. **Alcohol Clin Exp Res 2015;39:2471-2479.**
107. Pinto J, Carvalho J, Nobre PJ. The relationship between the FFM personality traits, state psychopathology, and sexual compulsivity in a sample of male college students. **J Sex Med 2013;10:1773-1782.**
108. Reid RC, Stein JA, Carpenter BN. Understanding the roles of shame and neuroticism in a patient sample of hypersexual men. **J Nerv Ment Dis 2011;199:263-267.**
109. Rettenberger M, Klein V, Briken P. The relationship between hypersexual behavior, sexual excitation, sexual inhibition, and personality traits. **Arch Sex Behav 2016;45:219-233.**
110. Gil S. Personality traits and coping styles as mediators in risky sexual behavior: A comparison of male and female undergraduate students. **Soc Behav Pers Int J 2005;33:149-158.**
111. Reid RC, Harper JM, Anderson EH. Coping strategies used by hypersexual patients to defend against the painful effects of shame. **Clin Psych Psychother 2009;16:125-138.**
112. Kun B, Demetrovics Z. Emotional intelligence and addictions: a systematic review. **Subst Use Misuse 2010;45:1131-1160.**
113. Reid RC, Bramen JE, Anderson A, et al. Mindfulness, emotional dysregulation, impulsivity, and stress proneness among hypersexual patients. **J Clin Psych 2013;70:313-321.**
114. Shorey RC, Elmquist J, Wolford-Clevenger C, et al. The relationship between dispositional mindfulness, borderline personality features, and suicidal ideation in a sample of women in residential substance use treatment. **Psychiatr Res 2016; 238:122-128.**
115. Reid RC, Temko J, Moghaddam JF, et al. Shame, rumination, and self-compassion in men assessed for hypersexual disorder. **J Psychiatr Pract 2014;20:260-268.**

116. Hook JN, Farrell JE, Davis DE, et al. Self-forgiveness and hypersexual behavior. **Sex Add Compuls 2015;22:59-70.**
117. Schwartz MF, Brasted WS. Sexual addiction: Self-hatred, guilt, and passive rage contribute to this deviant behavior. **Med Asp Hum Sex 1985;19:103-107.**
118. Gilliland R, South M, Carpenter BN, et al. The roles of shame and guilt in hypersexual behavior. **Sex Addict Compuls 2011; 18:12-29.**
119. Reid RC. Differentiating emotions in a sample of men in treatment for hypersexual behavior. **J Social Work Pract Ad 2010;10:197-213.**
120. Bandelow B, Zohar J, Hollander E, et al. World Federation of Societies of Biological Psychiatry (WFSBP) guidelines for the pharmacological treatment of anxiety, obsessive-compulsive and post-traumatic stress disorders — first revision. **World J Biol Psychiatry 2008;9:248-312.**
121. Herpertz SC, Zanarini M, Schulz CS, et al. World Federation of Societies of Biological Psychiatry (WFSBP) guidelines for biological treatment of personality disorders. **World J Biol Psychiatry 2007;8:212-244.**
122. Bauer M, Pfennig A, Severus E, et al. World Federation of Societies of Biological Psychiatry (WFSBP) guidelines for biological treatment of unipolar depressive disorders, Part 1: Update 2013 on the acute and continuation treatment of unipolar depressive disorders. **World J Biol Psychiatry 2013; 14:334-385.**
123. Grunze H, Vieta E, Goodwin GM, et al. The World Federation of Societies of Biological Psychiatry (WFSBP) guidelines for the biological treatment of bipolar disorders: Update 2012 on the long-term treatment of bipolar disorder. **World J Biol Psychiatry 2013;14:154-219.**
124. Hook JN, Reid RC, Penberthy JK, et al. Methodological review of treatments for nonparaphilic hypersexual behavior. **J Sex Marital Ther 2014;40:294-308.**
125. Naficy H, Samenow CP, Fong TW. A review of pharmacological treatments for hypersexual disorder. **Sex Addict Compuls 2013;20:139-153.**
126. Hagedorn WB, Juhnke GA. Treating the sexually addicted client: Establishing a need for increased counselor awareness. **J Addict Offender Couns 2005;25:66-86.**
127. New AS, Goodman M, Triebwasser J, et al. Recent advances in the biological study of personality disorders. **Psychiatr Clin North Am 2008;31:441-461.**
128. Leeman RF, Potenza MN. A targeted review of the neurobiology and genetics of behavioural addictions: An emerging area of research. **Can J Psychiatr 2013;58:260-273.**
129. Kafka MP, Prentky R. Fluoxetine treatment of nonparaphilic sexual addictions and paraphilias in men. **J Clin Psychiatr 1992;53:351-358.**
130. Kafka MP. Sertraline pharmacotherapy for paraphilias and paraphilia-related disorders: An open trial. **Ann Clin Psychiatr 1994;6:189-195.**
131. Elmore JL. SSRI reduction of nonparaphilic sexual addiction. **CNS Spectrums 2000;11:53-56.**
132. Wainberg M, Muench F, Morgenstern J, et al. A double-blind study of citalopram versus placebo in the treatment of compulsive sexual behaviors in gay and bisexual men. **J Clin Psychiatr 2006;67:1968-1973.**
133. Azhar MZ, Varma SL. Response to clomipramine in sexual addiction. **Eur Psychiatr 1995;10:263-265.**
134. Gulsun M, Gulcat Z, Aydin H. Treatment of compulsive sexual behavior with clomipramine and valproic acid. **Clin Drug Investig 2007;27:219-223.**
135. Coleman E, Gratzer T, Nesvacil L, et al. Nefazodone and the treatment of nonparaphilic compulsive sexual behavior: A retrospective study. **J Clin Psychiatr 2000;61:282-284.**
136. Gola M, Potenza MN. Paroxetine treatment of problematic pornography use: A case series. **J Behav Addict 2016;5:529-532.**
137. Bostwick JM, Bucci JA. Internet sex addiction treated with naltrexone. **Mayo Clinic Proceedings 2008;83:226-230.**
138. Grant JE, Kim SW. A case of kleptomania and compulsive sexual behavior treated with naltrexone. **Ann Clin Psych 2001;13:229-231.**
139. Raymond NC, Grant JE, Kim SW, et al. Treatment of compulsive sexual behavior with naltrexone and serotonin reuptake inhibitors: Two case studies. **Int Clin Psychopharamacol 2002;17:201-205.**
140. Raymond NC, Grant JE, Coleman E. Augmentation with naltrexone to treat compulsive sexual behavior: A case series. **Ann Clin Psychiatr 2010;22:56-62.**
141. Kraus SW, Meshberg-Cohen S, Martino S, et al. Treatment of compulsive pornography use with naltrexone: A case report. **Am J Psychiatr 2015;172:1260-1261.**
142. Fong TW, De La Garza R, Newton TF. A case report of topiramate in the treatment of nonparaphilic sexual addiction. **J Clin Psychopharmacol 2005;25:512-514.**
143. Khazaal Y, Zullino DF. Topiramate in the treatment of compulsive sexual behavior: Case report. **BMC Psychiatr 2006;6:22-25.**
144. Efrati Y, Gola M. Treating compulsive sexual behavior. **Curr Sex Health Reports 2018;10:57-64.**
145. Reid RC, Carpenter BN, Hook JN, et al. Report of findings in a DSM-5 field trial for hypersexual disorder. **J Sex Med 2012; 9:2868-2877.**
146. Gola M, Wordecha M, Sescousse G, et al. Can pornography be addictive? An fMRI study of men seeking treatment for problematic pornography use. **Neuropsychopharmacology 2017;42:2021-2031.**
147. Wordecha M, Wilk M, Kowalewska E, et al. "Pornographic binges" as a key characteristic of males seeking treatment for compulsive sexual behaviors: Qualitative and quantitative 10-week-long diary assessment. **J Behav Addict 2018;7:433-444.**
148. 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.**

149. Grubbs JB, Wilt JA, Exline JJ, et al. Moral disapproval and perceived addiction to internet pornography: A longitudinal examination. **Addiction 2018;113:496-506.**

150. Derbyshire KL, Grant JE. Compulsive sexual behavior: A review of the literature. **J Behav Addict 2015;4:37-43.**

151. Estellon V, Mouras H. Sexual addiction: Insights from psychoanalysis and functional neuroimaging. **Socioaffect Neurosci Psychol 2012;2:11814.**

152. Garcia FD, Thibaut F. Sexual addictions. **Am J Drug Alcohol Abuse 2010;36:254-260.**

153. Miles LA, Cooper RL, Nugent WR, et al. Sexual addiction: A literature review of treatment interventions. **J Hum Behav Soc Environ 2016;26:89-99.**

154. Hallberg J, Kaldo V, Arver S, et al. A cognitive behavioral therapy group intervention for hypersexual disorder: A feasibility study. **J Sex Med 2017;14:950-958.**

155. Ryle A, Kerr IB. Introducing cognitive analytic therapy: principles and practice. Chichester: Wiley; 2002.

156. Ryle A, Kellett S, Hepple J, et al. Cognitive analytic therapy at 30. **Adv Psychiatr Treat 2014;20:258-268.**

157. Brotto LA, Basson R, Luria M. A systematic review of neurobiological and clinical features of mindfulness meditations. **J Sex Med 2008;5:1646-1659.**

158. Brotto LA, Erskine Y, Carey M, et al. A brief mindfulness-based cognitive behavioural intervention improves sexual functioning versus wait-list control in women treated for gynecologic cancer. **Gynecol Oncol 2012;125:320-325.**

159. Van Gordon W, Shonin E, Griffiths M. Meditation awareness training for the treatment of sex addiction: A case study. **J Behav Addict 2016;5:363-372.**

160. Blycker GR, Potenza MN. A mindful model of sexual health: A review and implications of the model for the treatment of individuals with compulsive sexual behavior disorder. **J Behav Addict 2018;7:917-929.**

161. Efrati Y, Gola M. Compulsive sexual behavior: A twelve-step therapeutic approach. **J Behav Addict 2018;7:445-453.**

162. Erez G, Pilver CE, Potenza MN. Gender-related differences in the associations between sexual impulsivity and psychiatric disorders. **J Psychiatr Res 2014;55:117-125.**

163. Jellinek EM. The disease concept of alcoholism. New Haven: Hill House Press; 1960.

164. DuPont RL, McGovern JP. A bridge to recovery: an introduction to 12-step programs. Washington, DC: American Psychiatric Pub; 1994.