

**Mood and Sexual Wellbeing in Women at Risk of Compulsive Sexual Behaviour:  
Evidence from a Large Western Sample**

by

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## Abstract

Compulsive sexual behaviour (CSB) in women remains woefully understudied, despite emerging evidence that up to 30% of individuals struggling with CSB are female. Thus, in this thesis, I investigated some psychological correlates and mechanisms related to CSB in women using cross-sectional data from the International Sex Survey ( $N \approx 20,000$  women). Specifically, I examined associations between CSB and aspects of sexual wellbeing, including sexual function, desire, distress, and sexual and relationship satisfaction, as well as the role of sensation-seeking and mood symptoms (depression and anxiety). Notable proportions of the sample reported sexual dysfunction (16.4%), sexual distress (20.8%), anxiety (23%), and depression (21.9%), with 2.2% meeting the clinical threshold for compulsive sexual behaviour disorder (CSBD). Twelve percent of women meeting criteria for depression also reported high sexual desire. Women at risk of CSB reported poorer sexual function; higher sexual desire, sexual distress, sensation-seeking, depression, and anxiety; and lower sexual and relationship satisfaction than women not at risk. Confirming previous research, CSB showed significant, moderate, and robust positive associations with both depression and anxiety. However, for women, sexual desire predicted CSBD symptoms at all levels of depression, not anxiety. Relatedly, high sexual desire accounted for a small portion of the association between depression and CSB. Sensation-seeking and sexual distress strengthened the link between desire and CSB, and relationship satisfaction attenuated it, but these factors did not alter the indirect effect of depression on CSB. My results highlight a constellation of factors—depression, elevated sexual desire, distress, sensation-seeking, and relationship dissatisfaction—which might contribute to CSB and interfere with women's sexual wellbeing. These findings may inform the development of treatment protocols and underscore the need for more nuanced, gender-inclusive conceptualizations of CSB. Further research is needed to clarify the directionality of associations and causal mechanisms specific to women.

## **Statement of Originality and Disclosure of Use of Artificial Intelligence**

In the preparation of this thesis, ChatGPT (OpenAI, 2025) was used to assist with drafting segments of R code and summarizing statistical results. All AI-generated content was checked against the original R output for accuracy. Statistical interpretation and writing were carried out by the author.

## **Co-Authorship**

I am the sole author of the study in its current form. When this research is prepared for publication, authorship will be shared with my supervisor, Dr. Meredith Chivers, along with members of the international research team—including the International Sex Survey Consortium and Dr. Beáta Bóthe—whose contributions were essential to this project.

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## Chapter 1: Introduction

Physical, emotional, mental, and social wellbeing are all impacted by sexuality, which is a crucial aspect of general health (Mitchell et al., 2021). Likewise, sexual wellbeing, as defined by the World Health Organization (WHO), is a human right; it encompasses safe, positive, and enjoyable sexual experiences as well as aspects of sexual function such as desire and arousal (Mitchell et al., 2021). In contrast, female sexual dysfunction (FSD) is characterized by persistent issues with sexual desire, arousal, orgasm, or pain accompanied by clinically significant personal distress (American Psychiatric Association [APA], 2022). Such difficulties in sexual functioning have been well-researched in recent years as they greatly affect women's quality of life (Khajehei et al., 2015; McCabe et al., 2016). However, FSD focuses exclusively on a lack of desire or an inability to be aroused rather than an excess of desire or sexual activity. And yet, dysregulation of sexual desire—whether non-normatively low or high—has the potential to be maladaptive and distressing. Although excessive or compulsive sexual behaviour (CSB) appears to be more problematic for men and gender-diverse individuals than women (Bóthe et al., 2024; Kowaleska, 2020), this gender gap has been steadily decreasing (Bóthe et al., 2018, 2024). In fact, CSB places an arguably greater burden on women's physical and mental health as it is associated with adverse outcomes such as unwanted pregnancy and sexually transmitted infections, increased substance use, social isolation, failed relationships, and lower life satisfaction (Graham et al., 2016; Katchakis, 2018; Kürbitz & Briken, 2021; Walton et al., 2017). Furthermore, women who exhibit CSB may be more likely than men to experience negative consequences due to the sexual double standard (i.e., difference in sexual permissiveness between genders; Endendijk et al., 2019) but are less likely to seek help (Kürbitz & Briken, 2021). Consequently, scholars in this area have identified a pressing need for more research on women in particular (Kowaleska et al., 2024). With the aim of adding to the limited

literature on this understudied phenomenon, in this thesis I examined important sexual and mental health correlates of sexual compulsivity in women using a sizable, multi-country, community sample.

### **Defining Compulsive Sexual Behaviour (CSB)**

The validity of categorizing CSB—also known as sex addiction, hypersexuality, problematic sexual behaviour, or out-of-control sexual behaviour (OCSB)—as a disorder has been hotly debated in recent years (Kingston, 2018; Kraus et al., 2016; Winters et al., 2010). CSB involves persistent and intense sexual thoughts, urges, or actions that cause personal distress or interfere with daily functioning, and is generally categorized as either paraphilic or nonparaphilic (Derbyshire & Grant, 2015). Paraphilic behaviours involve socially unacceptable or non-consensual acts (e.g., exhibitionism, pedophilia), whereas nonparaphilic CSB includes compulsive masturbation, excessive pornography use and cybersex, frequenting sex workers and/or strip clubs, anonymous sex, having multiple sexual partners, and/or preoccupation with romantic partners (Derbyshire & Grant, 2015; Kaplan & Krueger, 2010). A recent study on CSB found that six behaviours were routinely endorsed by participants: masturbation, pornography use, repeated sex with a partner, using apps or cruising to find sexual partners, and frequent casual sex encounters (Grubbs et al., 2024).

The concept of “sexual addiction” was popularized by Patrick Carnes in the early 1980s and based entirely on anecdotal observations (Grubbs et al., 2020a). Over the last 25 years, however, particularly with the advent of the internet, researchers have increasingly focused on sexual behaviours characterized as addictive, compulsive, impulsive, or difficult to control (Grubbs et al., 2020a). Yet, efforts to classify CSB as a disorder have been hindered by several factors, most notably a lack of convincing empirical support (Sassover & Weinstein, 2022). A separate, but related, ongoing debate pertains to whether CSB qualifies as a behavioural

addiction—some researchers support this classification (Levi et al., 2020; Potenza et al., 2017), whereas others reject it outright (Prause et al., 2016). Related nosological issues include the absence of a clear definition of what constitutes “normal” sexual behaviour, as well as the tendency to pathologize sexual expression outside traditional relationship structures (e.g., casual sex with multiple partners; Winters, 2010). Ongoing difficulties with conceptualization and classification have interfered with proper diagnosis, treatment, and research in this area, despite clinicians reporting that they often encounter CSB in their patients (Briken et al., 2007).

Although disorders of low sexual desire (e.g., Female Sexual Interest/Arousal Disorder, Male Hypoactive Sexual Desire Disorder) have long been included in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5-TR; APA, 2022), renewed scientific interest in excessive sexual behaviour did not result in diagnostic consensus until quite recently. For instance, Hypersexual Disorder was proposed for inclusion in the DSM-5 by Kafka (2010) but ultimately excluded (Grubbs et al., 2020a). After much debate, compulsive sexual behaviour disorder (CSBD) was added to the *International Classification of Diseases* (ICD-11) under the rubric of impulse control disorders (WHO, 2019). CSBD<sup>1</sup> is defined as a persistent failure to control intense sexual impulses, urges, or behaviours over a period of six months or more, causing marked distress or impairment in functioning (Kraus et al., 2018). The ICD-11 further characterizes this disorder as a pattern of repetitive sexual activities becoming the dominant focus in a person’s life—interfering with health, self-care, responsibilities, or other interests; repeated failed attempts to substantially curb these behaviours; and, ongoing engagement in such behaviour despite negative consequences or limited personal satisfaction (WHO, 2019).

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<sup>1</sup> To clarify terminology, *CSB* is used throughout this manuscript to refer to the broader construct of compulsive sexual behaviour, whereas *CSBD* refers specifically to compulsive sexual behaviour disorder. The latter denotes the diagnostic entity in the ICD-11 and reflects sexual compulsivity as a clinical disorder with defined symptoms (assessed here using the CSBD-19), rather than compulsive sexual behaviour more generally.

CSBD can be expressed through various activities, such as partnered sex, frequent masturbation, excessive consumption of pornography, engagement in cybersex, phone sex, and other recurrent sexual behaviours (WHO, 2019). Concerns about overpathologizing sexual behaviours are explicitly addressed in the diagnostic guidelines—caution should be exercised in diagnosing individuals who self-identify as having the disorder, as this appraisal can be due to internal or societal judgment (Kraus et al., 2018). Most important, CSBD should not be diagnosed in individuals with high sexual drive who maintain control over their behaviour and experience no significant distress or functional impairment. The diagnosis is also inappropriate for typical adolescent behaviours (e.g., frequent masturbation) or for temporary increases in sexual activity due to situational context, such as relocation or changes in relationship status. An expert panel was recently convened by the International Society for Sexual Medicine (ISSM) to review the state of CSB as a clinical phenomenon. The panel emphasized its deleterious effects on sexual health and wellbeing, further stressing that—given its current prevalence—CSB represents a significant public health concern (Briken et al., 2024). Whether the mechanisms underlying CSB are impulsive, compulsive, or addictive (Bancroft & Vukadinovic, 2004), however, is still under active scientific discussion.

### **Gender Differences in CSB**

Due to these longstanding issues with conceptualization and classification, research on sexual compulsivity is still relatively nascent, and studies have been primarily conducted on men (Grubbs et al., 2020a; Kowaleska et al., 2020). Gender norms have influenced which aspects of female sexual dysfunction receive the most attention, resulting in an overemphasis on conditions such as low desire and pain among women (Kürbitz & Briken, 2021). These gender differences are so striking, in fact, that women are overrepresented in disorders of low desire, whereas men are more commonly linked to ones involving elevated sexual drive (Dawson & Chivers, 2014;

Klein & Kaplan, 2021). As a result, research to date on high sexual desire and sexual compulsivity in women is limited (Kowaleska et al., 2024). This gap illustrates a broader androcentric bias within sex research (Klein et al., 2021), shaped by gender stereotypes that men have innately higher or uncontrollable sex drives (Conley et al., 2011; Klein & Kaplan, 2021). Such bias is grounded in longstanding cultural double standards, wherein men's excessive sexual behaviour (e.g., protracted promiscuity, compulsive masturbation) was often normalized, whereas women's sexual expression was constrained and pathologized (Klein & Kaplan, 2021; Schultz et al., 2014). Due to these pervasive cultural expectations, men may engage in but also report excessive sexual behaviour more frequently (Kürbitz & Briken, 2021). Thus, the majority of individuals exhibiting sexual compulsivity have been male-identified (Kowaleska et al., 2020); with a reported ratio of 5:1 men to women (roughly 80–90% men), CSB has typically been regarded as a male<sup>2</sup> affliction (Cherkasskaya & Rosario, 2019; Kaplan & Krueger, 2010).

However, gender differences in CSB may be much smaller than previously thought (Böthe et al., 2018; Böthe et al., 2023; Grubbs et al., 2020a). Previous epidemiological estimates of CSB have ranged from 3-6% in adults, 5-10% of which were women (Kraus et al., 2018). More recently, studies in the U.S. and Europe have reported that a higher proportion of the population struggles with distressing sexual behaviours—7% of women and 10% of men in the U.S., and 3% of women and 5% of men in Germany and Hungary (Briken et al., 2022; Dickenson et al., 2018). Other recent studies indicate that women comprise up to 30% of people affected by CSB and problematic pornography use (PPU) in community samples (Castro-Calvo

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<sup>2</sup> It is important to note here that I am referring to gender (i.e., a cultural construction for a person's gender presentation and/or expression, and the social categories of man, woman, nonbinary, trans, etc.) versus biological/assigned sex (e.g., male, female, or intersex). Research on CSB in gender-nonconforming individuals is even more sparse, despite the fact that many studies in this area have focused on gay men (Grubbs et al., 2020a), who are not all cisgender. Thus, for the purpose of this paper, I will be referring mainly to research conducted on individuals who identify as women or men. In fact, preliminary evidence indicates that gender-diverse individuals may be at even higher risk of CSB (Böthe et al., 2024), but that is beyond the scope of this study.

et al., 2020; Kürbitz & Briken, 2021), with one study finding that 41% of individuals meeting screening criteria for CSB were women (Dickenson et al., 2018). Similarly, the largest survey conducted on CSB to date found that women were about a third as likely as men to be at risk (Bóthe et al., 2023). Over time, gender differences in CSB symptoms and behaviours have increasingly been found to be small or negligible (Marchetti, 2013; Werner et al., 2018).

Yet, despite the fact that a substantial proportion of women often report out-of-control sexual behaviours, they account for only about 5% of people seeking outpatient treatment for CSB (Kowaleska et al., 2020). A recent study in a Polish sample of women found that approximately 70% had not sought treatment despite scoring above clinical cutoffs for CSB (Kowaleska et al., 2022). Factors influencing women's underutilization of treatment include internalization of the sexual double standard—where high sexual desire is framed as normative for men but deviant for women (Baumeister & Twenge, 2002; van Anders et al., 2022)—and the subsequent likelihood of being stigmatized or pathologized (Klein & Kaplan, 2021; Kowaleska et al., 2022). Paradoxically, women are seen as less likely to engage in problematic sexual behaviour yet judged more harshly when they do, which may discourage them from seeking help (Ferree, 2019). Moreover, because women are often perceived as the “more emotional” gender, sexual compulsivity in women is frequently interpreted as a symptom of bipolar disorder or borderline personality disorder (Dickenson et al., 2018), attributed to trauma, or reframed as “love addiction” (Ferree, 2001; Kuzma & Black, 2008). Such gendered notions about female sexuality have contributed to women's sexual compulsivity being overlooked, minimized, or misdiagnosed.

Beyond clinician bias, current diagnostic tools may not adequately capture CSB in women (Kowaleska et al., 2024). Notably, the diagnostic criteria for CSBD in the ICD-11 were developed entirely from male clinical and forensic samples (Kowaleska et al., 2020). Yet some

recent research has reported measurement invariance with respect to gender on scales assessing hypersexuality and CSB (Bóthe et al., 2018; Koós et al., 2021). Still, owing to the limited research on women specifically and their low rates of treatment-seeking, the clinical presentation of CSB in women is poorly understood, preventing accurate diagnosis and effective intervention (Klein & Kaplan, 2021; Kürbitz & Briken, 2021). Thus, the need to examine the correlates of sexual compulsivity in women, as well as the etiological pathways through which problematic sexual desire and behaviour emerge, is substantive.

## **CSB and Sexual Wellbeing in Women**

### ***Sexual Function and CSB***

According to Mitchell et al. (2021), sexual wellbeing includes good sexual function along with comfort with one's own sexuality, the experience of sexual pleasure, sexual self-esteem and/or agency, and an absence of shame. Having the capacity to experience sexual desire, physiological sexual arousal (such as clitoral erections and self-lubrication), orgasm, and a lack of sexual pain are all indicators of good sexual function. Conversely, sexual dysfunction in women encompasses problems with sexual desire and arousal, orgasmic dysfunction, and sexual pain (Basson, 2008; Khajehei et al., 2015). Although FSD has been extensively researched (especially low sexual desire, which affects up to 30% of women worldwide; Mitchell et al., 2013), few studies have examined whether women with high sexual desire or CSB also experience sexual difficulties. In particular, as noted by Štulhofer et al. (2016a), little is known about hypersexual women's sexual functioning, sexual desire, sexual distress, and the quality of their intimate relationships.

High sexual desire and frequent sexual activity is not inherently problematic for women; in fact, high desire women have better sexual function and higher levels of sexual satisfaction and wellbeing (Štulhofer et al., 2016a). Interestingly, higher levels of sexual sensation-seeking—

a trait commonly linked to CSB—have also been associated with better sexual functioning in women (Burri, 2017). Sexual dysfunction also appears to be more common in hypersexual men than women (Glica et al., 2023), although sexual dysfunction has been associated with CSB in both genders (Castellini et al., 2018). The sparse research to date on women has been mixed; that is, the relationship between CSB and sexual function in women is not well understood. Some studies have found that CSB women have better sexual function (i.e., are more orgasmic and experience less sexual pain; Glica et al., 2023), whereas others have found the opposite (Burri, 2017; Cherkasskaya & Rosario, 2019; Khayer et al., 2024)—particularly in comparison to high desire women without CSB (Štulhofer et al., 2016a).

These mixed findings may reflect several contributing factors, one of which is societal judgment and shame. Individuals with non-normative levels of desire—whether low or high—experience similar societal shaming, harassment, pathologization, and relational distress (Rothmüller, 2024). However, because low sexual desire is seen as normative for women (Cherkasskaya & Rosario, 2019), women with high desire may be seen as violating gender norms and judged more harshly (Baumeister & Twenge, 2002; Calogero & Siegel, 2019). In fact, many highly sexual women experience shame as inherent to their sexual experiences; they are often “slut-shamed” and stigmatized for their behaviour (Graziani & Chivers, 2024). Yet even in the absence of internalized shame, following the addiction model of wanting versus liking (Toates, 2022), women who engage in sexually compulsive behaviour may appear sexually functional (e.g., able to orgasm) but still experience diminished sexual satisfaction. That is, the orgasms they experience may be less satisfying or diminish in reward value over time. Likewise, orgasm does not always resolve sexual arousal or desire. For instance, individuals with Persistent Genital Arousal Disorder (PGAD) experience ongoing, unwanted genital arousal that can persist

for hours or even days, which is generally not alleviated by orgasm (or only temporarily; Leiblum & Chivers, 2007).

Evidence on sexual function and CSB in women may also be mixed because certain aspects of sexual compulsivity differentially affect sexual health. The Compulsive Sexual Behavior Disorder Scale (CSBD-19; Bőthe et al., 2020) includes five core dimensions aligned with the ICD-11 criteria: difficulties regulating sexual behaviour (control), preoccupation with sexual activities (salience), repeated failed attempts to reduce the behaviour (relapse), diminished satisfaction from sexual experiences (dissatisfaction), and clinically significant distress or functional impairment (negative consequences). In two studies on CSBD and sexual health in men and women, domains of salience and relapse were linked to enhanced sexual function (i.e., stronger sex drive, easier sexual arousal, better lubrication/erectons, easier and more satisfying orgasms), whereas negative consequences and dissatisfaction were associated with diminished functioning (i.e., weaker sex drive, difficulties in sexual arousal, worse erections/lubrication, less ability to reach orgasm, and less satisfying orgasms; Glica et al., 2023). Thus, greater attention to and repeated engagement in sexual activity may be associated with greater sexual function, whereas sexual dissatisfaction, distress, and shame may interfere with it. Although this phenomenon may not be gendered, hypersexual women's greater experience of sexual shame could present a more significant barrier to their sexual satisfaction and functioning. Consequently, sexual functioning among women with CSB presents a complex clinical picture that merits further investigation.

### ***Sexual Desire and CSB***

Apart from the physiological aspects of sexual functioning, such as lubrication and erections, sexual functioning also includes an appetitive or motivational dimension—namely, sexual desire (commonly referred to as sex drive or libido). Sexual desire is generally defined as

the motivation to engage in sexual activity and/or achieve sexual gratification, with or without partners (Dawson & Chivers; Holloway & Wylie, 2015). In addition, sexual desire can take many different forms, such as solitary or dyadic (i.e., alone or for another person; Dawson & Chivers, 2014) and spontaneous versus responsive (i.e., arising in absence of sexual cues or in response to them; Basson, 2001). Further, it can be experienced or measured either as a transient state or as a more enduring trait (Dawson & Chivers, 2014). Although sexual desire may motivate sexual behaviour, this relationship is not always straightforward. Relying on behaviour as a stand-in for desire can misrepresent actual levels of desire, which may differ by gender. For example, individuals may feel desire without acting on it, such as when a partner is unavailable or the timing is unsuitable; this disconnect between desire and behaviour appears to be especially common among women (Dawson & Chivers, 2014). Similarly, women sometimes have different motivations underlying sexual behaviour—such as the need to feel desired (Meana, 2010) or enhance emotional closeness (Brotto et al., 2009)—rather than sexual desire per se. Further, sexual activity can occur for reasons entirely unrelated to desire, such as relationship maintenance, alleviating stress, enhancing self-esteem, or gaining resources (Dawson & Chivers, 2014). As such, gender comparisons based solely on sexual activity may over or underreport women's desire.

A high level of sexual desire or drive is considered to be an essential characteristic of CSB in men (Štulhofer et al., 2016b; Winters et al., 2010), but it is unclear whether this is the case for women. Although women tend to report lower sex drive on average (Baumeister et al., 2001; Frankenbach et al., 2022), these apparent gender differences most likely reflect sociocultural influences rather than innate biological disparities (Conley et al., 2011). Dawson and Chivers (2014) further suggest that sexual desire and motivation emerges similarly across genders and that any observed differences have more to do with gender norms, issues of

measurement, and biased reporting (also see Fisher, 2013) rather than reflecting innate differences. Preliminary data from female samples (Khayer et al., 2024) suggests that elevated sexual desire and drive may similarly characterize sexually compulsive women; highly sexual women also report greater sexual desire and engage in more frequent sexual activity (Cherkasskaya & Rosario, 2019). This distinction is important, as some evidence indicates that difficulties in controlling sexual behaviour may be more closely linked to heightened sexual desire and arousal rather than compulsivity (Moholy et al., 2015). By the same token, some scientists have argued that CSB may be better conceptualized as a normophilic high sex drive that is challenging to manage and/or causes significant distress versus an addiction per se (Prause, 2017; Winters et al., 2010).

Closely tied to the constructs of solitary and dyadic sexual desire, ongoing research continues to explore whether individuals with CSB exhibit gender-based differences in their preference for partnered versus solitary sexual outlets. In numerous studies, regardless of sexual orientation, men are more likely to engage in PPU and cybersex over partnered sexual behaviour (Grubbs et al., 2024; Kurbitz & Briken, 2021). Conversely, women with CSB may be more motivated by relational behaviours than anonymous or solitary ones. For instance, hypersexual women often report promiscuity and extradyadic affairs (Briken et al., 2007; Ferree, 2019; Klein et al., 2014; Stupiansky et al., 2009), indicating a possible preference for novel or emotionally charged interpersonal encounters. Some studies similarly indicate that women pursue multiple or simultaneous partners rather than solitary sexual activities such as masturbation or pornography use (Ferree, 2019; Kuzma & Black, 2008; McKeague, 2014), although conflicting findings exist (Klein et al., 2014). This potential gender difference has interesting implications with regard to sexual wellbeing and treatment—one study found frequent intercourse (i.e., partnered sex) was generally linked to favourable outcomes, whereas higher levels of masturbation and impersonal

sexual activity were more often associated with negative outcomes (Långström & Hanson, 2006). Still, not enough research has been conducted on CSB in women to conclude whether they prefer dyadic or solitary sexual behaviours as outlets, and whether this preference is reflected in their preferred object of sexual desire (e.g., known partners versus attractive others).

### ***Sexual Distress and CSB***

Sexual distress involves feelings of unhappiness, stress, frustration, worry, anger, guilt, and embarrassment around one's sex life (Shifren et al., 2008). Sexually-related personal distress was included as a diagnostic criterion for FSD to reflect its centrality to quality of life (Derogatis et al., 2002), in addition to distinguishing individuals who do not view their sexual issues as problematic (Derogatis et al., 2008). For example, individuals who identify as asexual often experience minimal or absent sexual desire without accompanying distress (Brotto & Yule, 2017). Further, psychological distress and sexual functioning have a bidirectional relationship; that is, individuals experiencing sexual difficulties are more likely to report sexual distress, and people with mood disturbances tend to be more prone to sexual concerns (Lin et al., 2024). Although ample research exists on sexual distress in women with low desire (Stephenson & Meston, 2012), very little research to date has examined whether women who engage in CSB experience distress related to their high desire. In one recent study, distress was associated with sexual compulsivity in men but not women (Kürbitz et al., 2022). In another study, 8.6% of participants in the U.S.—7.0% of women and 10.3% of men—reported significant distress or functional impairment related to challenges in managing sexual thoughts, urges, or behaviours (Dickenson et al., 2018). However, distress does not always accompany non-normative levels of low or high desire. Shifren et al. (2008) reported that although approximately 40% of U.S. women experienced sexual problems and 22% reported sexual distress, only 12% met the criteria for both a sexual difficulty and associated distress.

In a similar vein, distress around self-diagnosed CSB may have more to do with moralistic attitudes or lack of perceived self-control rather than an actual excess of sexual activity and desire (Carvalho et al., 2015; Montgomery-Graham, 2017). Likewise, self-identified sex or pornography addiction often occurs in individuals with highly conservative or religious beliefs where sexuality is associated with taboo or shame (Grubbs et al., 2020b). In addition, as previously noted, the very experience of sexual desire in women has historically been pathologized—characterized as either deficient (e.g., “frigidity”) or excessive (e.g., “nymphomania”; Štulhofer et al., 2016a)—making it even more fraught. Consequently, women with elevated levels of desire may internalize these gender norms, leading to increased distress, shame, and self-stigmatization (Štulhofer et al., 2016a).

### ***CSB and Sexual/Relationship Satisfaction***

Similarly, little is known about how hypersexuality in women relates to sexual and relational wellbeing. Interestingly, women labeled with sexual “dysfunction” do not necessarily show inherent deficits in sexual response. FSD can also be linked to situational factors, as women sometimes identify relationship conflict as central to their sexual difficulties (Basson, 2008). Therefore, addressing women’s sexual concerns requires a thorough understanding of their relational context and dynamics (Basson, 2008). Yet studies on hypersexual women’s sexual and relationship satisfaction are also scant. The perceived balance of benefits and costs in a sexual relationship, how these experiences compare to individual expectations, and the fairness of this balance between partners are all included in the Interpersonal Exchange Model of Sexual Satisfaction (IEMSS; Lawrence & Byers, 1995; Paquette et al., 2025). Relatedly, positive feelings and favourable views toward a partner who is perceived as meeting one’s needs are indicative of relationship satisfaction (Bühler et al., 2021). Although CSB appears to be more common among single rather than partnered women (Kowaleska, 2022; Vaillancourt-Morel et

al., 2016; Vaillancourt-Morel et al., 2025), women with CSB in relationships often experience worse sexual and relationship satisfaction (Khayer et al., 2024; Klein & Kaplan, 2021; Mark et al., 2011; Štulhofer et al., 2008) and compromised relational intimacy (Böthe et al., 2021b). Sexual frustration or a lack of sexual outlets is also associated with CSB, particularly when coupled with the sexual dissatisfaction often reported in long-term relationships (Winters et al., 2010). However, the directionality of these associations is unclear—that is, is sexual and relationship dissatisfaction an outcome or predictor of sexual compulsivity? These core aspects of sexual and relational wellbeing—sexual function, desire, distress, and satisfaction—are essential to examine for understanding the correlates and consequences of CSB in a more gender-inclusive manner.

## **Mood and CSB in Women**

### ***The Link Between Depression and CSB***

Shifting from proximal correlates to more foundational causes, a number of individual differences in personality, mental health, and developmental history are associated with CSB, regardless of gender or sexual orientation. Factors identified to date include childhood sexual abuse (CSA), insecure attachment, parental neglect, and other forms of trauma, as well as traits such as sensation-seeking or sexual excitation, emotional dysregulation, and affective disorders like depression and anxiety (Klein & Kaplan, 2021; Kowalewska et al., 2020; Kurbitz & Briken, 2021; Slavin et al., 2020b; Vaillancourt-Morel et al., 2025). Certain associated variables show distinct gender differences, such as the experience of sexual trauma and CSA, which tend to affect women more on average (Scoglio et al., 2025; Vaillancourt-Morel et al., 2025). There are yet more complicated associations via intermediary factors. For example, Fontanesi et al. (2021) found that the etiological pathway between trauma and hypersexuality was mediated by depression, shame, and guilt. Reis et al. (2023) similarly found that depression mediated the link

between CSA and CSB in men. However, evidence on whether these various mechanisms differentially affect individuals across genders is still mixed; for example, some researchers have found CSA to be more implicated in CSB among men (Slavin et al., 2020a).

Among these individual vulnerabilities, mood dysregulation—particularly depression and anxiety—has a particularly salient link with CSB. People with hypersexual tendencies display heightened sensitivity to negative emotions and may use sexual behaviour as a means of soothing or escaping these affective states (Kingston, 2018; Rahm-Knigge et al., 2023). Indeed, one of the most prominent correlates of CSB is depressed mood, with numerous studies reporting high rates of comorbid depression among individuals exhibiting CSB (Bancroft et al., 2003a, 2003b; Bittoni & Kiesner, 2022; Brem et al., 2017; Ciocca et al., 2021, 2022; Castro-Calvo et al., 2020; Fontanesi et al., 2021; Hegbe et al., 2021; Nair et al., 2013; Scanavino et al., 2018; Storholm et al., 2016), or indicating that depressive symptoms can intensify CSB presentations (Reis et al., 2023; Shivakumar et al., 2024). A large meta-analysis found a moderate, positive relationship between hypersexual behaviour and depression, regardless of gender (Schultz et al., 2014), and individuals at risk of CSB in a large community sample were more likely to have received treatment for depression (Briken et al., 2022).

Furthermore, the relationship between mood and sexual behaviour is complex. This association may be understood in part by the dual control model of sexual response, which posits individual differences in excitation and inhibition of sexual response (Schultz et al., 2014; Toates, 2022). Although most people with depression experience a decline in sexual interest and desire, for a small subset of people the opposite is true (Bancroft et al., 2003a, 2003b; Bancroft & Vukadinovic, 2004; Bittoni & Kiesner, 2022). For instance, a majority of men report declines in sexual desire during episodes of depression or anxiety, while a smaller proportion—approximately 15% to 25%—experience heightened sexual drive (Levi et al., 2020). And

although this phenomenon has been found in men of all sexual orientations, it may be somewhat more pronounced in gay men (Bancroft et al., 2003a, 2003b). Similarly, Lykins et al. (2006) found that although just over half of women reported diminished sexual desire during episodes of depression, around 10% experienced an increase. Yet a greater proportion of men seem to experience increased desire when depressed than women (for whom depression more often results in decreased desire). This effect appears to be stronger among heterosexual men in particular (Bancroft et al., 2003b; Janssen et al., 2012). Depressed mood is also more likely to result in excessive sexual behaviour in individuals with a propensity towards sensation-seeking and sexual excitation (Schultz et al., 2014), a phenomenon that has been more firmly established in men. Further, increased sensitivity to sexual rewards may be present in people struggling with depression and/or mania (Prause, 2019). Yet again, this relationship is not conclusive—at least one study on men who have sex with men indicated that negative mood doesn't adversely affect arousal (Janssen et al., 2020). Still, such paradoxical effects of mood disturbances on sexual desire appear to be more robust in men than in women (Bittoni & Kiesner, 2022).

Moreover, there is mounting evidence that CSB may represent an attempt to self-soothe or regulate dysphoric mood states, in order to achieve a sort of emotional homeostasis (Carvalho et al., 2014; Garofalo et al., 2015; Gola et al., 2020; Katehakis, 2018; Lew-Starowicz et al., 2020; Toates, 2022). Difficulties in regulating, identifying, and accepting emotions have also been associated with CSB (Rahm-Knigge et al., 2023). Certain individuals appear to cope with their depression via sexual fantasies, urges and behaviours that temporarily relieve their distress (e.g., by focusing on pleasurable arousal and releasing tension through orgasm), just as some people become addicted to substances because of their ability to modulate negative affect (Schultz et al., 2014). Paradoxically, the concomitant shame and guilt ultimately increase distress, prompting further attempts to self-soothe—thereby perpetuating a vicious cycle. This

phenomenon may alternately be characterized as emotional or experiential avoidance, that is, a tendency to escape one's own internal aversive states (Brem et al., 2017). According to Shivakumar et al. (2024), negative mood may trigger sexual compulsivity for a number of reasons. Increased sexual activity may fulfill emotional or connection needs, temporarily assuage loneliness or low self-worth, distract from distressing thoughts or feelings, or help to release negative emotions. In fact, this relationship between attempted emotional regulation and CSB is so robust that the definition for the proposed Hypersexual Disorder in the DSM-5 included “repetitive engagement in sexual fantasies, urges, or behaviours in response to dysphoric mood state or stressful life events” (Garofalo et al., 2015, p. 5). The ICD-11 guidelines for CSBD likewise acknowledge that people often use sexual activity to cope with negative emotions (e.g., anxiety, depression, boredom, loneliness; WHO, 2019).

Germane to this discussion is the well-established finding that women experience depression at approximately twice the rate of men (Girgus & Yang, 2015). Some preliminary research has found higher rates of concurrent depression among female versus male sex addicts (McKeague, 2014; Reid et al., 2012b). Likewise, more recent studies suggest that severe depression and anxiety may play a greater role in CSB among women (Kowaleska et al., 2024), although some report that this link is greater in men (Levi et al., 2020). In fact, stress vulnerability and negative emotionality may be more strongly implicated in the expression of CSB in women than in men (Kürbitz & Briken, 2021). One study found that CSB-treatment-seeking women, not men, reported higher negative affect (i.e., depression and anxiety; Winters et al., 2010). Still, research on the association between depression and CSB in women remains mixed—some studies report a strong relationship (Khayer et al., 2024; Opitz et al., 2009; Winters et al., 2010), whereas others have been inconclusive (Carvalho et al., 2014).

Although CSB has been found to be highly comorbid with mood disorders, the nature and direction of these associations are unclear, particularly in women. For instance, it is not yet known whether depression is a symptom of or a precursor to CSB (Carvalho et al., 2014). Some researchers have even gone so far as to propose that CSBD is not a distinct nosological entity but merely a symptom of depressed affect (Opitz et al., 2009; Prause, 2024; Winters, 2010) or an emotion-focused coping strategy (Kingston, 2018; Rahm-Knigge et al., 2022). Despite its recent classification, whether sexual compulsivity constitutes a distinct diagnosis remains a point of contention in the field. Given that women, on average, experience higher rates of depression, disentangling the nature of this comorbidity may offer valuable insights with respect to nosology.

### ***The Role of Anxiety***

Engaging in sexual behaviours repeatedly to alleviate symptoms of anxiety or depression has been recognized as an increasingly common but maladaptive coping strategy (Grant Weinandy et al., 2023). Just as engaging in sexual behaviour to cope with depressive symptoms can create a self-perpetuating cycle of compulsivity, CSB may also intensify anxiety, which in turn strengthens the urge to seek relief through further anxiety-reducing sexual behaviours, thereby reinforcing the cycle (Dickenson et al., 2018). Bittoni and Kiesner (2022) suggest that the link between anxiety and increased sexual arousal may be due to similar sympathetic nervous system activation; that is, anxiety-related physiological arousal can linger and generalize to sexual stimuli. Accordingly, anxiety has been consistently reported as comorbid with sexual compulsivity (Brem et al., 2017; Briken et al., 2022; Castro-Calvo et al., 2020; Hegbe et al., 2021; Khayer et al., 2024; Scanavino et al., 2018), particularly among gay men (Grant Weinandy et al., 2023). Although some studies have found no gender differences in the link between anxiety and CSB (Reid et al., 2012b), others report a stronger association among men, regardless of sexual orientation (Janssen et al., 2012; Levi et al., 2020). Yet Lykins et al. (2006) discovered

that the contradictory effect of anxiety on women's sexual desire was even more noticeable than depression—34% of respondents said that their desire decreased while they were nervous, whereas 23% said that their desire increased. However, overall, anxiety has a weaker association with CSB than depression, with effect sizes in the small to moderate range (Grant Weinandy et al., 2023; Reis et al., 2023). And similar to depression, the directionality of the association between anxiety and CSB is unclear (Grant Weinandy et al., 2023). Nonetheless, anxiety and depression are often intertwined and frequently overlap with sexual compulsivity, making it difficult to tease them apart.

### ***Other Moderators of the Relationship Between Mood, Sexual Desire, and CSB***

Along with compulsivity, impulsivity has been strongly and consistently associated with hypersexual behaviour (Böthe et al., 2019; Castro-Calvo et al., 2020; Carvalho et al., 2015; Du & Knight, 2024; Hegbe et al., 2021). Past theoretical frameworks have positioned problematic behaviours like CSB along a spectrum with impulsivity at one end and compulsivity at the other (Böthe et al., 2019). However, emerging evidence from studies on gambling, CSB, and substance abuse suggests that impulsivity and compulsivity frequently co-occur and even overlap (Böthe et al., 2019; Carvalho et al., 2015). The construct of impulsivity is typically thought to have five core dimensions: sensation-seeking (i.e., a preference for thrilling or risky experiences); negative urgency (i.e., the tendency to act impulsively to alleviate distress); lack of perseverance (i.e., difficulty sustaining focus on tedious tasks); lack of premeditation (i.e., acting without considering consequences); and, more recently, positive urgency (i.e., rash behaviour triggered by intense positive affect; Böthe et al., 2019). Both sensation-seeking and increased sexual excitation have been independently linked to sexual compulsivity, along with other personality traits like neuroticism, extraversion, narcissism, psychopathy, and sociosexuality (Brazil, 2025; Rettenberger et al., 2016).

Sensation-seeking is considered to be a stable trait (Cross et al., 2013), whereas sexual excitation refers to individual differences in physiological arousal and responsiveness to sexual stimuli (Rettenberger et al., 2016). Men generally exhibit higher sensation-seeking tendencies than women (Cross et al., 2013), which may help explain some of the observed gender differences in CSB. However, in at least one study, hypersexual women had a greater propensity towards excitement-seeking than men (Reid et al., 2012b), even though their overall trait impulsivity was almost identical. In a similar vein, Lykins et al. (2006) found that a predisposition to sexual excitation in women was the strongest predictor of the relationship between low mood and compulsive sexuality. Relatedly, pharmacological interventions that affect both mood and impulsivity seem to also attenuate CSB (Lew-Starowicz et al., 2020). Bittoni and Kiesner (2022) further note that women high in sensation-seeking and sexual excitation can experience elevated sexual desire under both low and high mood conditions. That is, when sex is consistently associated with emotionally intense experiences, these women may be more likely to use sexual activity to regulate negative affect or enhance positive states, thereby reinforcing this link (Bittoni & Kiesner, 2022).

In sum, given women's greater vulnerability to affective disorders, I wanted to examine whether depression and and/or anxiety would strengthen the link between sexual desire and CSB in women. Further, whether in some women, depressed mood might result in increased—versus decreased—sexual desire, which then might be associated with a higher risk of CSB. The aforementioned findings also underscore the importance of examining individual traits like sensation-seeking as moderators of the sexual desire–CSB relationship. Indeed, a recent large-scale study found that anxiety, depression, compulsivity, and impulsivity together explained approximately one-third of the variance in CSB, highlighting a complex interplay of emotional and trait-based vulnerabilities (Levi et al., 2020). Identifying such moderating and mediating

factors may help to clarify why some female-identified individuals are more vulnerable to dysregulated sexual behaviour when experiencing negative affect.

### **The Current Study**

In this study, I examined the relationship between CSB and number of sexual and mental health correlates in women from a non-representative, cross-sectional sample collected from 42 countries (see Bóthe et al., 2021a). To date, the majority of the evidence showing significant comorbidity between CSB and mood disorders comes from clinical samples, which may not accurately reflect the general population (Carvalho et al., 2014). Thus, a large community sample was used to further investigate these relationships. I formulated the following research questions (RQ) and hypotheses (H) to explore the relationships among variables, as well as their mediating and moderating effects.

### ***Research Questions***

**RQ1: Do women at risk of CSB differ significantly from women not at risk on aspects of sexual wellbeing (i.e., sexual function, desire, distress, and satisfaction) and traits such as impulsivity (i.e., sensation-seeking)? Further, do women at risk of CSB have stronger sexual desire for unknown partners?**

**H1a.** Women at risk of CSB (i.e., scoring above the clinical cutoff on the CSBD-19) will report higher sexual function (e.g., greater ease of arousal and orgasm) but lower orgasm satisfaction compared to women below the cutoff.

**H1b.** Women at risk of CSB will report higher levels of sexual desire than women not at risk.

**H1c.** Among women at risk of CSB, sexual desire will be strongest for sexual activity with attractive others, followed by known partners, and lowest for solitary activity.

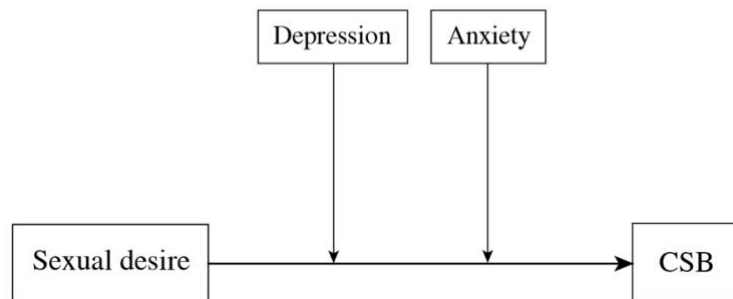
**H1d.** Women at risk of CSB will be higher in sensation-seeking, report greater sexual distress, and lower sexual and relationship satisfaction, compared to women not at risk.

**RQ2: Is the association between sexual desire and CSB in women moderated by depression and/or anxiety?**

**H2a.** Depression and anxiety will be positively associated with CSB; depression will have a stronger association with CSB than anxiety.

**H2b.** Beyond these direct associations, depression and anxiety will moderate the sexual desire–CSB relationship, such that the positive link between desire and CSB will be stronger at higher levels of negative affect (see Figure 1).

**Figure 1**  
*Moderation Model (RQ2)*

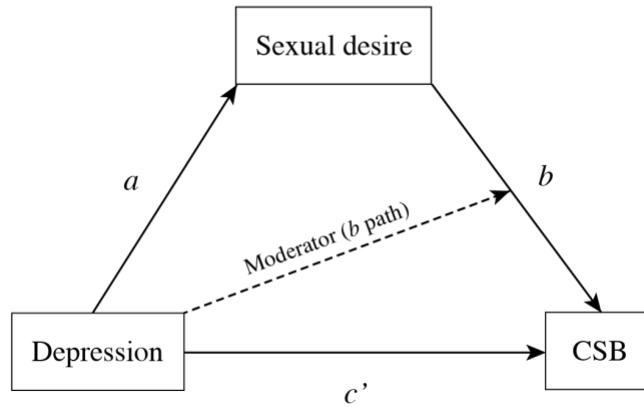


**RQ3: Does sexual desire mediate the relationship between depression and CSB in women?**

**H3a.** Among women with elevated depression scores, a subset will also report elevated sexual desire.

**H3b.** The association between depression and CSB will be mediated by increased sexual desire (see Figure 2). Depression is expected to moderate the effect on the *b* path.

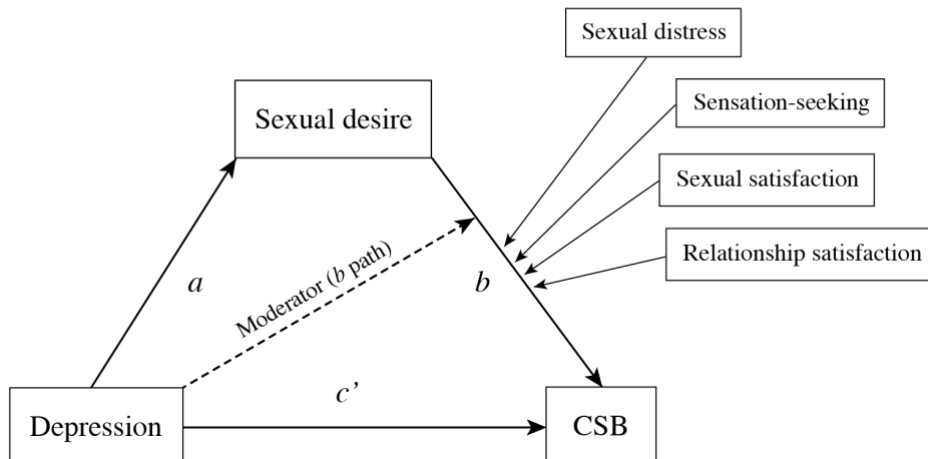
**Figure 2**  
*Conditional Mediation Model (RQ3)*



**H3c.** A reverse-direction model (sexual desire → depression → CSB) will be tested against the hypothesized mediation model in H3b to compare explanatory plausibility.

**H3d.** This indirect pathway will be further moderated by contextual or intrapersonal factors (i.e., sexual distress, sensation-seeking, sexual satisfaction, and relationship satisfaction). Depression will also be included as an additional moderator of the *b* path (see Figure 3).

**Figure 3**  
*Moderated Mediation Model (RQ3)*



## Chapter 2: Method

### Procedure

The International Sex Survey (ISS) was an international, multi-language, cross-sectional, self-report survey of a very large community (i.e., not epidemiological or demographically representative) sample of adults; for detailed study protocol, see Bóthe et al., 2021a. Recruitment was conducted in 42<sup>3</sup> countries between October 2021 and May 2022; participants were eligible if they reached the minimum age specified for their country (e.g., 18 years or older in Canada). Materials advertised a “sex survey on problematic and non-problematic sexual behaviours.” Eligible participants completed an anonymous, self-report online survey on Qualtrics, supplied in 24 different languages, which took approximately 30 minutes. The study was approved by all collaborating countries’ national/institutional ethics review boards; see details [here](#).

### Participants

Data cleaning on the overall sample was conducted by the original research team (see full procedure for the ISS at [this link](#)). The survey was completed by 215,252 participants; after data cleaning, a total of 82,243 participants were included in the final ISS dataset. Data cleaning steps included removing participants who did not consent, were under the age of 18 or did not report their age, quit before the attention testing questions or failed to pass them, gave the same answers to all items in a scale (even when reverse-coded), or reported answers in certain demographic questions that were clearly wrong (e.g., length of relationship longer than their age). Participants were also removed from the dataset who gave inconsistent answers to at least two out of the three difference scores for sexual frequency and number of partner variables (e.g., number of

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<sup>3</sup> Egypt, Iran, Pakistan, and Romania were included in the study protocol paper as collaborating countries (Bóthe et al., 2021a); however, it was not possible to get ethical approval for the study in a timely manner in these countries. Chile was not included in the study protocol paper as a collaborating country (Bóthe et al., 2021a), but joined the study after the protocol was published. Therefore, instead of the planned 45 countries, only 42 countries were used in the final study; see details at <https://osf.io/ypnbw>.

casual sex partners in the past year was higher than the total number of sex partners in the participant's lifetime).

Of the total 82,243 participants, 38.5% were cisgender men ( $n = 31,640$ ), 55.8% were cisgender women ( $n = 45,852$ ), and 4.8% were gender-diverse individuals ( $n = 3,684$ ). The mean age of the ISS sample was 32.4 years ( $SD = 12.5$ ). The majority of participants were heterosexual (68.2%;  $n = 56,117$ ) and 31.3% ( $n = 25,775$ ) were sexually diverse; 63% ( $n = 51,773$ ) were partnered (e.g., in a relationship or married).

For the purpose of this study, I used a subset of the ISS data consisting of women from Western/Central Europe and North American countries only ( $N = 19,870$ ), where English is widely spoken and understood, and which have similar gender equality indices (see Table 1 in Results for participating countries). The selected countries are in the top third for gender equality worldwide; Europe and North America both lead the world in gender equality, and four others (Ireland, Spain, Germany, and New Zealand) are in the top 10 (World Economic Forum, 2024). This narrowing of the dataset was important with respect to measuring women's sexual behaviour in aggregate; there is less chance of measurement invariance error among women in countries with similar sexual norms and practices. Paring the sample down in this way also helped to guard against statistical issues associated with the higher power of a dataset this size, such as the risk of detecting trivial effects and increased Type I error (Breur, 2016).

## **Materials and Measures**

### ***Demographic Information***

Participants indicated their country of residence with one question at the beginning of the ISS, which they took in one of 24 applicable languages. Relevant sociodemographic factors (e.g., gender, ethnicity, relationship status, education, etc.) were mainly captured by single questions in the ISS survey (Böthe et al., 2021a). Participants' gender was identified based on the intersection

of sex assigned at birth, gender identity, and trans status, yielding six categories: cisgender man, cisgender woman, transgender man, transgender woman, gender-diverse individual, and questioning or another gender identity. Sexual orientation was categorized in eight ways: heterosexual, gay or lesbian, bisexual, queer or pansexual, homo- or heteroflexible, asexual, questioning, and “other.” Relationship status choices were single, dating, married/common-law, and widowed or divorced.

### ***Compulsive Sexual Behaviour***

The 19-item Compulsive Sexual Behavior Disorder Scale (CSBD-19; Bóthe et al., 2020; Bóthe et al., 2023) was recently developed to assess CSB based on the ICD-11’s diagnostic guidelines (Kraus et al., 2018; WHO, 2019). The CSBD-19 assesses compulsive sexual urges, thoughts, and behaviours and their consequences in the past six months along five factors: control (three items, e.g., “I could not control my sexual cravings and desires”), salience (three items, e.g., “I would rather have had sex than to have done anything else”), relapse (three items, e.g., “Trying to reduce the amount of sex I had almost never worked”), dissatisfaction (three items, e.g., “Although sex was not as satisfying for me as before, I engaged in it”), and negative consequences (seven items, e.g., “I did not accomplish important tasks because of my sexual behaviour”). Participants indicated their levels of agreement with each item on a four-point Likert-type scale (1 = *totally disagree*; 4 = *totally agree*). A total sum score was computed ranging from 19 to 76, with higher scores indicating higher CSB ( $\geq 50$  being the clinical cutoff; Bóthe et al., 2020). See Appendix A for the full questionnaire.

The original study validated the CSBD-19 in the United States, Hungary, and Germany in gender-inclusive samples; the scale showed strong psychometric properties with high internal consistency, reliability, and construct validity across the different samples (Bóthe et al., 2020). A subsequent study by Bóthe et al. (2023) revealed that the CSBD-19 demonstrated strong

psychometric properties across a number of other cultures and languages. The scale's internal consistency was also excellent, with Cronbach's alpha consistently above .90. With respect to convergent validity, the CSBD-19 correlated well with other measures of hypersexuality, showing that it effectively captures elements related to CSB. In addition, the measure demonstrated appropriate discriminant validity, as it showed weaker correlations with unrelated constructs like general sexual activity. Furthermore, in a study on married Iranian women, the Iranian version of the CSBD-19 was also found to have excellent validity and reliability (Cronbach's  $\alpha \geq .95$ ; Khayer et al., 2023).

### ***Sexual Function***

Sexual function was assessed using the Arizona Sexual Experience Scale (ASEX; McGahuey et al., 2000). The ASEX encompasses key aspects of sexual function—specifically sex drive, sexual arousal (i.e., ease of arousal and presence of lubrication), orgasmic potential, and sexual satisfaction—with evidence supporting its use in various populations. Participants indicating that they would like to answer the “female-bodied” version of the sexual function measures received a female version of the ASEX (i.e., containing questions about vulvas/vaginas). Sample ASEX questions include “How strong is your sex drive?” and “How easily does your vagina become moist or wet during sex?”; these were measured on a 5-point scale with response options suited to each question (e.g., 0 = *extremely strong* to 5 = *very weak*, 0 = *extremely easily* to 5 = *very difficult*). Higher scores reflect greater sexual dysfunction across domains of desire, arousal, orgasm, and satisfaction; a total score of 19 or greater indicates clinically significant sexual dysfunction (McGahuey et al., 2000). See Appendix D for the full questionnaire. The ASEX has shown excellent psychometric properties—McGahuey et al. (2000) reported a Cronbach's  $\alpha$  of 0.91, indicating high internal consistency; it also displayed

strong test-retest reliability ( $r = .80, p < .01$ ). A more recent study has also validated the scale in this sample (see Ballester-Arnal et al., 2024).

### ***Sexual Desire***

In the present study, sexual desire was assessed using the commonly used and well-validated Sexual Desire Inventory (SDI-2) developed by Spector et al. (1996). The SDI-2 is designed to measure sexual desire across two primary dimensions: dyadic sexual desire (desire for sexual activity with a partner) and solitary sexual desire (sexual interest or fantasies without a partner). Dyadic sexual desire is further split into two categories—partner-related desire and attractive-person related desire. Regarding its reliability, the SDI-2 demonstrates high internal consistency, with Cronbach’s alpha values of .86 for dyadic sexual desire and .96 for solitary sexual desire (Spector et al., 1996). A factor analysis revealed that these two dimensions capture the core components of sexual desire in both men and women, making it a robust tool for assessing sexual desire in diverse populations (Spector et al., 1996). Further, more recent tests of measurement invariance conducted on the full ISS sample confirmed that the measure functions equivalently across different countries, languages, genders, and sexual orientations (Castro-Calvo et al., 2024b). The SDI-2 contains 14 items, with questions such as “How long could you go comfortably without having sexual activity of some kind?” and “When you first see an attractive person, how strong is your sexual desire?” answered along a 9-point scale suited to each question (e.g., 0 = *no desire* to 8 = *strong desire*); see Appendix C. Higher scores on the SDI-2 indicate stronger levels of sexual desire, assessed across both solitary and dyadic domains. The scale yields subscale scores as well as a total score, with higher values reflecting greater frequency and intensity of sexual desire (Spector et al., 1996). Although the SDI-2 has been extensively validated, no established clinical cutoff scores exist for identifying “high” sexual desire (Castro-Calvo et al., 2024b). Accordingly, high sexual desire was operationalized in the

present study using a sample-based 90th percentile cutoff (total score  $\geq 81$ ) representing the upper tail of the distribution.

### ***Sexual Distress***

Sexual distress was measured by the short, gender-neutral version of the original 12-item Female Sexual Distress Scale (FSDS; Derogatis et al., 2002), named the Sexual Distress Scale (SDS-3; Lin et al., 2024; Pâquet et al., 2018). The SDS-3 contains three questions in which participants answer how often they feel distressed about their sex life, inferior because of sexual problems, or worried about sex, on a scale of 0 (*never*) to 4 (*always*). Higher SDS-3 scores indicate elevated sexual distress (i.e., more frequent or intense negative feelings related to one's sexual experiences); see Appendix E for the full questionnaire. The SDS-3 has good internal consistency, with Cronbach's  $\alpha$  values ranging from .86 to the low .90s, and the measure demonstrated both good criterion sensitivity and discriminant validity (Derogatis et al., 2002; Lin et al., 2024). A recent study found its factor structure to be invariant across countries, languages, gender, and sexual orientation (Lin et al., 2024).

### ***Sensation-Seeking***

Most existing research on impulsivity and hypersexuality has either treated impulsivity as a unidimensional construct or focused solely on sensation-seeking (Bóthe et al., 2019). The measure of impulsivity used in the ISS, the Short UPPS-P Impulsivity Scale (UPPS-P; Billieux et al., 2012) was found to have a three-factor structure consisting of the constructs of urgency, lack of conscientiousness, and sensation-seeking. As the four questions that loaded on sensation-seeking were found to be a distinct subscale in the original validation paper, they were the only ones used in this analysis (see Appendix F). In the UPPS-P, the sensation-seeking subscale includes questions such as “I generally seek new and exciting experiences and activities” and “I quite enjoy taking risks”, on a 4-point Likert scale (1 = *disagree strongly* to 4 = *agree strongly*);

higher values on each subscale indicate stronger tendencies toward that facet of impulsive behaviour. The short version of the 45-item UPPS-P has been found to be valid and reliable, with Cronbach's  $\alpha$  values ranging from .70 to .84, suggesting good internal consistency for the various subscales. Internal consistency and test-retest reliability for each impulsivity factor was also very good (Billieux et al., 2012).

### ***Sexual and Relationship Satisfaction***

**Sexual Satisfaction.** The Interpersonal Exchange Model of Sexual Satisfaction (IEMSS), developed by Lawrance and Byers (1998), evaluates sexual satisfaction within relationships, focusing on the exchange of rewards and costs between partners. The model conceptualizes sexual satisfaction as the balance between what partners give and receive sexually and emotionally. The Global Measure of Sexual Satisfaction (GMSEX; Lawrance & Byers, 1998) is based on this model and assesses participants' satisfaction with their sexual relationship. Items are rated on 7-point semantic differentials (e.g., *bad–good*, *unsatisfying–satisfying*), and total scores range from 5 to 35; see Appendix G. Higher scores indicate greater sexual satisfaction, whereas lower scores reflect dissatisfaction. Because no formal clinical cutoffs have been established, scores are typically analyzed as continuous indicators of satisfaction. Various studies have confirmed its psychometric soundness; the GMSEX has recently been validated in diverse populations, including cross-cultural samples, showing robust internal consistency with Cronbach's alpha values typically above .80 (Paquette et al., 2025).

**Relationship Satisfaction.** The Relationship Assessment Scale (RAS) is a widely used 7-item measure of global relationship satisfaction (Hendrick, 1988), with a validated 1-item short form (Single-item Relationship Assessment Scale; RAS-1) proposed by Fülöp et al. (2022). In the RAS-1, respondents rate their overall relationship satisfaction on a 5-point scale (1 = *I am not satisfied* to 5 = *I am very satisfied*); see Appendix H. Higher scores reflect greater relationship

satisfaction. The RAS-1 was examined across two independent studies (Fülöp et al., 2022) and showed strong concurrent validity with the full RAS, as well as consistent convergent validity with theoretically related constructs, supporting its use as a brief indicator of relationship satisfaction. No clinical cutoff scores have been established; the measure is typically interpreted continuously or holistically (e.g., a score of 4 or 5).

### ***Depression and Anxiety***

Both depression and anxiety were measured using the Brief Symptom Inventory (BSI-18; Derogatis, 2000), deemed suitable for cross-cultural samples (Asner-Self et al., 2006). The BSI-18 includes three six-item subscales—Somatization, Depression, and Anxiety—and a Global Severity Index (GSI) computed from all 18 items (Franke et al., 2017). Only the Depression and Anxiety items were administered in the ISS; the GSI, which reflects overall severity of distress, requires the full item set so it was not reported. The Depression and Anxiety subscales assess participants' depressive (six items, e.g., "Feeling hopeless about the future") and anxiety symptoms (six items, e.g., "Nervousness or shakiness inside") over the past seven days. Participants indicate their answers on a 5-point scale (0 = *not at all* to 4 = *extremely*), with higher values indicating greater levels of depression or anxiety; see Appendix B for subscale items. The BSI-18 has good internal consistency with alpha coefficients ranging from .74 to .89 across subscales (Derogatis, 2000); it has also consistently shown test-retest reliability and construct validity through correlations with other measures of psychological symptoms. The range of the measure is 0–24, with higher scores reflecting greater reported depression and anxiety symptoms. The most recommended clinical cutoff is a subscale *T*-score of  $\geq 63$  (equivalent to raw scores  $\geq 10$  for men and  $\geq 13$  for women; Zabora et al., 2001), with more recent studies suggesting a cutoff of  $\geq 12$  for women as having more clinical utility in identifying ICD-11 cases (Grassi et al., 2018).

## Statistical Analysis

All analyses, including descriptive statistics, were conducted in R (R Core Team, 2025). Given the very large sample size, the statistical power of the analyses was extremely high, increasing the likelihood of identifying even trivial effects as statistically significant. To address this concern, the alpha threshold for significance testing was set a priori at  $\alpha = .001$  rather than at the conventional .05. Though an alpha of .01 or less is recommended for large samples, Maier and Lakens (2022) suggest that as sample size increases, alpha levels should decrease. This more stringent criterion reduces the probability of Type I error and ensures that the effects detected are more likely to be meaningful (Maier & Lakens, 2022). In addition, effect sizes (e.g., variance explained, Cohen's  $d$ , standardized coefficients) are reported and interpreted alongside  $p$  values to better assess practical significance. Normally, assumptions underlying linear regression models should be checked to ensure the validity of all results (i.e., linearity, homoscedasticity, normality, multicollinearity). With a sample of this size, however, violations are a matter of course—even trivial model misfit is likely to produce statistically significant chi-square tests, leading to rejection of otherwise acceptable models (Zhang et al., 2024). Therefore, results of the normality testing were not reported.

Following best data analysis practices (Sellbom & Tellegen, 2019), confirmatory factor analyses (CFAs) were conducted for all measures prior to hypothesis testing<sup>4</sup>. Given the high correlations among the five CSBD-19 dimensions, I also used a second-order CFA to evaluate whether these dimensions reflected a common higher-order CSBD construct. The hierarchical model specified five first-order factors loading onto a single second-order latent factor and did not include correlated residuals. The five established factors loaded substantially onto a higher-

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<sup>4</sup> All factor analyses, along with other psychometrics for this sample, are reported in the Results section.

order factor, supporting the use of the total CSBD-19 score as an index of overall CSB severity (see Results section for details).

Depending on the research question, the CSBD-19 was analyzed either continuously or dichotomously<sup>5</sup> (i.e., using a validated clinical cutoff to separate women into at risk versus not at risk groups). Conceptually, CSB is understood as a dimensional construct, and continuous CSBD-19 scores preserve variability and statistical power when examining associations, mediation, and moderation across the full range of symptom severity (Markon et al., 2011). Accordingly, continuous scores were used for analyses focused on symptom severity and underlying mechanisms. Continuous scoring preserves information, maximizes statistical power, and avoids the well-documented drawback of dichotomizing continuous traits (Altman & Royston, 2006).

The CSBD-19 can also be used to identify individuals at elevated clinical risk, consistent with ICD-11 diagnostic criteria, using an empirically validated cutoff intended to group individuals as high or low CSB risk (Böthe et al., 2020, 2022). This cutoff grouping approach is commonly used to define at-risk groups (e.g., Böthe et al., 2023; Droubay et al., 2025; Golder et al., 2024; Jepsen et al., 2024; Finkenstaedt et al., 2025; Vaillancourt-Morel et al., 2025). Thus, for group-based analyses, participants were classified as “at risk” or “not at risk” of CSBD using the validated CSBD-19 cutoff score ( $\geq 50$ ; Böthe et al., 2020). So while CSB is understood as a dimensional construct, most extant studies using this measure employ a cutoff-based approach for clinical or epidemiological purposes (Kraemer et al., 2004).

Zero-order correlations were used to provide a descriptive overview of bivariate associations among study variables. Next, a multiple regression model was conducted to examine

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<sup>5</sup> The combined use of dimensional scores and clinical thresholds for the same measure in this study was entirely intentional, and reflects my limited understanding of research design at that time.

the joint contribution of these variables to CSB. To address the primary hypotheses, moderation analyses were performed to test whether depression and anxiety moderated the sexual desire–CSB association. Mediation and moderated mediation models were then used to evaluate whether sexual desire mediated the depression–CSB association and whether this indirect pathway was further conditioned by contextual or intrapersonal variables. Demographic variables that differed between CSBD risk groups at the a priori alpha level were additionally included as covariates in adjusted models. To assess the robustness of findings, primary analyses were conducted both with and without covariates, consistent with recommendations from Simmons et al. (2011).

Lastly, direction dependence analysis (DDA) was employed to further examine the plausibility of directional relationships between mediation variables—specifically, whether depressive symptoms led to elevated sexual desire and subsequent CSBD symptoms, or vice versa. DDA is a confirmatory approach that compares the residuals of competing mediation models (original vs. reversed direction) to test a priori hypotheses about causal flow (Wiedermann & von Eye, 2015). Under certain assumptions, DDA may be able to uncover the true causal direction between two variables (Thoemmes, 2015a). Further, despite being a common practice, simply reversing arrows in equivalent models and comparing the difference is not defensible (Thoemmes, 2015b). Although DDA does not firmly establish causality, it can strengthen theoretical conclusions by identifying the direction most consistent with the observed data. Given the scarcity of research on CSB in women, DDA may serve as a valuable tool for clarifying developmental pathways in this area, albeit with appropriately cautious interpretation.

## Chapter 3: Results

### Demographics

Women from 16 Western/Central European and North American countries were included in this study (see Table 1). Participants were primarily from Hungary, Italy, Portugal, Germany, and Spain. Other major contributors included New Zealand, Canada, the United States, and Ireland.

**Table 1**  
*Participants' Country of Residence*

Country	Participants ( <i>n</i> )	Percent of sample (%)
Hungary	4,529	22.80
Italy	1,847	9.30
Portugal	1,821	9.20
Germany	1,759	8.90
Spain	1,494	7.50
New Zealand	1,399	7.00
Canada	1,335	6.70
USA	1,150	5.80
Ireland	995	5.00
France	908	4.60
UK	859	4.30
Switzerland	744	3.70
Austria	431	2.20
Australia	289	1.50
Belgium	277	1.40
Gibraltar	33	0.20

Detailed sociodemographic characteristics of the entire sample are presented in Table 2. Participants ranged from 18 to 91 years of age, with a mean age of 30.6 ( $SD = 10.8$ ). Women at risk of CSB ( $n = 438$ ) had a slightly different demographic presentation; see comparisons below.

**Table 2**  
*Sociodemographic Characteristics of Sample ( $N = 19,870$ ) Stratified by CSBD Risk*

Variable	Not at risk ( $n = 19,378$ )	At risk ( $n = 438$ )	Test	$p$ -value
Age ( $M, SD$ )	30.64 (10.81)	28.36 (9.98)	$t$ test	< .001
Sex assigned at birth, $n$ (%)			$\chi^2$	.004
Male	265 (1.4)	14 (3.2)		
Female	19,112 (98.6)	424 (96.8)		
Gender identity			–	–
Feminine/Woman	19,378	438		
Trans identity*			$\chi^2$	.007
Not trans	19,060 (98.4)	417 (95.2)		
Trans	148 (0.7)	8 (1.8)		
Other/Don't know	164 (0.9)	13 (2.9)		
Sexual orientation			$\chi^2$	< .001
Heterosexual	12,677 (65.4)	196 (44.7)		
Gay/Lesbian	575 (3.0)	10 (2.3)		
Heteroflexible	1,596 (8.2)	53 (12.1)		
Homoflexible	45 (0.2)	3 (0.7)		
Bisexual	2,435 (12.6)	114 (26.0)		
Queer	266 (1.4)	6 (1.4)		
Pansexual	644 (3.3)	30 (6.8)		
Asexual	360 (1.9)	1 (0.2)		
Questioning/Other	759 (4.9)	25 (4.3)		
			$\chi^2$	< .001

Education				
Elementary school	154 (0.8)	6 (1.4)		
High school	4,302 (22.2)	132 (30.1)		
Post-secondary	14,918 (77.0)	300 (68.5)		
Student status			$\chi^2$	.002
Not studying	11,042 (57.0)	213 (48.6)		
Currently studying	8,330 (43.0)	225 (51.3)		
Employment status			$\chi^2$	.30
Employed full-time	9,146 (47.2)	187 (42.7)		
Employed part-time	3,905 (20.2)	98 (22.4)		
Employed occasionally	1,646 (8.5)	38 (8.7)		
Unemployed	4,679 (24.1)	115 (26.3)		
Ethnic minority			$\chi^2$	< .001
Yes	1,409 (7.3)	56 (12.8)		
No	17,962 (92.7)	1,409 (87.2)		
Life circumstances			$\chi^2$	< .001
Low SES	954 (4.9)	63 (14.4)		
Average SES	6,067 (31.3)	149 (34.0)		
High SES	12,357 (63.8)	226 (51.6)		
Relationship status			$\chi^2$	.002
Single	6,040 (31.2)	173 (39.5)		
In a relationship	8,120 (41.9)	173 (39.5)		
Married/common-law	4,590 (23.7)	74 (16.9)		
Widowed/widower	94 (0.5)	3 (0.7)		
Divorced	529 (2.7)	14 (3.2)		
Number of children			$\chi^2$	.42
None	14,565 (75.2)	335 (76.5)		
1–2	3,777 (19.8)	73 (16.7)		
3–5	963 (4.9)	28 (6.4)		
6 or more	25 (0.1)	1 (0.2)		

*Note.* Age is presented as mean (standard deviation). All other variables are presented as  $n$  (%), based on available data for each variable; percentages may not sum to 100 due to rounding or missing data (e.g., N/A, don't know, refuse to answer). Group comparisons were conducted using Welch's  $t$  test for age and chi-square tests with Monte Carlo-simulated  $p$  values (10,000 iterations) for categorical variables. Inferential tests were not conducted for variables with insufficient variability across groups (e.g., gender). Due to substantial group size imbalance, statistically significant differences should be interpreted with caution.

## **Factor Analyses**

Factor analysis is essential before conducting substantive analyses, as it provides structural evidence for construct validity (Tavakol & Wetzel, 2020). Confirmatory factor analysis (CFA) is more appropriate when there are a priori expectations about factor structure, whereas EFA is more useful when establishing measures (Henson & Roberts, 2006; Kline, 2023). Thus, I conducted CFAs on all measures and subscales, with the exception of the RAS-1, as it consists of only one question; a minimum of three items are needed for factor analysis.

### ***Compulsive Sexual Behavior Disorder Scale (CSBD-19)***

First, a confirmatory factor analysis (CFA) was conducted to test whether the established five-factor structure of the CSBD-19 (Böthe et al., 2023) could be replicated in this subsample of women. Overall model fit according to traditional fit indices (see Hu & Bentler, 1998) was mixed,  $\chi^2(142) = 13,590.40, p < .001$ , with incremental fit indices approaching recommended thresholds (CFI = .896; TLI = .875) and acceptable to good absolute fit (RMSEA = .070, SRMR = .055). Given the large sample size, the chi-square test was expected to be statistically significant; therefore, model evaluation focused primarily on approximate and incremental fit indices. Standardized factor loadings were moderate to strong across dimensions (F1: .53–.71; F2: .57–.66; F3: .55–.72; F4: .72–.89; F5: .53–.69), and item-level  $R^2$  values ranged from .28 to .79. Latent factors were positively correlated ( $r_s = .21$ –.83), with the strongest associations observed among F1, F2, and F3. Overall, items loaded cleanly on five factors, and strong

interfactor correlations suggested the presence of substantial shared variance consistent with a potential higher-order latent construct.

To explore this possibility, I conducted a second-order CFA examining whether the five first-order CSBD-19 factors loaded onto a single higher-order CSBD factor. The hierarchical model demonstrated acceptable absolute fit to the data,  $\chi^2(147) = 15,956.91, p < .001$ , RMSEA = .074 (acceptable fit), SRMR = .069 (good fit), though incremental fit indices were slightly lower than those observed in the correlated five-factor model (CFI = .878; TLI = .858), and the Akaike Information Criterion increased (AIC = 710 961.47 vs. 708 604.96), indicated reduced relative fit. However, the change in RMSEA between models was small ( $\Delta$ RMSEA = .004), indicating good fit, suggesting that the hierarchical model provided an adequate representation of the data. Four of the five CSBD-19 dimensions (F1–F3, F5) loaded strongly onto the higher-order CSBD factor (standardized loadings = .73–.98), indicating substantial shared variance across domains. One dimension (F4) exhibited a comparatively weaker but statistically significant loading (.35), suggesting that this factor retains a greater degree of domain-specific variance not fully captured by overall CSBD severity. Nevertheless, the presence of a well-defined higher-order factor and consistently strong loadings across the remaining factors support the use of the CSBD-19 sum score as measuring a general CSB construct (while still retaining meaningful dimensionality).

Finally, with respect to scale reliability for this sample, the CSBD-19 was good ( $\alpha = .88$ ) to excellent ( $\omega = .91$ ), which was similar to the Cronbach's alpha and McDonald's omega values reported in previous studies (.90 in Bóthe et al., 2023; .90 in Vaillancourt-Morel et al., 2025).

### ***Arizona Sexual Experience Scale (ASEX)***

Given that the ASEX has been validated primarily as a unidimensional screening measure (e.g., Ballester-Arnal et al., 2024; McGahuey et al., 2000; Sánchez Fuentes et al., 2019; Sierra et al., 2023), I first conducted a one-factor CFA. This model demonstrated very poor fit to the data,

$\chi^2(5) = 7,247.41, p < .001, CFI = .756, TLI = .511, RMSEA = .272, 90\% CI [.266, .277], SRMR = .111$ . The RMSEA far exceeded conventional cutoffs for acceptable fit, and both the CFI and TLI fell well below recommended thresholds, indicating that a strictly unidimensional structure did not adequately represent the data in the present sample.

In light of this issue, I subsequently tested a two-factor model. This approach was consistent with emerging evidence suggesting that the ASEX may exhibit a multidimensional structure in some samples (e.g., Jannini et al., 2022). In the present sample, the two-factor model—comprising items 1–3 (Desire/Arousal) and items 4–5 (Orgasm)—demonstrated acceptable-to-good fit,  $\chi^2(4) = 604.23, p < .001; CFI = .980; TLI = .949; SRMR = .033; RMSEA = .087, 90\% CI [.082, .093]$ . Although the RMSEA slightly exceeded conventional cutoffs for good fit, all other indices indicated good overall model fit. All standardized factor loadings were statistically significant ( $ps < .001$ ) and ranged from .612 to .895. The two latent factors were moderately correlated ( $r = .48$ ), indicating substantial shared variance.

Despite evidence that a multidimensional structure fit the data better than a one-factor model in this sample, the ASEX total score was retained for subsequent analyses, consistent with the measure's original design as a brief screening instrument, its predominant use as a summed score in prior research, and the present study's focus on global sexual dysfunction severity. Internal consistency for the total score was acceptable to good ( $\alpha = .77; \omega_t = .85$ ), comparable to recent validation work using the same dataset (Ballester-Arnal et al., 2024) and slightly lower than in earlier studies (e.g.,  $\alpha = .91$ ; McGahuey et al., 2000). Reliability estimates for the two factors were more variable; the larger subscale demonstrated adequate reliability ( $\omega_t = .51$ ), whereas the smaller subscale showed higher reliability ( $\omega_t = .74$ ). Reliability indices further indicated substantial shared variance across items ( $\omega_h = .74; ECV = .91$ ), suggesting that a general dysfunction factor captures much of the common variance. Thus, results using the ASEX

total score should be interpreted as reflecting overall sexual dysfunction severity, with this limitation in mind<sup>6</sup>.

### ***Sexual Desire Inventory (SDI-2)***

The original Sexual Desire Inventory (SDI; Spector et al., 1996) was based on two dimensions of sexual desire—dyadic versus solitary—but more recent studies indicate that dyadic desire can be further split into two subcomponents (Moyano et al., 2017). Thus, I conducted a CFA to evaluate the fit of a three-factor model for 13 items<sup>7</sup> of the SDI scale, comprising partner-focused dyadic desire, dyadic desire for another person, and solitary desire.

The three-factor model demonstrated mixed fit,  $\chi^2(62) = 14,963.34, p < .001, CFI = .906, TLI = .882, RMSEA = .111, 90\% CI [.109, .112],$  and SRMR = .053. The SRMR demonstrated good fit, the CFI was acceptable, and RMSEA and TLI indicated poor fit according to a priori criteria. Given the large sample size, chi-square was interpreted with caution as it is not a good measure of fit. All standardized factor loadings were statistically significant ( $ps < .001$ ) and ranged from .605 to .911, indicating that items were meaningfully associated with their intended latent dimensions. The three latent factors were moderately intercorrelated ( $rs = .42-.45$ ), suggesting substantial shared variance among desire dimensions.

To evaluate whether more parsimonious structures could account for the data, alternative models were also tested. A two-factor model reflecting the original dyadic versus solitary distinction fit the data more poorly than the three-factor model ( $CFI = .812, RMSEA = .154,$

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<sup>6</sup> These factor analyses highlight a common but underexamined issue in social science research: scales that are routinely analyzed using summed scores often demonstrate multidimensional structure when formally tested. In the present study, factor analytic results indicated that neither the ASEX nor the SDI-2 functioned as strictly unidimensional measures in this sample, despite their widespread use as total scores in the literature.

<sup>7</sup> As in prior validation studies, Item 14 was not included in the three-factor CFA because it does not map onto any of the SDI-2 desire dimensions, but rather refers to the length of time an individual can go without engaging in any sexual activity. However, because this item reflects overall strength of sexual desire, it was retained for the one-factor CFA and included in the total SDI-2 sum score. One-factor models specifying either 13 or 14 SDI items demonstrated extremely poor fit; excluding SDI14 did not meaningfully improve model fit.

SRMR = .093), indicating that collapsing dyadic desire into a single dimension resulted in a meaningful loss of structural information. A one-factor CFA was also tested to evaluate whether sexual desire could be represented as a unidimensional construct. This model demonstrated very poor fit (CFI = .552, RMSEA = .221, SRMR = .145) and fit substantially worse than the three-factor model across all indices ( $\Delta\text{CFI} = .354$ ;  $\Delta\text{RMSEA} = .110$ ). Consistent with this pattern, the one-factor model also showed markedly poorer relative fit according to information criteria (larger AIC). Together, these findings support the multidimensional structure of the SDI-2, particularly when distinctions between desire types are theoretically relevant.

At the same time, the moderate intercorrelations among factors and strong internal consistency estimates for the total score ( $\alpha = .89$ ;  $\omega = .93$ ) indicate substantial shared variance across desire dimensions. Although the CFA results do not support a strictly unidimensional structure in this sample, the SDI-2 total score was retained in selected analyses where the research question concerned overall level of sexual desire rather than desire type, and to facilitate comparability with prior research in which the SDI-2 is most often analyzed using a summed score (e.g., Moyano et al., 2017; Castro-Calvo et al., 2024b). Thus, this decision reflected a pragmatic analytic choice rather than a claim of unidimensionality. Accordingly, SDI-2 subscale scores were used in analyses examining distinct desire types, whereas the total score was used in mediation and moderation models assessing overall desire intensity. Results based on the total score should therefore be interpreted with the recognition that this approach obscures meaningful distinctions among desire dimensions (see Footnote 6).

### ***Sexual Distress Scale (SDS-3)***

A CFA was conducted to evaluate the fit of a unidimensional model for the SDS-3 scale, comprising three items (the minimum for factor analysis). The model was just-identified ( $df = 0$ ), preventing assessment through a  $\chi^2$  test of model fit (not an issue due to sample size). However,

alternative fit indices indicated perfect model fit, with both the CFI and TLI equal to 1.000, and the SRMR at 0.000. The RMSEA was also 0.000, though confidence intervals and p-values were not reported due to the model's just-identified nature. Standardized factor loadings ranged from .751 to .827, and item  $R^2$  values ranged from .565 to .684, indicating moderate to strong factor saturation. These findings support the adequacy of a unidimensional structure for the SDS-3 scale. The scale also displayed good reliability ( $\alpha = .83$ ;  $\omega = .83$ ); values were almost identical to those reported in a recent validation study on the entire sample (Lin et al., 2024).

### ***Short UPPS-P Impulsivity Scale (UPPS-P)***

I conducted a CFA to evaluate a unidimensional model for the four-item UPPS Sensation-Seeking subscale (comprised of items 3, 9, 14, and 18). The model was over-identified ( $df = 2$ ); as expected with such a large sample, the chi-square test was significant,  $\chi^2(2) = 574.27$ ,  $p < .001$ . Alternative fit indices indicated adequate-to-good fit, CFI = .975, TLI = .924, and SRMR = .028. The RMSEA indicated poor fit (RMSEA = .120, 90% CI [.112, .128]); however, model fit was evaluated holistically, so RMSEA was interpreted alongside other fit indices. Standardized factor loadings were .66–.73, with item  $R^2$  values of .43–.54. This pattern of strong, uniform loadings justified treating the subscale as unidimensional; further, use of a total score for subsequent analyses was justified. Consistent with these results, reliability of the total subscale was acceptable to good ( $\alpha = .79$ ,  $\omega_{total} = .83$ ).

### ***Global Measure of Sexual Satisfaction (GMSEX)***

Lastly, a CFA was conducted to test a unidimensional model of the GMSEX scale, with all five items loading onto a single latent factor. The model demonstrated excellent standardized loadings (range = .859–.934), and all estimates were statistically significant ( $p < .001$ ). The CFI (.991) and TLI (.981) indicated excellent fit, and the SRMR (.011) was below the recommended cutoff, supporting model adequacy. However, the RMSEA (.102, 90% CI [.095, .108])

displayed poor fit, whereas  $R^2$  values ranged from .738 to .872, suggesting good fit. Finally, with respect to scale reliability, the GMSEX was excellent ( $\alpha = .96$ ;  $\omega = .96$ ); values were identical to those reported in a previous validation study on the entire sample (Paquette et al., 2025).

### ***Brief Symptom Inventory (BSI-18)***

For this well-established scale, I conducted a CFA using the lavaan package (Rosseel, 2012) in R (R Core Team, 2025) to test a two-factor model of the BSI Anxiety and Depression subscales (items 1–6 and 7–12, respectively). The model demonstrated acceptable to good fit:  $\chi^2(53) = 6,259.17, p < .001$ , CFI = .948, TLI = .935, RMSEA = .080, 90% CI [.078, .082], and SRMR = .033. All standardized factor loadings were statistically significant and ranged from .635 to .816, supporting the intended two-factor structure. The two latent factors were strongly correlated ( $r = .75, p < .001$ ), indicating substantial shared variance. Given this very high correlation, a one-factor CFA was also tested to evaluate the plausibility of anxiety and depression being represented as a single construct (despite being separate phenomena clinically). However, the one-factor model demonstrated poor fit (CFI = .837, TLI = .801, RMSEA = .140, 90% CI [.139, .142], SRMR = .070), whereas the two-factor model showed substantially better fit. The large change in incremental fit ( $\Delta\text{CFI} = .111$ ) and increase in RMSEA ( $\Delta\text{RMSEA} = .060$ ) far exceeded recommended thresholds for model equivalence in large samples, indicating that collapsing the two factors resulted in a meaningful degradation of model fit. Consistent with this pattern, the two-factor model also showed a smaller AIC, indicating superior relative fit. Together, these findings support conceptualizing anxiety and depression as related but distinct constructs. Accordingly, subsequent analyses treated the two subscales as separate predictors entered simultaneously to partition shared and unique variance.

With respect to reliability in this sample, overall it was excellent ( $\alpha = .92$ ;  $\omega = .94$ ), comparable to prior reports (e.g., .93 in Derogatis et al., 2000;  $\alpha = .93$ , Franke et al., 2017; .90 in

Wiesner et al., 2010). Internal consistency was also good for both subscales (Anxiety:  $\alpha = .88$ ,  $\omega = .88$ ; Depression:  $\alpha = .88$ ,  $\omega = .88$ ), similar to values reported in previous psychometric studies (Anxiety  $\alpha = .84$ , Depression  $\alpha = .87$ ; Franke et al., 2017).

### Descriptive Statistics

Next, descriptive statistics were conducted to examine the parameters of this ISS subsample; see Table 3.

**Table 3**  
*Descriptive Statistics for Study Variables*

Variable	Measure	Range	<i>M</i>	<i>SD</i>
Compulsive sexual behaviour	CSBD-19	19–76	28.06	7.96
Sexual desire	SDI-2	0–109	57.78	19.01
Sexual function	ASEX	5–30	14.66	4.23
Sexual distress	SDS-3	0–12	3.20	2.67
Sensation-seeking	UPPS-P	4–16	9.56	2.70
Sexual satisfaction	GMSEX	5–35	28.47	7.47
Relationship satisfaction	RAS-1	1–5	4.25	0.93
Depression	BSI-18	0–24	6.89	5.88
Anxiety	BSI-18	0–24	7.28	5.65

*Note.* *M* = Mean; *SD* = Standard Deviation

With respect to prevalence of concerns (see Table 4), of the approximately 19,870 women in the sample, about 2% met or exceeded the clinical cutoff for compulsive sexual behaviour (similar to the percentage of women in the entire sample, Bóthe et al., 2023). In terms of other sexual concerns, approximately 16% of the sample met the threshold for sexual dysfunction, and around 21% reported clinically significant sexual distress. Given the absence of

established clinical cutoffs for the SDI-2 (see Method), high sexual desire was operationalized as scores at or above the 90th percentile ( $\geq 81$ ), representing the upper 10% of desire scores ( $n = 1,999$ ). Sensation-seeking was elevated in roughly 13% of participants. About a third scored in the top quartile for sexual satisfaction, and almost half reported being “very satisfied” in their romantic relationship. Rates of clinically elevated depression and anxiety, using updated BSI-18 clinical cutoffs for women (Grassi et al., 2018), were evident in about a quarter of the sample.

**Table 4**

*Percentage of Sample Meeting Clinical or Distributional Cutoffs (N = 19,870)*

Variable	Cutoff criteria	% Above cutoff
Compulsive sexual behaviour (CSBD-19)	Clinical cutoff ( $\geq 50$ )	2.21%
Sexual dysfunction (ASEX)	$\geq 19$ (1 SD above mean)	16.38%
Sexual desire (SDI-2)	$\geq 81$ (90 <sup>th</sup> percentile cutoff) <sup>8</sup>	10.06%
Sexual distress (SDS-3)	Clinical cutoff ( $\geq 6$ )	20.80%
Sensation-seeking (UPPS-P)	$\geq 13$ (1 SD above mean)	12.84%
Sexual satisfaction (GMSEX)	$\geq 34$ (top quartile)	29.95%
Relationship satisfaction (RAS-1)	Score = 5 (“very satisfied”)	49.43%
Depression (BSI-18)	Clinical cutoff ( $\geq 12$ )	21.86%
Anxiety (BSI-18)	Clinical cutoff ( $\geq 12$ )	22.98%

## Inferential Analyses

### *Relationships Between Variables of Interest*

Before proceeding with the substantive analyses, I examined zero-order correlations between CSB and the other study variables to provide a descriptive overview of their bivariate

<sup>8</sup> Sensitivity analyses using alternative distribution-based thresholds ( $\geq 1$  and  $\geq 1.3$  SD above the mean) yielded similar findings (approximately the top 15% and 9% of the sample, respectively), indicating that results were robust to the choice of cutoff.

associations (see Table 5). CSB was significantly and positively associated with depression, anxiety, sexual desire, sexual distress, and sensation-seeking, and significantly and negatively associated with sexual function, sexual satisfaction, and relationship satisfaction.

**Table 5**  
*Zero-Order Correlations Between CSB and Study Variables*

Variable	<i>r</i> with CSB
Sexual desire	.33***
Sexual distress	.33***
Depression	.25***
Sensation-seeking	.24***
Anxiety	.23***
Relationship satisfaction	-.20***
Sexual satisfaction	-.14***
Sexual function	-.11***

*Note.* \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

I then conducted a multiple regression to examine the joint contribution of the main study variables to CSB (see Table 6). The overall model was significant,  $F(8, 11,733) = 532.40$ ,  $p < .001$ , and accounted for approximately 26.6% of the variance in CSBD scores ( $R^2 = .266$ ), considered a large effect (Cohen, 1988). The largest effects were observed for sexual desire and sexual distress, followed by sensation-seeking, whereas depression, anxiety, sexual satisfaction, and relationship satisfaction showed comparatively weaker associations.

**Table 6***Multiple Regression Predicting CSBD Symptoms from Study Variables*

Predictor	<i>b</i>	<i>SE</i>	$\beta$	<i>t</i>	<i>p</i>
Sexual function	0.00	0.02	0.00	0.13	.893
Sexual desire	0.12	0.00	0.28	28.21	<.001
Sexual distress	0.73	0.03	0.25	28.04	<.001
Sensation-seeking	0.44	0.02	0.15	18.79	<.001
Sexual satisfaction	-0.05	0.01	-0.05	-5.67	<.001
Relationship satisfaction	-0.65	0.08	-0.08	-8.65	<.001
Depression	0.14	0.02	0.11	9.43	<.001
Anxiety	0.06	0.01	0.05	4.36	<.001

*Note.* CSBD-19 sum scores were entered as the dependent variable. All predictors were entered simultaneously. *b* = unstandardized coefficients;  $\beta$  = standardized coefficients. Overall model:  $F(8, 11,733) = 532.40, p < .001$ ;  $R^2 = .266$  (Adjusted  $R^2 = .266$ ).

### ***Hypothesis Testing***

**Research Question 1.** I examined whether women at risk of CSB differed significantly from women not at risk in terms of sexual function (H1a), sexual desire (H1b), sexual distress (H1d), sensation-seeking (H1d), and sexual and relationship satisfaction (H1d). Additionally, among women in the at-risk group, I proposed that their dyadic desire would be stronger than solitary desire, in particular for attractive others (H1c).

***Hypothesis 1a.*** The hypothesis concerning whether women at risk of CSB have better sexual function but tend to have less satisfying orgasms was only partially supported. Using a Welch's *t* test<sup>9</sup>, sexual functioning scores were significantly lower in women at risk of CSB ( $M =$

<sup>9</sup> *Note:* Independent-samples *t* tests were conducted using Welch's correction for unequal variances, which yields non-integer degrees of freedom based on the Welch-Satterthwaite equation (see Welch, 1947).

12.91,  $SD = 4.08$ ) than women not at risk ( $M = 14.70$ ,  $SD = 4.21$ ),  $t(455.11) = 9.03$ ,  $p < .001$ , 95% CI [1.40, 2.18],  $d = 0.43$ , 95% CI [0.33, 0.52] (small-to-medium effect<sup>10</sup>). However, the groups did not differ significantly with respect to orgasm satisfaction<sup>11</sup>,  $t(441.62) = -0.97$ ,  $p = .33$ , 95% CI [-0.18, 0.06],  $d = -0.05$ , 95% CI [-0.14, 0.05] (negligible effect).

**Hypothesis 1b.** Further, I predicted that higher sexual desire would be present in women at risk of CSB, and found a significant, moderate, positive correlation,  $r(19,807) = .33$ ,  $p < .001$ , 95% CI [.32, .34], indicating that higher levels of sexual desire were associated with greater CSB severity. Consistent with this pattern, women at risk of CSB reported significantly higher sexual desire ( $M = 75.46$ ,  $SD = 17.54$ ) than women in the non-risk group ( $M = 57.43$ ,  $SD = 18.80$ ),  $t(460) = -21.25$ ,  $p < .001$ , 95% CI [-19.70, -16.37],  $d = -0.96$ , 95% CI [-1.06, -0.87], a large effect.

**Hypothesis 1c.** A planned linear contrast tested whether sexual desire among women at risk of CSB was strongest for attractive others, followed by known partners, and lowest for solitary activity. Contrary to prediction, the linear contrast was significant in the opposite direction,  $t(436) = 28.03$ ,  $p < .001$ ,  $d_z = 1.34$ , indicating a large effect. Estimated sexual desire was highest for partners ( $M = 41.42$ ,  $SE = 0.46$ ), followed by solitary activity ( $M = 20.39$ ,  $SE = 0.39$ ), and lowest for attractive others ( $M = 9.55$ ,  $SE = 0.20$ ). A significant quadratic component further supported a curvilinear pattern,  $t(436) = 62.78$ ,  $p < .001$ ,  $d_z = 3.00$ , reflecting a very large effect, with partner-related desire markedly exceeding both solitary and attractive-other desire. Thus, the hypothesis that women at risk of CSB would report the strongest desire toward attractive others was not supported.

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<sup>10</sup> Note: Cohen's  $d$  values are reported with their original sign to indicate the direction of the group difference, with magnitude interpreted according to Cohen's (1988) guidelines (small  $\approx 0.20$ , medium  $\approx 0.50$ , large  $\approx 0.80$ ).

<sup>11</sup> The ASEX total score was used to measure global sexual functioning, while the orgasm item was examined separately to assess subjective orgasm quality.

**Hypothesis 1d.** A mixed repeated-measures ANOVA examined whether the pattern of sexual distress, sexual satisfaction, and relationship satisfaction differed by CSB risk group. The Outcome  $\times$  CSB group interaction was significant,  $F(2, 25,538) = 88.10, p < .001, \eta^2(G) = .005$ , indicating that the pattern of scores across outcomes varied between groups.

Bonferroni-adjusted simple effects analyses revealed that women at risk of CSB reported significantly higher sexual distress ( $M = 5.86, SE = 0.30$ ) than women not at risk ( $M = 3.06, SE = 0.04$ ), as well as significantly lower sexual satisfaction ( $M = 25.63, SE = 0.30$  vs.  $M = 28.53, SE = 0.04$ ) and relationship satisfaction ( $M = 3.63, SE = 0.30$  vs.  $M = 4.27, SE = 0.04$ ), all  $ps < .001$ .

The main effect of CSB group was not significant,  $F(1, 12,769) = 2.29, p = .13, \eta^2(G) < .001$ . The main effect of Outcome was significant,  $F(2, 25,538) = 1.16 \times 10^5, p < .001, \eta^2(G) = .86$ ; however, this effect is interpreted in light of the significant interaction.

With respect to sensation-seeking, women at risk of CSB ( $M = 11.61, SD = 2.51$ ) reported significantly higher scores than women not at risk ( $M = 9.51, SD = 2.68$ ),  $t(459.85) = 17.30, p < .001, d = 0.78$ , indicating a medium-to-large effect. Taken together, these findings indicate that women at risk of CSB report higher sexual distress and sensation-seeking, along with lower sexual and relationship satisfaction, relative to women not at risk.

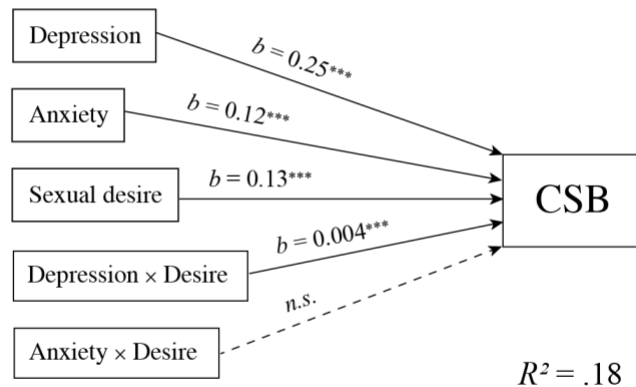
**Research Question 2.** Second, I investigated whether the association between high desire and CSB in women was moderated by depression and/or anxiety (RQ2).

**Hypothesis 2a.** To test whether the correlation between depression and CSBD symptoms ( $r = .25$ ) was significantly stronger than between anxiety and CSBD symptoms ( $r = .23$ ), I conducted a statistical comparison using the cocor package (Diedenhofen & Musch, 2015) for dependent overlapping correlations. Depressive symptoms were significantly more strongly associated with CSBD symptoms than were anxiety symptoms in this sample ( $z = 3.71, p = .0002, 95\% CI [.0094, .0306]$ ).

**Hypothesis 2b.** I conducted a moderated regression analysis to examine whether depressive and anxiety symptoms jointly moderated the association between sexual desire and CSBD symptoms, given their high intercorrelation and shared measurement within the BSI. All predictors were mean-centered prior to analysis, and simple slopes were probed at clinically significant levels ( $BSI \geq 12$ ; see Method). The overall model was significant,  $F(5, 18,291) = 781.20, p < .001$ , adjusted  $R^2 = .18$ , and explained 18% of the variance in CSBD symptoms.

The interaction between sexual desire and depression was significant ( $b = 0.004, SE = 0.001, t = 6.51, p < .001$ ), whereas the interaction between sexual desire and anxiety was not ( $b = 0.001, SE = 0.001, t = 0.91, p = .364$ ); see Figure 4. This pattern remained unchanged when demographic covariates (age, sexual orientation, education, ethnic minority status, and socioeconomic status) were included in the model.

**Figure 4**  
*Moderation Results for Sexual Desire Predicting CSB*



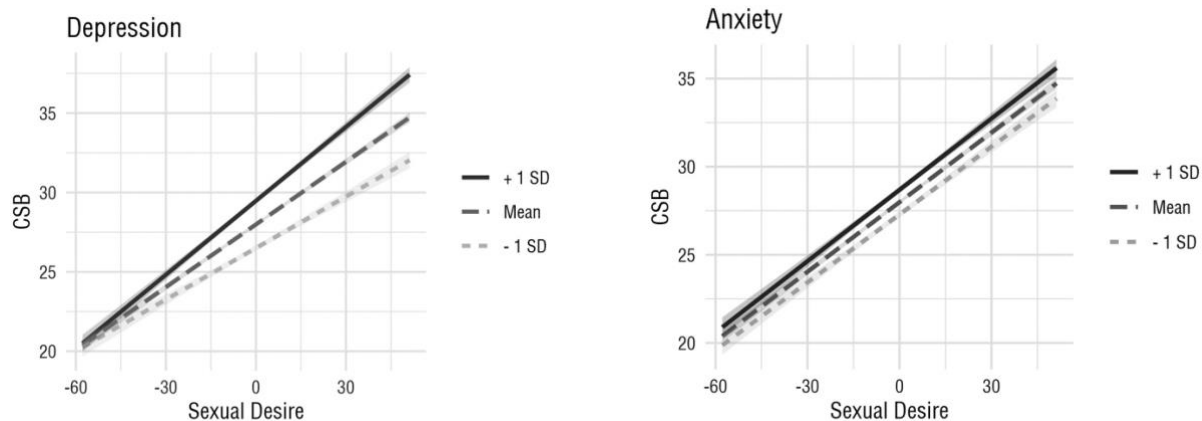
Note. \*\*\* $p < .001$ , n.s. = non-significant.  
Coefficients are unstandardized ( $b$ ); predictors are mean-centered.  
Paths reflect partial effects controlling for the other predictors and interactions.

To probe the depression interaction, simple slopes were examined at  $\pm 1$  SD, the mean, and the clinical cutoff of  $BSI \geq 12$  (see Figure 5). The effect of sexual desire on CSB was significant at low ( $-1$  SD;  $b = 0.11, p < .001$ ), mean ( $b = 0.13, p < .001$ ), high ( $+1$  SD;  $b = 0.16, p < .001$ ), and clinically significant ( $b = 0.15, p < .001$ ) levels of depression, with stronger effects observed at higher depression. Johnson–Neyman analysis confirmed that the effect of sexual desire on CSB was significant across the entire observed range of depression.

In contrast, the Sexual Desire  $\times$  Anxiety interaction was not significant, indicating that the association between sexual desire and CSB did not differ as a function of anxiety (all simple slopes  $bs \approx 0.13, ps < .001$ ).

**Figure 5**

*Simple Slopes for Sexual Desire–CSB Moderation*



*Note.* Simple slopes for the relationship between sexual desire and CSB, moderated by anxiety and depression.

In sum, sexual desire, and symptoms of depression and anxiety were all positively associated with CSBD symptoms. However, only depression moderated the association between sexual desire and CSB, indicating that depression symptoms—but not anxiety symptoms—amplified the strength of this relationship in women.

**Research Question 3.** This final analysis examined whether sexual desire mediated the relationship between depressive and CSBD symptoms in women. That is, whether the association between depression and CSB might be partly explained by elevated sexual desire.

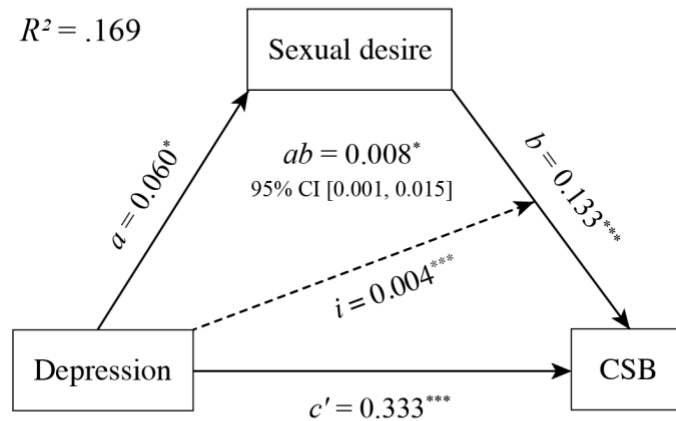
**Hypothesis 3a.** First, I examined the proportion of women in the sample for whom depression was associated with elevated sexual desire. Of the 4,012 women in the sample who met criteria for clinically significant depression ( $BSI \geq 12$ ), 483 (12%) also reported high desire ( $SDI-2 \geq 81$ ). These results indicate that elevated sexual desire co-occurred with clinically relevant depression for a small, though noteworthy, proportion of women in the sample.

**Hypothesis 3b.** A conditional mediation model was tested in which sexual desire mediated the association between depressive and CSBD symptoms, while depressive symptoms also moderated the sexual desire–CSB association (see Figure 6). Depression was positively associated with sexual desire ( $a = 0.060$ ,  $SE = 0.025$ ,  $p = .018$ ), and sexual desire was positively associated with CSB at the mean level of depression ( $b = 0.133$ ,  $SE = 0.003$ ,  $p < .001$ ). Depression significantly moderated the association between sexual desire and CSB ( $b = 0.004$ ,  $SE = 0.001$ ,  $p < .001$ ), such that the association was stronger at higher levels of depression.

The indirect effect of depression on CSB through sexual desire was small but statistically significant based on percentile bootstrap confidence intervals ( $ab = 0.008$ , 95% CI [0.001, 0.015]). The direct effect of depression on CSB remained significant ( $c' = 0.333$ ,  $SE = 0.010$ ,  $p < .001$ ), indicating that sexual desire accounted for only a portion of the association between depression and CSB. The overall model accounted for approximately 17% of the variance in CSBD symptoms ( $R^2 = .169$ ). Together, these findings indicate that sexual desire represents one pathway linking depression and CSB, with evidence that depressive symptoms strengthen the association between sexual desire and CSB.

**Figure 6**

*Conditional Mediation Results for Sexual Desire  
as Mediator of Depression–CSB Link*



Note.  $*p < .05$ ,  $**p < .01$ ,  $***p < .001$

Coefficients are unstandardized ( $b$ ). Indirect effects were estimated using percentile bootstrap confidence intervals. The  $b$  path reflects the conditional effect at the mean level of depression.

**Hypothesis 3c.** In a pre-determined exploratory analysis, I reversed the hypothesized predictor and mediator in the  $a$  path—testing sexual desire as the predictor and depression as the mediator—to see if it would yield different results. Although the estimated indirect effect was small ( $ab = 0.002$ ), the 95% percentile bootstrap confidence interval included zero [0.000, 0.003], indicating that the indirect effect was not statistically significant.

Direct effects on CSB were significantly smaller in the reversed model ( $b = 0.137$ ,  $p < .001$ ) than in the original model in which depression was specified as the predictor ( $b = 0.340$ ,  $p < .001$ ). A bootstrap comparison further showed that the direct effect of depression on CSB (controlling for sexual desire) exceeded the direct effect of sexual desire on CSB (controlling for depression),  $\Delta c' = 0.197$ , 95% CI [0.176, 0.217]. A bootstrap comparison of indirect effects likewise indicated that the indirect effect in the original mediation model was significantly larger

than the indirect effect in the reversed model, as the 95% percentile confidence interval for their difference did not include zero [0.001, 0.011].

Together, these findings provide weaker support for the reversed model and favour the original conceptualization in which depressive symptoms precede sexual desire in their association with CSB. Though Thoemmes (2015b) strongly recommends against comparing mediation models by reversing arrows, he states that decisions about which are more explanatory should be guided by theory. In light of this, the original model (depression → sexual desire → CSB) aligns more closely with existing literature. As this approach cannot establish causal ordering when models are equivalent (Thoemmes, 2015b), these results are reported descriptively and will not be prioritized for interpretation.

To more rigorously evaluate the directional plausibility of the mediation model in H3b, I employed direction dependence analysis (DDA), a statistical technique designed to test the likely causal ordering of variables when temporal precedence cannot be directly established (Wiedermann & von Eye, 2015). Unlike simple reversal of mediation paths, DDA evaluates the indirect pathways of interest separately. The first step uses linear regression to test the directionality of *a* and *b* path models separately. The *a* path model assesses the direction of the relationship between the hypothesized predictor and mediator based on their higher-moment coefficients (i.e., skewness and kurtosis), without including the outcome variable. The second model tests the *b* path, evaluating the direction of the relationship between the mediator and outcome while statistically controlling for the predictor. This approach allows for an assessment of the preferred direction of the predictor–mediator ( $X \rightarrow M$ ) and mediator–outcome ( $M \rightarrow Y$ ) relationships, independent of the direct effect (*c'* path). The second stage of DDA involves conducting three statistical tests on each path: (1) a predictor–residual independence test, which examines whether the predictor is statistically independent from the residuals of the outcome; (2)

a residual distribution asymmetry test, which assesses asymmetry in the residual distribution; and (3) a variable distribution asymmetry test, which evaluates asymmetry in the predictor's distribution. These tests are designed to determine whether the observed higher-moment structure of the variables is more consistent with one directional ordering than the reverse. Although non-normality is permissible in DDA, the method assumes that distributions are not excessively skewed (Wiedermann et al., 2021).

For the first step in the DDA, I used the *dda* package (Wiedermann & Hirni, 2025) in R to evaluate the directional plausibility of the hypothesized mediation model (H3b) by comparing competing regression specifications, rather than estimating mediation effects directly. To assess the *a* path in the hypothesized direction, depressive symptoms were regressed onto sexual desire. Depressive symptoms significantly predicted sexual desire,  $b = 0.059$ ,  $SE = 0.024$ ,  $t(18,343) = 2.46$ ,  $p = .014$ , 95% CI [0.012, 0.106], although the variance explained was negligible ( $R^2 = .0003$ ).

To assess the directional plausibility of the *b* path, consistent with the DDA framework, sexual desire was regressed simultaneously on CSBD symptoms and depressive symptoms to test whether CSB predicted sexual desire after accounting for depression. Results indicated that CSBD symptoms were a strong positive predictor of sexual desire,  $b = 0.825$ ,  $SE = 0.017$ ,  $t(18,294) = 47.89$ ,  $p < .001$ , 95% CI [0.792, 0.858], whereas depressive symptoms were a significant negative predictor,  $b = -0.221$ ,  $SE = 0.023$ ,  $t(18,294) = -9.46$ ,  $p < .001$ , 95% CI [-0.266, -0.176]. This model accounted for 11.17% of the variance in sexual desire (a medium effect; Cohen, 1988).

I then began the second stage of the DDA, which involves conducting the three statistical tests on each path. However, the analyses could not be executed because two of the three mediation variables (i.e., depression and CSB) displayed severe positive skew. The

aforementioned skewness was due to the presence of outliers (e.g., very high scores) along with a floor effect, in which a large proportion of participants scored at or near the minimum value, making the distribution appear almost binary. This level of skewness violated the distributional assumptions of DDA, as non-normality arising from outliers or floor/ceiling effects can bias results (Wiedermann et al., 2021). In particular, correlation-based measures can be affected by highly skewed or kurtotic data, producing unstable higher-moment estimates and undermining the accuracy of tests 2 and 3 (Wiedermann et al., 2021). In an attempt to address this, I applied a log transformation to both skewed variables; however, results from the *a* and *b* path regressions were almost identical to the untransformed models, with effects remaining in the same direction, statistically significant, and explaining similarly small proportions of variance (*a* path  $R^2 < 0.1\%$ , *b* path  $R^2 \approx 11\text{--}12\%$ ). As such, the log transformation did not improve distributional properties sufficiently for the analyses to run successfully. Consequently, only the first stage of the DDA could be completed. Results should be interpreted with the recognition that the additional tests, which would have provided stronger evidence for directional inference, could not be conducted.

***Hypothesis 3d.*** Finally, a moderated mediation model was tested in which sexual desire mediated the association between depression and CSB, and the association between sexual desire and CSB was simultaneously moderated by depression, sensation-seeking, sexual distress, sexual satisfaction, and relationship satisfaction. Depression was positively associated with sexual desire ( $a = 0.109$ ,  $SE = 0.031$ ,  $z = 3.57$ ,  $p < .001$ ), and sexual desire remained a significant predictor of CSB at the mean level of all moderators ( $b = 0.122$ ,  $SE = 0.004$ ,  $z = 30.07$ ,  $p < .001$ ). All five moderators significantly interacted with sexual desire<sup>12</sup>, including depression ( $b = 0.003$ ,  $SE = 0.001$ ,  $z = 3.88$ ,  $p < .001$ ), sensation-seeking ( $b = 0.013$ ,  $SE = 0.001$ ,  $z = 8.45$ ,  $p < .001$ ),

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<sup>12</sup> Although several moderators significantly interacted with sexual desire in predicting CSB, these effects did not translate into significant differences in the magnitude of the indirect effect.

sexual distress ( $b = 0.005$ ,  $SE = 0.002$ ,  $z = 3.29$ ,  $p = .001$ ), sexual satisfaction ( $b = 0.002$ ,  $SE = 0.001$ ,  $z = 3.43$ ,  $p = .001$ ), and relationship satisfaction ( $b = -0.012$ ,  $SE = 0.005$ ,  $z = -2.51$ ,  $p = .012$ ), indicating that the strength of the association between sexual desire and CSB varied as a function of these variables. The direct effect of depression on CSB remained significant ( $c' = 0.183$ ,  $SE = 0.013$ ,  $z = 14.20$ ,  $p < .001$ ), indicating that the association between depression and CSB was not fully accounted for by sexual desire. The indirect effect of depression on CSB via sexual desire at the mean level of the moderators was small ( $ab = 0.013$ ). However, the indices of moderated mediation for depression, sensation-seeking, sexual distress, sexual satisfaction, and relationship satisfaction did not provide evidence that the indirect effect differed significantly across levels of these moderators based on percentile bootstrap confidence intervals (see Table 7).

**Table 7**  
*Moderated Mediation of Depression → Sexual Desire → CSB*

Moderator	IMM ( $a \times b_3$ )	95% CI (IMM)	Interpretation
Depression	0.00033	[0.000, 0.001]	No evidence that the indirect effect differs across levels of depression.
Sexual distress	0.00109	[0.000, 0.002]	No evidence that the indirect effect differs across levels of sexual distress.
Sensation-seeking	0.00142	[0.000, 0.003]	No evidence that the indirect effect differs across levels of sensation-seeking
Sexual satisfaction	0.00022	[0.000, 0.001]	No evidence that the indirect effect differs across levels of sexual satisfaction.
Relationship satisfaction	-0.00109	[-0.003, 0.000]	No evidence that the indirect effect differs across levels of relationship satisfaction.

*Note.* IMM = Index of Moderated Mediation; IMM values reflect the product of the  $a$  path and the interaction term for each moderator. 95% confidence intervals (CI) are percentile bootstrap intervals based on 10,000 resamples.

## Chapter 4: Discussion

In the present study, I investigated various mental and sexual health correlates of CSB in Western women using a large international dataset. Specifically, I examined how CSB related to aspects of sexual wellbeing such as sexual function, desire, satisfaction, and distress, as well as sensation-seeking and mood symptoms, in a community sample of women. First, with respect to sexual function, I hypothesized that women at risk of CSB would have better sexual functioning, but that they would be less sexually satisfied; second, that they would exhibit elevated sexual desire in comparison to women not at risk; and third, that their desire would be strongest for interpersonal activity with new partners. Lastly, I hypothesized that they would report higher sexual distress, sensation-seeking, and lower sexual and relationship satisfaction. I then set out to explore the moderating role of mood, with the expectation that depression and anxiety would be positively associated with CSB, but that the effect of depression would be most pronounced. Next, I proposed that, similarly to men, depression may increase (rather than decrease) sexual desire in some women, which in turn may increase risk of CSB. Finally, the indirect pathway between sexual desire and CSB was further expected to vary depending on levels of sexual distress, sensation-seeking, and sexual and relationship satisfaction.

Supporting the study's primary hypotheses, CSBD symptoms in this sample of women were positively and linearly associated with sexual desire, sexual distress, depressive symptoms, anxiety, and sensation-seeking, whereas sexual satisfaction, relationship satisfaction, and sexual functioning were negatively associated with CSBD symptoms<sup>13</sup>. CSB showed particularly robust positive associations with both depression and anxiety.

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<sup>13</sup> Although the CSBD-19 is a multidimensional scale comprised of five factors, a hierarchical factor model supported the use of a higher-order total score. Thus, findings based on the CSBD-19 sum score reflect overall symptom severity rather than domain-specific expressions of CSBD and should be interpreted accordingly.

Moderation analyses indicated that sexual desire was positively associated with CSBD symptoms across all levels of depression, but that this association was significantly stronger at higher levels of depressive symptoms; no such moderation was observed for anxiety. Mediation analyses further showed that depression was strongly associated with CSB, with sexual desire accounting for a small but reliable portion of this relationship. Although the hypothesized affective and psychosocial variables (e.g., sensation-seeking, relationship status) moderated the association between sexual desire and CSB, these effects did not translate into meaningful differences in the indirect effect of depression on CSB via sexual desire, which remained small and statistically similar across conditions. Finally, directional analyses provided greater support for the proposed pathway in which depressive symptoms precede heightened sexual desire in their association with CSB, rather than the reverse (i.e., higher desire leading to depression, then sexual compulsivity). These findings are discussed in greater detail below.

### **Unique Participant Characteristics of Women at Risk of CSB**

Women at risk of CSB differed from those not at risk on several sociodemographic characteristics (see Table 2). Compared to women not at risk, women in the at-risk group were significantly younger and more likely to identify as bisexual or pansexual, to be single, to report ethnic minority status, and to report lower socioeconomic status. In particular, bisexual and pansexual identities were substantially more prevalent among women at risk of CSB, which aligns with prior literature suggesting that sexually compulsive women are more likely to identify as bisexual (Klein et al., 2014; Lee, 2024). Relatedly, emerging evidence suggests that minority stress experienced by ethnic or visible minority women may be associated with greater reliance on maladaptive coping strategies such as CSB, as observed in preliminary work with Black women (Anderson-Foster, 2023). The higher proportion of single women in the at-risk group likewise aligns with previous findings that being single is a stronger risk factor for sexual

compulsivity, regardless of gender (Kowaleska et al., 2022; Slavin et al., 2020a). No significant group differences were observed for employment status or number of children. However, because the at-risk and not-at-risk groups differed substantially in size, statistically significant demographic differences should be interpreted with caution, as small effects may reach significance due to the large sample size rather than reflecting meaningful group differences.

### **Prevalence of Sexual and Mental Health Correlates**

In line with rates reported for the entire ISS sample (2.42% in women, 6.46% in gender-diverse individuals, and 8.17% in men; Bóthe et al., 2023), 2.2% of women in this sample met the clinical threshold for CSBD. In addition, significant percentages of the full sample reported sexual dysfunction and sexual distress, as well as elevated rates of depression and anxiety.

Notably, among women meeting criteria for clinically significant depression, 12% also reported high sexual desire. Although nearly a third of the full sample reported high sexual satisfaction, approximately half indicated strong relationship satisfaction. Prevalence of sexual dysfunction symptoms in this dataset was lower than global estimates (around 40–50%; McCabe et al., 2016; McCool et al., 2016; Mitchell et al., 2013; Shifren et al., 2008), although at least one study in the UK found a similar prevalence rate of around 16% for lifelong FSD (Burri et al., 2011). Results from this sample were in line with sexual distress rates found across many studies (about 20–30%; Nappi et al., 2016; Shifren et al., 2008; Zheng et al., 2020). Similarly, rates of depression and anxiety found in this sample of women were sizable, they mirrored the finding that approximately one-third of American women suffer depression at some point in their lives (with a lifetime prevalence of about 25%; Brennan, 2023). And compared to current rates of depressive and anxious symptoms in the overall U.S. population (about 21% and 18%, respectively; Terlizzi & Zablotzky, 2022), rates in this sample were comparable.

## **Sexual Wellbeing and CSB Risk**

### ***Sexual Functioning***

First, I examined whether women at risk of CSB differed from women without risk in terms of sexual functioning, desire, satisfaction, and distress. Findings<sup>14</sup> largely supported my hypotheses, with a few notable exceptions. Contrary to my first hypothesis, women at risk of CSB did not report better sexual function and less satisfying orgasms than women not at risk. That is, while at-risk women's ASEX scores indeed indicated poorer sexual functioning than women not at risk, they were no less likely to find their orgasms satisfying. The first finding corresponds with recent research indicating that sexual compulsivity in women is correlated with worse sexual function (Burri, 2017; Castellini et al., 2018; Khayer et al., 2024; Štulhofer et al., 2016a), although the underlying mechanisms remain unclear. Generally unsatisfying sexual encounters, difficulties in impulse control, or internalized shame related to high sexual desire are all potential explanations for poorer sexual functioning. Protracted promiscuity is particularly stigmatized in women and associated with greater self-recrimination and fear of social judgment (Štulhofer et al., 2016a), which in turn may affect sexual function and responsiveness. Further, given that women generally report less sexual pleasure and a greater orgasm gap in casual mixed-gender sexual encounters (Conley & Klein, 2022; Piemonte et al., 2019), it is possible that women who engage in regular casual sex could eventually experience reduced sexual motivation and arousal. And although highly sexual and sexually compulsive women alike report greater sexual self-esteem and agency (Nagy et al., 2025; Štulhofer et al., 2016a), this does not necessarily translate to deriving more pleasure from sexual activity. These results challenge the assumption that hypersexuality is associated with greater ease of sexual response, instead

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<sup>14</sup> As noted above, findings based on risk-group comparisons should be interpreted cautiously due to substantial group size imbalance.

suggesting that CSB can co-occur with poorer sexual functioning. Yet, the lack of group differences in orgasm satisfaction does not align with Toates' (2022) motivation model, which suggests that individuals may engage in sexually compulsive behaviours long after their reward value has diminished. In a similar vein, some research has found that sexual satisfaction among self-proclaimed sex addicts is variable; that is, it depends on the specific behaviour undertaken, the context, and their mental state (Walton, 2018). Rather than being driven primarily by satisfaction of sexual urges, such behaviour may serve other regulatory or psychological functions. This interpretation may be particularly relevant for women, whose sexual pleasure (e.g., orgasm) is less consistently experienced than men's (Mahar et al., 2020).

### ***Sexual Desire***

In line with my hypothesis that women at risk of CSB would have higher levels of sexual desire, women in this sample reported significantly higher sexual desire than those not at risk. This link was evident in both correlation analyses and group comparisons, which revealed a moderate, positive relationship between desire and CSB risk. Thus, similar to men (Štulhofer et al., 2016b; Winters et al., 2010), sexual desire was found to have a moderate association with CSB among women. Based on more recent research indicating that sexually compulsive women also experience higher levels of arousal and desire (Khayer et al., 2024), this finding was expected and perhaps points to decreasing gender differences in the prevalence and presentation of CSB (Marchetti, 2013). These findings reinforce the conceptualization of CSB as desire dysregulation; however, without direct cross-gender comparisons, it is hard to ascertain whether heightened sexual desire is a more common feature in CSB among men. Interestingly, women with high desire who are not at risk of CSB report better sexual function and satisfaction and less sexual distress, which would suggest that excess desire in and of itself is not necessarily a causal factor (Štulhofer et al., 2016a).

Existing research suggests that sexual compulsivity, on the whole, tends to be more relational in nature for women (Ferree, 2019; Kuzma & Black, 2008; McKeague, 2014). Specifically, engaging with multiple sexual partners is frequently identified as the most common behavioural manifestation of CSB among women, whereas solitary and impersonal activities such as masturbation and cybersex appear less prevalent (Ekmekçi Ertek et al., 2022; Ferree, 2019; McKeague, 2014). Sexually compulsive women also report greater engagement in fantasy sex (i.e., sexual seduction of multiple partners) and are more likely to form intense emotional or romantic attachments (Kuzma & Black, 2008). To that end, I proposed that women at risk of CSB would exhibit higher dyadic sexual desire—for attractive strangers over known partners—and lower solitary desire. While those at risk reported significantly higher desire across all three subtypes, their strongest desire was directed toward romantic partners, followed by solitary activities, and then attractive others. Although these results didn't entirely support the idea that CSB women prefer dyadic versus solitary outlets (reflecting the mixed findings in this area), they did suggest that CSB in women may be more closely tied to relational sexual behaviours than to novelty-seeking per se. However, my findings also point to a less gender-typical presentation of CSB in that partner-related desire was both the most and least salient in this sample of women. It is important to note, however, that the measure of sexual desire used in this study does not specify whether the term "partner" refers to a romantic or long-term partner, though this is often assumed; rather, it may simply indicate desire for a familiar sexual partner. If desire translates into sexual behaviour, then this finding may add to the evidence that sexually compulsive women are more likely to engage with known partners or those with whom they have formed emotional bonds (Kuzma & Black, 2008). Alternatively, it may simply reflect the established phenomenon that sexual contact with known partners where a woman is assured of both safety and pleasure is more appealing than with strangers (Conley et al., 2012; Conley & Klein, 2022).

## *Sexual Distress*

Dysregulated sexual desire—whether excessively low or high—is often accompanied by psychological distress (Rothmüller, 2024). In fact, distress is one of the factors that separates non-problematic from problematic sexual behaviour (Carvalho et al., 2015; Štulhofer et al., 2016a, 2016b). Further, diagnosis of desire disorders such as SIAD depends on the presence of accompanying distress (APA, 2022). Confirming my hypothesis, women at risk of CSB reported significantly greater sexual distress than women not at risk; in the regression model, sexual distress was one of the strongest predictors of CSBD symptoms ( $\beta = .25$ ), second only to sexual desire ( $\beta = .28$ ). This finding supports the limited existing research indicating that sexual distress is positively associated with CSB in women (Dickenson et al., 2018; Efrati et al., 2022).

However, it contrasts with earlier findings suggesting that distress is either unrelated or only weakly associated with sexual compulsivity in women (Klein & Kaplan, 2018; Kürbitz et al., 2022). The distress experienced alongside CSB also may have more to do with personal moral incongruence or societal judgment (Grubbs et al., 2020b; Rothmüller, 2024; Walton, 2018), which I have argued may be even more salient for women. Interestingly, a number of studies have found a meaningful distinction between high desire and hypersexual individuals—although sexual activity is often comparable between the two groups, the latter tend to experience greater personal distress, a perceived lack of control, and more traditional attitudes around their sexual behaviour (Carvalho et al., 2015; Štulhofer et al., 2016a, 2016b; Winters et al., 2010). Thus, further research is needed to clarify the nature of sexual distress and its directionality with respect to CSB. Although Coleman et al. (2022) note that negative affect and general psychological distress are often triggers of CSB symptoms, it is equally possible that dysregulated sexual behaviour can engender sexual distress, particularly among women, who are more highly stigmatized for such behaviours.

### ***Sensation-Seeking***

Trait impulsivity, specifically in the form of sensation-seeking, has emerged as a distinct contributor to sexual compulsivity, particularly when coupled with negative affect. Despite earlier findings that men tend to be higher in sensation-seeking on average (Cross et al., 2013), other studies have found this to be a stable personality trait that is similarly associated with sexual compulsivity in women (Bittoni & Kiesner, 2022; Lykins et al., 2006; Reid et al., 2012b). My findings further confirmed this, as women at risk of CSB were significantly higher in sensation-seeking than women not at risk. In addition, after sexual desire and sexual distress, sensation-seeking emerged as the third strongest predictor of CSBD symptoms. Women high in sensation-seeking have also been found to be more likely to experience higher sexual desire when experiencing low mood, perhaps in an attempt to regulate their emotional state (Bittoni & Kiesner, 2022). In the mediation model, sensation-seeking moderated the association between sexual desire and CSB, but it did not significantly influence the depression–desire–CSB pathway. However, sensation-seeking demonstrated a robust direct association with CSB independent of both depression and sexual desire, underscoring its importance as a discrete risk factor. Taken together, these findings are consistent with prior literature identifying sensation-seeking as a key contributor to CSB across genders (Bóthe et al., 2019).

### ***Sexual and Relationship Satisfaction***

Romantic relationships are among the areas most affected by dysregulated sexual behaviour. Previous research has found that 40–70% of individuals struggling with CSB are in committed, long-term relationships (Bóthe et al., 2021b); results from my study were in line with this finding, as 57% of CSB women in this sample reported being in a committed relationship. CSB has been consistently linked to decreased sexual and relationship satisfaction (Khayer et al., 2024; Klein & Kaplan, 2021; Mark et al., 2011; Štulhofer et al., 2008) and impaired relational

functioning and intimacy, although the majority of these findings come from research on men (Bóthe et al., 2021b). Similarly, women in this sample with CSBD symptoms also reported significantly lower sexual and relationship satisfaction, although associations were more robust for the latter. Again, these findings align with existing research, as research on sexual satisfaction in women at risk of CSB has been mixed; the evidence on impaired relationship satisfaction is much more compelling. That said, along with the data on sexual function, my results suggest that high desire in women with CSB does not necessarily equate to enhanced sexual satisfaction. Rather, women in long-term relationships with higher levels of desire may be more sexually dissatisfied, possibly due to desire discrepancies (Mark, 2015), or the fact that desire tends to decline over time (Mark et al., 2018)—factors that also increase the likelihood of extradyadic sexual behaviour (Winters et al., 2010). Sexual desire discrepancies, or mismatches in sexual desire, are widespread in long-term relationships (Mark, 2015). Although it is commonly believed that women are typically the partner with lower sexual desire, no evidence supports this assumption (Dewitte et al., 2020). Relatedly, extradyadic sexual activity is common among hypersexual women (Briken et al., 2007; Ferree, 2019; Klein et al., 2014; Stupiansky et al., 2009). Dissatisfaction and infidelity may beget conflict or vice versa; Bóthe et al. (2021b) found that hypersexuality predicted lower relationship intimacy over time, rather than intimacy problems preceding hypersexual behaviour. In contrast, relationship satisfaction was found to be the strongest protective factor against CSB risk. The paradoxical nature of CSB—wherein increased sexual desire co-occurs with dissatisfaction and distress—is highlighted by these data, further affirming that it might represent an inadequate coping mechanism.

### **Relationship Between Negative Affect, Sexual Desire, and CSB**

Negative affect in general is highly correlated with CSB (Brem et al., 2017; Hegbe et al., 2021; Scanavino et al., 2018). Thus, my next set of hypotheses examined whether the

relationship between sexual desire and CSB in women was associated with and moderated by negative affect—specifically, depression and anxiety. Consistent with previous research in both men and women (Bancroft & Vukadinovic, 2004; Castro-Calvo et al., 2020; Kowaleska et al., 2024; Kürbitz & Briken, 2021; Lew-Starowicz et al., 2020), CSBD symptoms in this sample of women were significantly and positively correlated with both depression and anxiety symptoms; further, these correlations were moderate and robust. Although some studies have found depression to be highly comorbid with sexual compulsivity, others have found a similarly high comorbidity with anxiety (Grant Weinandy et al., 2023; Levi et al., 2020); thus, I wanted to examine which of these comorbidities may be more salient for women. Due to women’s greater vulnerability to depression, I hypothesized that depression would be more strongly associated with CSB among women than anxiety, and this relationship was confirmed. It is important to note, however, that this effect was modest in size, suggesting limited practical significance. Nevertheless, this result contrasts Lykins et al.’s (2006) findings that anxiety plays a larger role than depression in women’s sexual compulsivity, but aligns with evidence that anxiety may be more salient to CSB among men (Grant Weinandy et al., 2023).

Across models, sexual desire, depression, and anxiety all showed direct positive effects on CSB, with sexual desire having the strongest association<sup>15</sup>. Depression and anxiety were further hypothesized to moderate the link between sexual desire and CSB. This hypothesis was supported in part—that is, desire more strongly predicted CSB at higher levels of depression, suggesting that women’s greater vulnerability to depression may be implicated. This finding aligns with prior research suggesting that high sexual desire is not inherently pathological, but may become problematic when used as a maladaptive strategy for regulating dysphoric

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<sup>15</sup> Although the unstandardized coefficient for depression was numerically larger, this reflects differences in scale rather than predictive strength; sexual desire remained the most robust predictor of CSBD symptoms across models.

emotional states (Carvalho et al., 2015; Lew-Starowicz et al., 2020; Štulhofer et al., 2016a, 2016b; Winters et al., 2010). My results also lend support to the notion that depressed affect, in combination with other factors (e.g., a tendency towards sensation-seeking; Schultz et al., 2014), may contribute to the expression of dysregulated sexual behaviour among women.

Perhaps the most noteworthy finding from this study was that depression moderated the relationship between sexual desire and CSB, whereas anxiety did not. Sexual desire, negative affect, and sexual compulsivity were likewise not found to be significantly related in Carvalho and colleagues' (2014) study of a community sample of women. Further, no relationship was observed between anxiety or depressed mood and CSB in their study. To date, no studies have examined this specific moderation model; nevertheless, the present pattern of findings generally supports my hypothesis that depression may represent a more salient risk factor for women's sexual compulsivity than anxiety per se. One possible explanation is that anxiety may lead to sexual timidity or avoidance in women rather than increased sexual assertiveness, potentially reflecting the influence of gender norms and concerns related to safety. In contrast, the low mood and diminished self-worth often associated with depression may increase the likelihood of engaging in sexual encounters as a means of self-soothing or boosting women's feelings of attractiveness. In addition, engaging in sexual activity may help elevate mood, as sexual pleasure and orgasm are linked to increases in neurotransmitters such as serotonin, dopamine, and oxytocin (Meston & Frohlich, 2000). Nevertheless, these possibilities warrant further investigation, particularly with respect to gender-specific mechanisms.

The final set of analyses used a mediation model<sup>16</sup> to test a different conceptual relationship between sexual desire, depression, and CSB—that is, whether sexual desire might

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<sup>16</sup> It is important to note here that the use of cross-sectional data in mediation models is not wholly recommended (Shrout, 2011) and should be interpreted with caution; see Limitations for a more detailed explanation.

partly explain the link between depression and CSB in women. Approximately 12% of the women meeting clinical thresholds for depressive symptoms also reported high levels of sexual desire, which adds evidence to the phenomenon that a small proportion of individuals who are depressed may experience increased versus decreased desire (10–25%; Bancroft et al., 2003a, 2003b; Bittoni & Kiesner, 2022; Lykins et al., 2006). Furthermore, this finding suggests that this phenomenon is not unique to men. Overall, the mediation results indicated that elevated sexual desire represents one pathway through which depressive symptoms are associated with CSB among women. Although the association between sexual desire and CSB was stronger at higher levels of depression, the indirect effect of depression on CSB via sexual desire remained small. A substantial residual association between depression and CSB remained, indicating that sexual desire accounts for only a limited portion of this relationship and that other mechanisms are likely involved. Thus, heightened sexual desire may represent one contributing pathway linking depression and CSB in women, but it is far from the sole explanatory factor. There are several possible reasons for this, including evidence that women report lower levels of sexual desire or drive on average (Baumeister et al., 2001; Frankenbach et al., 2022). Accordingly, heightened desire may be less salient to women’s sexual compulsivity, although this interpretation remains tentative in the absence of direct gender comparisons.

### ***Moderators of the Depression–Sexual Desire–CSB Link***

The mediation model was extended by testing whether the indirect pathway from depression to CSB via sexual desire varied across levels of four moderators: sexual distress, sensation-seeking, sexual satisfaction, and relationship satisfaction. Consistent with earlier analyses, depression was positively associated with sexual desire, and sexual desire was a robust predictor of CSB at the mean level of all moderators. Further, each of the examined moderators significantly interacted with sexual desire in predicting CSB, indicating that the association

between sexual desire and CSB was stronger or weaker depending on these factors. However, these moderating effects did not meaningfully change the indirect association between depression and CSB through sexual desire. In other words, although variables such as sensation-seeking and sexual distress influenced how strongly sexual desire related to CSB, they did not substantially alter the extent to which sexual desire accounted for the link between depression and CSB.

In terms of the moderators examined, sensation-seeking and sexual distress emerged as particularly relevant in shaping the direct association between sexual desire and CSB. Women higher in sensation-seeking or sexual distress showed a stronger association between sexual desire and CSB. This pattern is consistent with prior work indicating that sensation-seeking, anxiety, and depression play central roles in the maintenance of CSB over time (Castro-Calvo et al., 2024a), as well as the finding that distress can exacerbate the link between substance use and CSB in women (Efrati et al., 2022). In contrast, higher relationship satisfaction modestly attenuated the association between sexual desire and CSB, aligning with evidence that being in a positive, stable relationship can be a protective factor against CSB (Bóthe et al., 2021b; Kowaleska et al., 2022; Vaillancourt-Morel et al., 2025). Sexual satisfaction, however, was not a protective factor in the present sample, despite sexual dissatisfaction often being cited as an etiological factor in hypersexual behaviour (Reid et al., 2012a; Ortega-Otero et al., 2023).

Taken together, my findings suggest that certain affective and psychosocial factors may influence how strongly sexual desire is linked to CSB, but do not substantially change the extent to which sexual desire explains the association between depression and CSB. The indirect effect remained small and relatively stable across conditions, indicating that sexual desire represents only one of several pathways linking depressive symptoms to CSB in women.

### *Directionality Checks*

The final analyses examined the directional plausibility of the proposed mediation model using both reverse mediation and direction DDA. Although the reversed mediation model—where sexual desire predicted depression, which in turn influenced CSB—was statistically significant, this effect was small and the variance explained in depression was negligible.

First-stage DDA results offered limited but descriptive insight into the hypothesized pathway. Depressive symptoms significantly predicted sexual desire in the expected direction, although the effect was extremely small. In contrast, when sexual desire was regressed on CSBD symptoms while controlling for depression, CSB emerged as a strong predictor of sexual desire, indicating a substantial bidirectional association between these constructs. Because the higher-moment tests required for the second stage of DDA could not be conducted due to severe distributional violations, these results cannot establish causal ordering. Accordingly, the DDA results should be interpreted cautiously and descriptively. While the hypothesized depression → sexual desire pathway is statistically supported and aligns with prior theory, the strength of the reverse association underscores the difficulty of inferring directionality from cross-sectional data and highlights the likelihood of reciprocal processes linking depression, sexual desire, and CSB.

Taken together, these findings provide very tentative support for a pathway in which depressive symptoms may precede increases in sexual desire, which in turn are associated with elevated CSB symptoms in women. Although depression is typically associated with lower sexual desire, the present findings add to a growing body of literature suggesting that, for a small but meaningful subset of individuals, depression may also be associated with heightened sexual desire (Bancroft et al., 2003a, 2003b; Bancroft & Vukadinovic, 2004; Bittoni & Kiesner, 2022). Moreover, the proposed direction of effects is consistent with existing longitudinal evidence indicating that depressive symptoms are more likely to precede dysregulated sexual behavior

than to result from it (e.g., McGraw et al., 2024). Overall, while causal conclusions cannot be drawn, the hypothesized direction of effect—depression leading to higher desire and subsequently to CSB—appears to be the most theoretically and statistically plausible.

### **Limitations**

Several limitations must be acknowledged. Although a more culturally homogeneous subsample was selected to enhance ecological validity and reduce measurement bias, the findings are still subject to the ISS general limitations as outlined on their [OSF page](#) (Bóthe et al., 2023). The first—and perhaps most important—limitation to note is that all data were cross-sectional, limiting the ability to draw causal conclusions. Although mediation and moderated mediation models offer a framework for theorizing potential pathways between correlations, they may yield biased estimates of indirect effects and are unable to verify temporal order or causal direction when applied to cross-sectional data (Maxwell & Cole, 2007). Shrout (2011) further warns that cross-sectional designs often fail to distinguish among alternative causal models and may lead to misleading conclusions about directionality. As a result, any directional inferences should be interpreted with caution (Thoemmes, 2015b). In addition, mediation analyses are subject to the problem of model equivalence, in which multiple theoretically distinct models may fit the data equally well (Kline, 2023; MacCallum et al., 1993). Nevertheless, cross-sectional mediation analysis retains heuristic value, as it can inform theory development and identify promising indirect pathways for future testing using more robust experimental or longitudinal designs, which are not always feasible. Although it can indicate associations and potential indirect effects, cross-sectional mediation cannot demonstrate causal processes over time.

In addition, the use of self-reported data also introduces potential biases, including recall inaccuracies and socially desirable responding. These effects may be especially pronounced when reporting sexual behaviour, which can be shaped by cultural and gender norms. Further,

although clinical cutoffs offer a useful benchmark for identifying elevated risk, they may oversimplify the dimensional nature of psychological and sexual constructs. Dichotomizing continuous variables can not only reduce statistical power (MacCallum et al., 2002) but obscure meaningful variation among individuals falling just above or below threshold levels. Lastly, the online, convenience-based sampling strategy, while enabling large-scale data collection, may have limited the generalizability of findings. The self-selected nature of participation could have introduced response bias, as individuals who chose to complete the survey (particularly on such a sensitive topic) may differ in meaningful ways from the broader population. Relatedly, differences in recruitment methods meant that participants in some countries (e.g., Spain) were given incentives such as prizes, which might have skewed the results. Thus, results may not be generalizable to women in the community who were underrepresented in the ISS sample.

### **Clinical Implications**

In terms of clinical implications, the present study suggests that patterns of vulnerability observed in men may also characterize women in nonclinical populations who report sexual compulsivity. The findings indicate that elevated sexual desire may manifest in problematic sexual behaviours when accompanied by distress or coupled with negative affect or a propensity for sensation-seeking. Moreover, clinically elevated distress may be associated with greater difficulty managing sexual desire, which in turn may increase vulnerability to compulsive behaviour; it may also reflect broader mental health or sociocultural challenges. Accordingly, interventions that target distress, mood symptoms, and facets of impulsivity such as sensation-seeking may be clinically relevant for women presenting with CSB.

Although positive long-term relationships may be somewhat protective, this effect appears modest and may be attenuated in the presence of high desire, a tendency towards sensation-seeking, and negative affect. Similarly, women with high desire may engage in

problematic sexual behaviours despite being sexually satisfied in their relationships. Thus, while relationship context should be considered, it may not be the most salient factor. Being single, however, may represent a greater vulnerability, suggesting that interventions aimed at increasing social support and reducing isolation may be beneficial for both improving mood and reducing distressing sexual behaviours.

More broadly, the present findings nod to women's sexual compulsivity being less "addictive" in nature, in that it may not necessarily involve repeatedly engaging in behaviours that are no longer pleasurable. Nevertheless, the associated distress and functional impairment may still warrant clinical intervention. In particular, sexual distress may represent a salient clinical feature among women with CSB, suggesting that treatment may benefit from focusing on the nature of this distress rather than solely on modifying sexual behaviours. For instance, if the source of the distress is mainly external, it may be important to consider structural or sociocultural factors. Restrictive gender norms surrounding female sexuality, for example, should not be overlooked when evaluating and treating women presenting with sexually compulsive behaviours; psychoeducation may be especially helpful in this regard.

### **Future Directions**

The current study highlighted some further gaps in the literature around sexual compulsivity in women. With respect to etiology, some of the correlates found in this study (e.g., negative affect, relational context) should be examined longitudinally to help establish causal directionality. In terms of innate vulnerabilities, research on the personality traits associated with hypersexuality is still in its infancy (e.g., narcissism, unrestricted sociosexuality, Machiavellianism, impulsivity; Miner et al., 2016), particularly in women. Some preliminary research has pointed to gender differences in personality such as sexually compulsive women having a higher desire for excitement and lower levels of trust (Reid et al., 2012b), but research

in this area is scant. Thus, understanding CSB progression and maintenance requires examining female-specific protective factors, both internal (e.g., lower neuroticism) and external (e.g., relationship and satisfaction), that could support prevention and treatment.

More work is required to further clarify the role of sexual dysfunction and distress in this population, as these factors have yet to be adequately parsed out in terms of their contribution to CSB in women. Findings with respect to hypersexual women's sexual function are particularly contradictory, highlighting a need for clarifying the role of sexual satisfaction, sexual desire, motivation, and pleasure when it comes to women's sexual compulsivity. Further, we still do not understand enough about women's sexual function and sexual motivation in general (Chivers & Brotto, 2017), including the role that sexual dissatisfaction and heightened sexual desire may play in their dysregulated sexual behaviour. And although a propensity towards higher sexual desire and excitation has been found mostly among men struggling with out-of-control sexual behaviour (Miner et al., 2016; Rettenberger et al., 2016; Winters et al., 2010), these links have yet to be firmly established in women, although some preliminary research exists to this effect (see Muise et al., 2013). Likewise, so little work has been done on the need for sexual novelty in women (e.g., the Coolidge effect) that we do not know whether sexual habituation and/or boredom is a contributing factor to women's sexual compulsivity, as it has been assumed in men. While past research and gender stereotypes would indicate that women have a lower need for sexual novelty (Hughes et al., 2020), there is not enough evidence on gender differences to conclude this with any certainty. In fact, relationship length and partner familiarity are much stronger risk factors for declines in sexual desire over time among women than men (Mark & Lasslo, 2018). Whether this is a contributing factor to women's infidelity or sexual compulsivity, however, remains unknown.

In terms of relational content, more research is needed to determine whether CSB in women is primarily motivated by a desire for emotional connection and relational intimacy, as opposed to the pursuit of sexual novelty or impersonal sexual gratification. Consequently, researchers should examine whether these motivations are reflected in different types of sexual outlets or objects being pursued. In fact, this theme emerged throughout my study—the gender gap in the CSB may be decreasing, but not enough cross-gender comparisons have been made to conclude that there are gender-specific presentations of CSB.

Furthermore, it remains unclear what differentiates problematic from non-problematic sexual behaviour and desire among women. Prior work on men has highlighted moral incongruence and distress as key factors, but more studies are needed on individuals of other genders. Klein and Kaplan (2018) note that questions remain as to whether the stigma associated with women having high desire and multiple sexual partners is causing sexual distress and negative consequences in and of itself. We do not yet know whether self-labelled “sex addiction” is more common among women (as self-diagnosed “porn addiction” is among conservative men; Grubbs et al., 2020b) due to more restrictive norms around their sexuality. In fact, women’s sexual shame and concomitant distress may be even greater than that of men, due to gender norms around excessive sexual behaviour and promiscuity, preventing them from seeking treatment or experiencing worse psychological duress over time. Future work could explore how such gender norms shape the expression of CSB in women, particularly in relation to sexual agency, stigma, moral incongruence, and distress. Lastly, there is a serious paucity of qualitative research (see Blumberg, 2003; Ross, 1996), which could provide valuable insights into the lived experiences of high desire and sexually compulsive women (e.g., the role of pleasure, functional repercussions, and societal judgment). As a recent call to action states, we need more research on hypersexual women specifically (Kowaleska et al., 2024).

## Conclusion

In conclusion, the current study adds to the increasing evidence that a complex constellation of factors (i.e., negative affect, higher sexual desire, sensation-seeking, and lower relationship satisfaction) is implicated in CSB among women. In this large community sample of Western women, sexual desire, sexual distress, and depressive symptoms stood out as important correlates. Consistent with past research, women at risk of CSB tended to report higher desire and sexual distress alongside poorer sexual functioning. In terms of mood symptoms, depression, rather than anxiety, strengthened the link between high sexual desire and sexual compulsivity in women. Depression was associated with CSB both on its own and via higher sexual desire. Although traits like sensation-seeking and relationship satisfaction affected how strongly sexual desire was linked to CSB, they did not change the overall pattern of this relationship. Relationship quality appeared somewhat protective, whereas sexual satisfaction did not.

Results from this study suggest a more nuanced, gender-informed view of CSB and high sexual desire in women, challenging longstanding assumptions that hypersexuality in women is rare or irrelevant in clinical contexts. Findings also highlight the need for clinicians to be mindful of bias when diagnosing or treating female patients. Accordingly, this study lends support to the growing body of evidence that gender differences in CSB—with respect to both prevalence and etiology—are narrowing over time. Yet more research is needed, particularly of a longitudinal nature, to pinpoint whether unique developmental pathways exist for women. In sum, this work underscores the importance of recognizing sexual compulsivity in women while also considering co-occurring distress, desire dysregulation, depressive symptoms, and relationship context. The stigma and lack of knowledge surrounding women's hypersexual behaviour has historically rendered them an invisibilized and underserved population; thus, further research in this area is critical to ameliorate women's psychological and sexual wellbeing.

## References

- Altman, D. G., & Royston, P. (2006). The cost of dichotomising continuous variables. *BMJ*, 332(7549), 1080. <https://doi.org/10.1136/bmj.332.7549.1080>
- American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed., text rev.; DSM-5-TR). American Psychiatric Publishing. <https://doi.org/10.1176/appi.books.9780890425787>
- Anderson-Foster, N. (2023). Black women and compulsive sexual behavior. *Sexual Health & Compulsivity*, 30(1), 38–56. <https://doi.org/10.1080/26929953.2022.2150918>
- Asner-Self, K. K., Schreiber, J. B., & Marotta, S. A. (2006). A cross-cultural analysis of the Brief Symptom Inventory-18. *Cultural Diversity & Ethnic Minority Psychology*, 12(2), 367–375. <https://doi.org/10.1037/1099-9809.12.2.367>
- Ballester-Arnal, R., Elipe-Miravet, M., Castro-Calvo, J., Beltrán-Martínez, P., Nagy, L., Koós, M., Kraus, S.W., Demetrovics, Z., Potenza, M. N., International Sex Survey Consortium & Böthe, B. (2024). Cross-cultural validation of the Arizona Sexual Experience Scale (ASEX) in 42 countries and 26 languages. *Sexuality Research and Social Policy*. <https://doi.org/10.1007/s13178-024-010>
- Bancroft, J., Janssen, E., Strong, D., Carnes, L., Vukadinovic, Z., & Long, J. S. (2003a). The relation between mood and sexuality in heterosexual men. *Archives of Sexual Behavior*, 32(3), 217–230. <https://doi.org/10.1023/A:1023409516739>
- Bancroft, J., Janssen, E., Strong, D., & Vukadinovic, Z. (2003b). The relation between mood and sexuality in gay men. *Archives of Sexual Behavior*, 32(3), 231–242. <https://doi.org/10.1023/A:1023461500810>

- Bancroft, J., & Vukadinovic, Z. (2004). Sexual addiction, sexual compulsivity, sexual impulsivity, or what? Toward a theoretical model. *The Journal of Sex Research, 41*(3), 225–234. <https://doi.org/10.1080/00224490409552230>
- Basson, R. (2001). Human sex–response cycles. *Journal of Sex & Marital Therapy, 27*(1), 33–43. <https://doi.org/10.1080/00926230152035831>
- Basson, R. (2008). Women’s sexual function and dysfunction: Current uncertainties, future directions. *International Journal of Impotence Research, 20*(5), 466–478. <https://doi.org/10.1038/ijir.2008.23>
- Baumeister, R. F., Catanese, K. R., & Vohs, K. D. (2001). Is there a gender difference in strength of sex drive? Theoretical views, conceptual distinctions, and a review of relevant evidence. *Personality and Social Psychology Review, 5*(3), 242–273. [https://doi.org/10.1207/S15327957PSPR0503\\_5](https://doi.org/10.1207/S15327957PSPR0503_5)
- Baumeister, R. F., & Twenge, J. M. (2002). Cultural suppression of female sexuality. *Review of General Psychology, 6*(2), 166–203. <https://doi.org/10.1037/1089-2680.6.2.166>
- Billieux, J., Rochat, L., Ceschi, G., Carré, A., Offerlin-Meyer, I., Defeldre, A.-C., Khazaal, Y., Besche-Richard, C., & Van der Linden, M. (2012). Validation of a short French version of the UPPS-P impulsive behavior scale. *Comprehensive Psychiatry, 53*(5), 609–615. <https://doi.org/10.1016/J.COMPPSYCH.2011.09.001>
- Bittoni, C., & Kiesner, J. (2022). Sexual desire in women: Paradoxical and nonlinear associations with anxiety and depressed mood. *Archives of Sexual Behavior, 51*(8), 3807–3822. <https://doi.org/10.1007/s10508-022-02400-w>
- Blumberg, E. S. (2003). The lives and voices of highly sexual women. *The Journal of Sex Research, 40*(2), 146–157. <https://doi.org/10.1080/00224490309552176>

- Bóthe, B., Bartók, R., Tóth-Király, I., Reid, R. C., Griffiths, M. D., Demetrovics, Z., & Orosz, G. (2018). Hypersexuality, gender, and sexual orientation: A large-scale psychometric survey study. *Archives of Sexual Behavior, 47*, 2265–2276. <https://doi.org/10.1007/s10508-018-1201-z>
- Bóthe, B., Koos, M., Nagy, L., Kraus, S. W., Demetrovics, Z., Potenza, M. N., Michaud, A., Ballester-Arnal, R., Batthyány, D., Bergeron, S., Billieux, J., Briken, P., Burkauskas, J., Cárdenas-López, G., Carvalho, J., Castro-Calvo, J., Chen, L., Ciocca, G., Corazza, O... Vaillancourt-Morel, M-P. (2023). Compulsive sexual behavior disorder in 42 countries: Insights from the International Sex Survey and introduction of standardized assessment tools. *Journal of Behavioral Addictions, 12*(2), 393–407. <https://doi.org/10.1556/2006.2023.00028>
- Bóthe, B., Koos, M., Nagy, L., Kraus, S. W., Potenza, M. N., & Demetrovics, Z. (2021a). International Sex Survey: Study protocol of a large, cross-cultural collaborative study in 45 countries. *Journal of Behavioral Addictions, 10*(3), 632–645. <https://doi.org/10.1556/2006.2021.00063>
- Bóthe, B., Potenza, M. N., Griffiths, M. D., Kraus, S. W., Klein, V., Fuss, J., & Demetrovics, Z. (2020). The development of the Compulsive Sexual Behavior Disorder Scale (CSBD-19): An ICD-11 based screening measure across three languages. *Journal of Behavioral Addictions, 9*(2), 247–258. <https://doi.org/10.1556/2006.2020.00034>
- Bóthe, B., Tóth-Király, I., Potenza, M. N., Griffiths, M. D., Orosz, G., & Demetrovics, Z. (2019). Revisiting the role of impulsivity and compulsivity in problematic sexual behaviors. *The Journal of Sex Research, 56*(2), 166–179. <https://doi.org/10.1080/00224499.2018.1480744>

- Böthe, B., Vaillancourt-Morel, M.-P., & Bergeron, S. (2021b). Hypersexuality in mixed-sex couples: A dyadic longitudinal study. *Archives of Sexual Behavior, 50*(6), 2139–2150. <https://doi.org/10.1007/s10508-021-01959-0>
- Brazil, K. J. (2025). Personality and sexuality. *Current Opinion in Psychology, 66*, 102124. <https://doi.org/10.1016/j.copsyc.2025.102124>
- Brem, M. J., Shorey, R. C., Anderson, S., & Stuart, G. L. (2017). Depression, anxiety, and compulsive sexual behaviour among men in residential treatment for substance use disorders: The role of experiential avoidance. *Clinical Psychology & Psychotherapy, 24*, 1246–1253. <https://doi.org/10.1002/cpp.2085>
- Brenan, M. (2023, May 17). *U.S. depression rates reach new highs*. Gallup. <https://news.gallup.com/poll/505745/depression-rates-reach-new-highs.aspx>
- Breuer, T. (2016). Statistical power analysis and the contemporary “crisis” in social sciences. *Journal of Marketing Analytics, 4*, 61–65. <https://doi.org/10.1057/s41270-016-0001-3>
- Briken, P., Böthe, B., Carvalho, J., Coleman, E., Giraldi, A., Kraus, S. W., Lew-Starowicz, M., & Pfaus, J. G. (2024). Assessment and treatment of Compulsive Sexual Behavior Disorder: A sexual medicine perspective. *Sexual Medicine Reviews, 12*(3), 355–370. <https://doi.org/10.1093/sxmrev/qeae014>
- Briken, P., Habermann, N., Berner, W., & Hill, A. (2007). Diagnosis and treatment of sexual addiction: A survey among German sex therapists. *Sexual Addiction & Compulsivity, 14*(2), 131–143. <https://doi.org/10.1080/10720160701310450>
- Briken, P., Wiessner, C., Štulhofer, A., Klein, V., Fuss, J., Reed, G. M., & Dekker, A. (2022). Who feels affected by “out of control” sexual behavior? Prevalence and correlates of indicators for ICD-11 Compulsive Sexual Behavior Disorder in the German Health and

- Sexuality Survey (GeSiD). *Journal of Behavioral Addictions*, *11*(3), 900–911.  
<https://doi.org/10.1556/2006.2022.00060>
- Brotto, L. A., Heiman, J. R., & Tolman, D. L. (2009). Narratives of desire in mid-age women with and without arousal difficulties. *The Journal of Sex Research*, *46*(5), 387–398.  
<https://doi.org/10.1080/00224490902792624>
- Brotto, L. A., & Yule, M. (2017). Asexuality: Sexual orientation, paraphilia, sexual dysfunction, or none of the above? *Archives of Sexual Behavior*, *46*(3), 619–627.  
<https://doi.org/10.1007/s10508-016-0802-7>
- Bühler, J. L., Krauss, S., & Orth, U. (2021). Development of relationship satisfaction across the life span: A systematic review and meta-analysis. *Psychological Bulletin*, *147*(10), 1012–1053. <https://doi.org/10.1037/bul0000342>
- Burri, A. (2017). Sexual sensation seeking, sexual compulsivity, and gender identity and its relationship with sexual functioning in a population sample of men and women. *The Journal of Sexual Medicine*, *14*(1), 69–77. <http://dx.doi.org/10.1016/j.jsxm.2016.10.013>
- Burri, A., & Spector, T. (2011). Recent and lifelong sexual dysfunction in a female UK population sample: Prevalence and risk factors. *The Journal of Sexual Medicine*, *8*(9), 2420–2430. <https://doi.org/10.1111/j.1743-6109.2011.02341.x>
- Calogero, R. M., & Siegel, J. A. (2019). Widening understandings of women’s sexual desire: a social–ecological lens. *Archives of Sexual Behavior*, *48*, 1693–1698.  
<https://doi.org/10.1007/s10508-018-1351-z>
- Carvalho, J., Guerra, L., Neves, S., & Nobre, P. J. (2014). Psychopathological predictors characterizing sexual compulsivity in a nonclinical sample of women. *Journal of Sex & Marital Therapy*, *41*(5), 467–480. <https://doi.org/10.1080/0092623X.2014.920755>

- Carvalho, J., Štulhofer, A., Vieira, A. L., & Jurin, T. (2015). Hypersexuality and high sexual desire: Exploring the structure of problematic sexuality. *The Journal of Sexual Medicine*, *12*(6), 1356–1367. <https://doi.org/10.1111/jsm.12865>
- Castellini, G., Rellini, A. H., Appignanesi, C., Pinucci, I., Fattorini, M., Grano, E., Fisher, A. D., Cassioli, E., Lelli, L., Maggi, M., & Ricca, V. (2018). Deviance or normalcy? The relationship among paraphilic thoughts and behaviors, hypersexuality, and psychopathology in a sample of university students. *The Journal of Sexual Medicine*, *15*(9), 1322–1335. <https://doi.org/10.1016/j.jsxm.2018.07.015>
- Castro-Calvo, J., Gil-Llario, M. D., Giménez-García, C., Gil-Juliá, B., & Ballester-Arnal, R. (2020). Occurrence and clinical characteristics of compulsive sexual behavior disorder (CSBD): A cluster analysis in two independent community samples. *Journal of Behavioral Addictions*, *9*(2), 446–468. <https://doi.org/10.1556/2006.2020.00025>
- Castro-Calvo, J., Ballester-Arnal, R., Giménez-García, C. et al. (2024a). Natural course of compulsive sexual behavior (CSB): A 1-year follow-up study. *International Journal of Mental Health and Addiction*, *22*, 3470–3490. <https://doi.org/10.1007/s11469-023-01061-7>
- Castro-Calvo, J., Beltrán-Martínez, P., Ballester-Arnal, R., Nagy, L., Koós, M., Kraus, S. W., Demetrovics, Z., Potenza, M. N., International Sex Survey Consortium, and Bóthe, B. (2024b). Cross-cultural validation of the Sexual Desire Inventory (SDI-2) in 42 countries and 26 languages. *The Journal of Sex Research*, 1–14. <https://doi.org/10.1080/00224499.2024.2417023>
- Cherkasskaya, E., & Rosario, M. (2019). The relational and bodily experiences theory of sexual desire in women. *Archives of Sexual Behavior*, *48*, 1659–1681. <https://doi.org/10.1007/s10508-018-1212-9>

- Chivers, M. L., & Brotto, L. A. (2017). Controversies of women's sexual arousal and desire. *European Psychologist, 22*(1), 5–26. <https://doi.org/10.1027/1016-9040/a000274>
- Ciocca, G., Fontanesi, L., Robilotta, A., Limoncin, E., Nimbi, F. M., Mollaioli, D., Sansone, A., Colonnello, E., Simonelli, C., Di Lorenzo, G., & Jannini, E. A. (2022). Hypersexual behavior and depression symptoms among dating app users. *Sexes, 3*(2), 298–307. <https://doi.org/10.3390/sexes3020023>
- Ciocca, G., Pelligrini, F., Mollaioli, D., Limoncin, E., Sansone, A., Colonnello, E., Jannini, E. A., & Fontanesi, L. (2021). Hypersexual behavior and attachment styles in a non-clinical sample: The mediation role of depression and post-traumatic stress symptoms. *Journal of Affective Disorders, 293*, 399–405. <https://doi.org/10.1016/j.jad.2021.06.064>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Routledge. <https://doi.org/10.4324/9780203771587>
- Coleman, E., Rahm-Knigge, R. L., Danielson, S., Nielsen, K. H., Gleason, N., Jennings, T., & Miner, M. H. (2022). The relationship between boredom proneness, attachment styles and compulsive sexual behavior. *Journal of Sex & Marital Therapy, 48*(2), 172–188. <https://doi.org/10.1080/0092623X.2022.2086511>
- Conley, T. D., & Klein, V. (2022). Women get worse sex: A confound in the explanation of gender differences in sexuality. *Perspectives on Psychological Science, 17*(4), 960-978. <https://doi.org/10.1177/17456916211041598>
- Conley, T. D., Moors, A. C., Matsick, J. L., Ziegler, A., & Valentine, B. A. (2011). Women, men, and the bedroom: Methodological and conceptual insights that narrow, reframe, and eliminate gender differences in sexuality. *Current Directions in Psychological Science, 20*(5), 296-300. <https://doi.org/10.1177/09637214111418467>

- Conley, T. D., Ziegler, A., & Moors, A. C. (2012). Backlash from the bedroom: Stigma mediates gender differences in acceptance of casual sex offers. *Psychology of Women Quarterly*, 37(3), 392-407. <https://doi.org/10.1177/0361684312467169>
- Cross, C. P., Cyrenne, D.-L. M., & Brown, G. R. (2013). Sex differences in sensation-seeking: A meta-analysis. *Scientific Reports*, 3, 2486. <https://doi.org/10.1038/srep02486>
- Dawson, S. J., & Chivers, M. L. (2014). Gender differences and similarities in sexual desire. *Current Sexual Health Reports*, 6(4), 211–219. <https://doi.org/10.1007/s11930-014-0027-5>
- Derogatis, L. R. (2000). *The Brief Symptom Inventory-18 (BSI-18): Administration, Scoring and Procedures Manual*. National Computer Systems.
- DeRogatis, L., Clayton, A., Lewis-D'Agostino, D., Wunderlich, G., & Fu, Y. (2008). Validation of the Female Sexual Distress Scale-Revised for assessing distress in women with hypoactive sexual desire disorder. *The Journal of Sexual Medicine*, 5(2), 357–364. <https://doi.org/10.1111/j.1743-6109.2007.00672.x>
- Derogatis, L. R., Rosen, R., Leiblum, S., Burnett, A., & Heiman, J. (2002). The Female Sexual Distress Scale (FSDS): Initial validation of a standardized scale for assessment of sexually related personal distress in women. *Journal of Sex & Marital Therapy*, 28(4), 317– 330. <https://doi.org/10.1080/00926230290001448>
- Dewitte, M., Carvalho, J., Corona, G., Limoncin, E., Pascoal, P., Reisman, Y., & Štulhofer, A. (2020). Sexual desire discrepancy: A position statement of the European Society for Sexual Medicine. *Sexual Medicine*, 8(2), 121–131. <https://doi.org/10.1016/j.esxm.2020.02.008>

- Dhuffar, M.K., & Griffiths, M.D. (2014). Understanding the role of shame and its consequences in female hypersexual behaviours: A pilot study. *Journal of Behavioral Addictions*, 3(4), 231–237. <https://doi.org/10.1556/JBA.3.2014.4.4>
- Dhuffar, M.K., & Griffiths, M.D. (2016). Barriers to female sex addiction treatment in the UK. *Journal of Behavioral Addictions*, 5(4), 562–567. <https://doi.org/10.1556/2006.5.2016.072>
- Dickenson, J. A., Gleason, N., Coleman, E., & Miner, M. H. (2018). Prevalence of distress associated with difficulty controlling sexual urges, feelings, and behaviors in the United States. *JAMA Network Open*, 1(7), e184468. <https://doi.org/10.1001/jamanetworkopen.2018.4468>
- Diedenhofen, B. & Musch, J. (2015). cocor: A comprehensive solution for the statistical comparison of correlations. *PLoS ONE*, 10(4), e0121945. <https://doi.org/10.1371/journal.pone.0121945>
- Du, R., & Knight, R. A. (2024). The structure of hypersexuality and its relation to impulsivity. *Archives of Sexual Behavior*, 53, 2277–2290. <https://doi.org/10.1007/s10508-024-02828-2>
- Efrati, Y., & Gola, M. (2018). Compulsive sexual behavior: A twelve-step therapeutic approach. *Journal of Behavioral Addictions*, 7(2), 445–453. <https://doi.org/10.1556/2006.7.2018.54>
- Efrati, Y., Goldman, K., Levin, K. et al. (2022). A bridge of distress: Distress as the critical mediator between substance use disorders and compulsive sexual behavior disorder among women. *International Journal of Mental Health and Addiction*, 22, 1900–1920. <https://doi.org/10.1007/s11469-022-00964-1>
- Ekmekçi Ertek, İ., Bozdağ, M. Ç., Ünler, M., Yurtseven, Ç. H., & Candansayar, S. (2022). Clinical presentations of female hypersexuality on a psychiatry outpatient clinic in

- Turkey: A retrospective analysis of patients in the concept of diagnosis and trauma. *Sexual Health & Compulsivity*, 30(1), 1–21.  
<https://doi.org/10.1080/26929953.2022.2143460>
- Endendijk, J. J., van Baar, A. L., & Deković, M. (2019). He is a stud, she is a slut! A meta-analysis on the continued existence of sexual double standards. *Personality and Social Psychology Review*, 24(2), 163–190. <https://doi.org/10.1177/1088868319891310>
- Ferree, M. C. (2001). Females and sex addiction: Myths and diagnostic implications. *Sexual Addiction & Compulsivity*, 8(3–4), 287–300.  
<https://doi.org/10.1080/107201601753459973>
- Ferree, M. C. (2019). Making advances: Treating female sex and love addicts. In P. J. Carnes, K. M. Adams (Eds.), *Clinical management of sex addiction* (pp. 336–351). Routledge.
- Fisher, T.D. (2013). Gender roles and pressure to be truthful: The bogus pipeline modifies gender differences in sexual but not non-sexual behavior. *Sex Roles*, 68, 401–414.  
<https://doi.org/10.1007/s11199-013-0266-3>
- Fontanesi, L., Marchetti, D., Limoncin, E., Rossi, R., Nimbi, F. M., Mollaioli, D., Sansone, A., Colonnello, E., Simonelli, C., Di Lorenzo, G., Jannini, E. A., & Ciocca, G. (2021). Hypersexuality and trauma: A mediation and moderation model from psychopathology to problematic sexual behavior. *Journal of Affective Disorders*, 281, 631–637.  
<https://doi.org/10.1016/j.jad.2020.11.100>
- Frankenbach, J., Weber, M., Loschelder, D. D., Kilger, H., & Friese, M. (2022). Sex drive: Theoretical conceptualization and meta-analytic review of gender differences. *Psychological Bulletin*, 148(9–10), 621–661. <https://doi.org/10.1037/bul0000366>

- Franke, G. H., Jaeger, S., Glaesmer, H., Barkmann, C., Petrowski, K., & Braehler, E. (2017). Psychometric analysis of the brief symptom inventory 18 (BSI-18) in a representative German sample. *BMC medical research methodology*, *17*(1), 14.
- Fülöp, F., Böthe, B., Gál, É., Cachia, J. Y. A., Demetrovics, Z., & Orosz, G. (2022). A two-study validation of a single-item measure of relationship satisfaction: RAS-1. *Current Psychology*, *41*, 2109–2121. <https://doi.org/10.1007/s12144-020-00727-y>
- Garofalo, C., Velotti, P., & Zavattini, G. C. (2015). Emotion dysregulation and hypersexuality: review and clinical implications. *Sexual and Relationship Therapy*, *31*(1), 3–19. <https://doi.org/10.1080/14681994.2015.1062855>
- Girgus, J. S., & Yang, K. (2015). Gender and depression. *Current Opinion in Psychology*, *4*, 53–60. <https://doi.org/10.1016/j.copsyc.2015.01.019>.
- Glica, A., Wizła, M., Gola, M., & Lewczuk, K. (2023). Hypo- or hyperfunction? Differential relationships between compulsive sexual behavior disorder facets and sexual health. *The Journal of Sexual Medicine*, *20*(3), 332–345. <https://doi.org/10.1093/jsxmed/qdac035>
- Gola, M., Lewczuk, K., Potenza, M. N., Kingston, D. A., Grubbs, J. B., Stark, R., and Reid, R. C. (2020). What should be included in the criteria for Compulsive Sexual Behavior Disorder? *Journal of Behavioral Addictions*, *11*(2), 160–165. <https://doi.org/10.1556/2006.2020.00090>
- Graham, F. J., Walters, G. D., Harris, D. A., & Knight, R. A. (2016). Is hypersexuality dimensional or categorical? Evidence from male and female college samples. *The Journal of Sex Research*, *53*(2), 224–238. [doi.org/10.1080/00224499.2014.1003524](https://doi.org/10.1080/00224499.2014.1003524)
- Grant Weinandy, J. T., Lee, B., Hoagland, K. C., Grubbs, J. B., & Böthe, B. (2022). Anxiety and Compulsive Sexual Behavior Disorder: A systematic review. *The Journal of Sex Research*, *60*(4), 545–557. <https://doi.org/10.1080/00224499.2022.2066616>

- Grassi, L., Caruso, R., Mitchell, A. J., Sabato, S., & Nanni, M. G. (2018). Screening for emotional disorders in patients with cancer using the Brief Symptom Inventory (BSI) and the BSI-18 versus a standardized psychiatric interview (the World Health Organization Composite International Diagnostic Interview). *Cancer, 124*(11), 2415–2426.  
<https://doi.org/10.1002/cncr.31340>
- Graziani, C., & Chivers, M. L. (2024). Sexual shame and women’s sexual functioning. *Sexes, 5*(4), 739–757. <https://doi.org/10.3390/sexes5040047>
- Grubbs, J., Hoagland, K. C., Lee, B.N., Grant, J. T., Davison, P., Reid, R. C., & Kraus, S. W. (2020a). Sexual addiction 25 years on: A systematic and methodological review of empirical literature and an agenda for future research. *Clinical Psychology Review, 82*, 101925. [doi.org/10.1016/j.cpr.2020.101925](https://doi.org/10.1016/j.cpr.2020.101925).
- Grubbs, J. B., Kraus, S. W., Perry, S. L., Lewczuk, K., & Gola, M. (2020b). Moral incongruence and compulsive sexual behavior: Results from cross-sectional interactions and parallel growth curve analyses. *Journal of Abnormal Psychology, 129*(3), 266–278.  
<https://doi.org/10.1037/abn0000501>
- Grubbs, J. B., Lee, B., Floyd, C. G., Bóthe, B., Jennings, T., & Kraus, S. W. (2024). What is the “sex” in sex addiction? Problem behaviors reported among those endorsing compulsive sexual behavior. *Sexual Health & Compulsivity, 31*(4), 351–367.  
<https://doi.org/10.1080/26929953.2024.2386518>
- Hegbe, K. G., Réveillère, C., & Barrault, S. (2021). Sexual addiction and associated factors: The role of emotion dysregulation, impulsivity, anxiety and depression. *Journal of Sex & Marital Therapy, 47*(8), 785–803. <https://doi.org/10.1080/0092623X.2021.1952361>
- Hendrick, S. S. (1988). A generic measure of relationship satisfaction. *Journal of Marriage and the Family, 50*(1), 93–98. <https://doi.org/10.2307/352430>

- Holloway, V., & Wylie, K. (2015). Sex drive and sexual desire. *Current Opinion in Psychiatry*, 28(6), 424–429. <https://doi.org/10.1097/YCO.0000000000000199>
- Hu, L., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods*, 3(4), 424–453. <https://doi.org/10.1037/1082-989X.3.4.424>
- Hughes, S. M., Aung, T., Harrison, M. A., & Gallup, A. C. (2020). Experimental evidence for sex differences in sexual variety preferences: Support for the Coolidge effect in humans. *Archives of Sexual Behavior*, 50(2), 495–509. <https://doi.org/10.1007/s10508-020-01730-x>
- Jannini, T. B., Rossi, R., Sconci, V., Bonanni, R. L., De Michele, F., Cavallo, G., Siracusano, A., Rossi, A., Di Lorenzo, G., Jannini, E. A., & Ciocca, G. (2022). Italian validation of the Arizona Sexual Experience Scale (ASEX) in patients with psychotic spectrum disorders. *Rivista di Psichiatria*, 57(1), 18–22. <https://doi.org/10.1708/3749.37323>
- Janssen, E., Macapagal, K. R., & Mustanski, B. (2012). Individual differences in the effects of mood on sexuality: The Revised Mood and Sexuality Questionnaire (MSQ-R). *The Journal of Sex Research*, 50(7), 676–687. <https://doi.org/10.1080/00224499.2012.684251>
- Janssen, E., Prause, N., Swinburne Romine, R., Raymond, N., MacDonald, A. W., Coleman, E., & Miner, M. H. (2020). Sexual responsivity and the effects of negative mood on sexual arousal in hypersexual men who have sex with men (MSM). *The Journal of Sexual Medicine*, 17(9), 1751–1760. <https://doi.org/10.1016/j.jsxm.2020.06.010>
- Kafka, M. P. (2010). Hypersexual disorder: A proposed diagnosis for DSM-V. *Archives of Sexual Behavior*, 39(2), 377–400. <https://doi.org/10.1007/s10508-009-9574-7>
- Katehakis, A. (2018). The female face of sex addiction. In T. Birchard, J. Benfield (Eds.), *The Routledge international handbook of sexual addiction* (pp. 327–337). Routledge.

- Khajehei, M., Doherty, M., & Tilley, P. J. M. (2015). An update on sexual function and dysfunction in women. *Archives of Women's Mental Health, 18*(3), 423–433. <https://doi.org/10.1007/s00737-015-0535-y>
- Khayer, E., Rad, M., Bóthe, B., & Farnam, F. (2023). Psychometric properties of the Persian version of the Compulsive Sexual Behavior Disorder scale (CSBD-19). *Sexual Health & Compulsivity, 30*(2), 1–15. <https://doi.org/10.1080/26929953.2023.2188500>.
- Khayer, E., Zarei, R., Damghanian, M., Bóthe, B., & Farnam, F. (2024). Compulsive sexual behaviour in Iranian married women: Prevalence, sociodemographic, sexual, and psychological predictors across-country. *Journal of Behavioral Addictions, 13*(2), 495–505. <https://10.1556/2006.2024.00009>
- Kingston, D. A. (2018). Hypersexuality: Fact or fiction? *The Journal of Sexual Medicine, 15*(5), 613–615. [doi.org/10.1111/jsm.12602](https://doi.org/10.1111/jsm.12602)
- Klein, V., & Kaplan, M. S. (2021). CSBD in women. In Balon, R., & Briken, P. (Eds.), *Compulsive Sexual Behavior Disorder: Understanding, assessment, and treatment* (1st ed., pp. 129–142). American Psychiatric Association.
- Klein, V., Rettenberger, M., & Briken, P. (2014). Self-reported indicators of hypersexuality and its correlates in a female online sample. *The Journal of Sexual Medicine, 11*(8), 1974–1981. <https://doi.org/10.1111/jsm.12602>
- Klein, V., Savaşç, O., & Conley, T. D. (2021). How WEIRD and androcentric is sex research? Global inequities in study populations. *The Journal of Sex Research, 59*(7), 810–817. <https://doi.org/10.1080/00224499.2021.1918050>
- Kline, R. B. (2023). *Principles and practice of structural equation modeling* (5<sup>th</sup> ed). Guilford Press.

- Koós, M., Bóthe, B., Orosz, G., Potenza, M. N., Reid, R. C., & Demetrovics, Z. (2021). The negative consequences of hypersexuality: Revisiting the factor structure of the Hypersexual Behavior Consequences Scale and its correlates in a large, non-clinical sample. *Addictive Behaviors Reports, 13*, 100321. <https://doi.org/10.1016/j.abrep.2020.100321>
- Kowalewska, E., Gola, M., Kraus, S. W., & Lew-Starowicz, M. (2020). Spotlight on Compulsive Sexual Behavior Disorder: A systematic review of research on women. *Neuropsychiatric Disease and Treatment, 16*, 2025–2043. <https://doi.org/10.2147/NDT.S221540>
- Kowalewska, E., Gola, M., Lew-Starowicz, M., & Kraus, S. W. (2022). Predictors of compulsive sexual behavior among treatment-seeking women. *Sexual Medicine, 10*(4), 100525. <https://doi.org/10.1016/j.esxm.2022.100525>
- Kowalewska, E., Bóthe, B., & Kraus, S. W. (2024). Compulsive Sexual Behavior Disorder: The importance of research on women. *Journal of Behavioral Addictions, 13*(1). <https://doi.org/10.1556/2006.2023.00087>
- Kraemer, H. C., Noda, A., & O'Hara, R. (2004). Categorical versus dimensional approaches to diagnosis: Methodological challenges. *Journal of Psychiatric Research, 38*(1), 17–25. [https://doi.org/10.1016/S0022-3956\(03\)00097-9](https://doi.org/10.1016/S0022-3956(03)00097-9)
- Kraus, S. W., Voon V., Potenza, M. N. (2016). Should compulsive sexual behavior be considered an addiction? *Addiction, 111*(12), 2097–2106. [doi.org/10.1111/add.13297](https://doi.org/10.1111/add.13297)
- Kraus, S. W., Krueger, R. B., Briken, P., First, M. B., Stein, D. J., Kaplan, M. S., Voon, V., Abdo, C. H., Grant, J. E., Atalla, E., & Reed, G. M. (2018). Compulsive sexual behaviour disorder in the ICD-11. *World Psychiatry, 17*(1), 109–110. [doi.org/10.1002/wps.20499](https://doi.org/10.1002/wps.20499)

- Kürbitz, L. I., & Briken, P. (2021). Is compulsive sexual behavior different in women compared to men? *Journal of Clinical Medicine*, *10*(15), 3205.  
<https://doi.org/10.3390/jcm10153205>
- Kürbitz, L. I., Schoon, W., Briken, P., Schöttle, D., & Schröder, J. (2022). Gender differences in the association of psychological distress and sexual compulsivity before and during the COVID-19 pandemic. *Journal of Behavioral Addictions*, *11*(2), 533–543.  
<https://doi.org/10.1556/2006.2022.00037>
- Lakens, D. (2013). Calculating and reporting effect sizes to facilitate cumulative science: A practical primer for t-tests and ANOVAs. *Frontiers in Psychology*, *4*, 863.  
<https://doi.org/10.3389/fpsyg.2013.00863>
- Långström, N., & Hanson, R. K. (2006). High rates of sexual behavior in the general population: Correlates and predictors. *Archives of Sexual Behavior*, *35*(1), 37–52.  
<https://doi.org/10.1007/s10508-006-8993-y>
- Lawrance, K., & Byers, E. S. (1998). Interpersonal exchange model of sexual satisfaction questionnaire. In C. M. Davis, W. L. Yarber, R. Baureman, G. Schreer, & S. L. Davis (Eds.), *Sexuality related measures: A compendium* (2<sup>nd</sup> edition, pp. 514–519). Gage.
- Lee, B. N. (2024). *An investigation of compulsive sexual behavior in sexual minority women and gender minorities* (Publication No. 31604093) [Doctoral dissertation, Bowling Green State University]. ProQuest Dissertations & Theses Global.
- Leiblum, S. R., & Chivers, M. L. (2007). Normal and persistent genital arousal in women: New perspectives. *Journal of Sex & Marital Therapy*, *33*(4), 357–373.  
<https://doi.org/10.1080/00926230701385605>

- Levi, G., Cohen, C., Kaliche, S., Sharaabi, S., Cohen, K., Tzur-Bitan, D., & Weinstein, A. (2020). Sexual addiction, compulsivity, and impulsivity among a predominantly female sample of adults who use the internet for sex. *Journal of Behavioral Addictions, 9*(1), 83–92. <https://doi.org/10.1556/2006.2020.00007>
- Lewczuk, K., Szmyd, J., Skorko, M., & Gola, M. (2017). Treatment seeking for problematic pornography use among women. *Journal of Behavioral Addictions, 6*(4), 445–456. <https://doi.org/10.1556/2006.6.2017.063>
- Lew-Starowicz, M., Lewczuk, K., Nowakowska, I., Kraus, S. W., & Gola, M. (2020). Compulsive sexual behavior and dysregulation of emotion. *Sexual Medicine Reviews, 8*(2), 191–205. <https://doi.org/10.1016/j.sxmr.2019.10.003>
- Lin, C.-Y., Tsai, M.-C., Koós, M., Nagy, L., Kraus, S. W., Demetrovics, Z., Potenza, M. N., Ballester-Arnal, R., Batthyány, D., Bergeron, S., Billieux, J., Briken, P., Cárdenas-López, G., Carvalho, J., Castro-Calvo, J., Chen, L., Ciocca, G., Corazza, O., Csako, R. I., ..., & Bőthe, B. (2024). The short version of the Sexual Distress Scale (SDS-3): Measurement invariance across countries, gender identities, and sexual orientations. *International Journal of Clinical and Health Psychology, 24*(2), <https://doi.org/10.1016/j.ijchp.2024.100461>
- Lykins, A. D., Janssen, E., & Graham, C. A. (2006). The relationship between negative mood and sexuality in heterosexual college women and men. *The Journal of Sex Research, 43*(2), 136–143. <https://doi.org/10.1080/00224490609552308>
- MacCallum, R. C., Wegener, D. T., Uchino, B. N., & Fabrigar, L. R. (1993). The problem of equivalent models in applications of covariance structure analysis. *Psychological Bulletin, 114*(1), 185–199. <https://doi.org/10.1037/0033-2909.114.1.185>

- MacCallum, R. C., Zhang, S., Preacher, K. J., & Rucker, D. D. (2002). On the practice of dichotomization of quantitative variables. *Psychological Methods*, 7(1), 19–40.  
<https://doi.org/10.1037/1082-989X.7.1.19>
- Mahar, E. A., Mintz, L. B., & Akers, B. M. (2020). Orgasm equality: Scientific findings and societal implications. *Current Sexual Health Reports*, 12(1), 24–32.  
<https://doi.org/10.1007/s11930-020-00237-9>
- Maier, M., & Lakens, D. (2022). Justify your alpha: A primer on two practical approaches. *Advances in Methods and Practices in Psychological Science*, 5(2), 1–12.  
<https://doi.org/10.1177/25152459221080396>
- Marchetti, I. (2023). The structure of compulsive sexual behavior: A network analysis study. *Archives of Sexual Behavior*, 52(4), 1271–1284. <https://doi.org/10.1007/s10508-023-02549-y>
- Mark, K.P. (2015). Sexual desire discrepancy. *Current Sexual Health Reports*, 7, 198–202.  
<https://doi.org/10.1007/s11930-015-0057-7>
- Mark, K.P., Janssen, E. & Milhausen, R.R. (2011). Infidelity in heterosexual couples: Demographic, interpersonal, and personality-related predictors of extradyadic sex. *Archives of Sexual Behavior*, 40, 971–982. <https://doi.org/10.1007/s10508-011-9771-z>
- Mark, K. P., & Lasslo, J. A. (2018). Maintaining sexual desire in long-term relationships: A systematic review and conceptual model. *The Journal of Sex Research*, 55(4–5), 563–581. <https://doi.org/10.1080/00224499.2018.1437592>
- Markon, K. E., Chmielewski, M., & Miller, C. J. (2011). The reliability and validity of discrete and continuous measures of psychopathology: A quantitative review. *Psychological Bulletin*, 137(5), 856–879. <https://doi.org/10.1037/a0023678>

- Maxwell, S. E., & Cole, D. A. (2007). Bias in cross-sectional analyses of longitudinal mediation. *Psychological Methods, 12*(1), 23–44. <https://doi.org/10.1037/1082-989X.12.1.23>
- McCabe, M. P., Sharlip, I. D., Lewis, R., Atalla, E., Balon, R., Fisher, A. D., Laumann, E., Lee, S. W., & Segraves, R. T. (2016). Incidence and prevalence of sexual dysfunction in women and men: A consensus statement from the Fourth International Consultation on Sexual Medicine 2015. *The Journal of Sexual Medicine, 13*(2), 144–152. <https://doi.org/10.1016/j.jsxm.2015.12.034>
- McCool, M. E., Zuelke, A., Theurich, M. A., Knuettel, H., Ricci, C., & Apfelbacher, C. (2016). Prevalence of female sexual dysfunction among premenopausal women: A systematic review and meta-analysis of observational studies. *Sexual Medicine Reviews, 4*(3), 197–212. <https://doi.org/10.1016/j.sxmr.2016.03.002>
- McGahuey, C. A., Gelenberg, A. J., Laukes, C. A., Moreno, F. A., Delgado, P. L., McKnight, K. M., & Manber, R. (2000). The Arizona sexual experience scale (ASEX): Reliability and validity. *Journal of Sex & Marital Therapy, 26*(1), 25–38. <https://doi.org/10.1080/009262300278623>
- McGraw, J. S., Grant Weinandy, J. T., Floyd, C. G., Hoagland, C., Kraus, S. W., & Grubbs, J. B. (2024). Problematic pornography use and suicidal thoughts: Results from cross-sectional and longitudinal analyses. *Psychology of Addictive Behaviors, 38*(6), 728–738. <https://doi.org/10.1037/adb0000996>
- McKeague, E. L. (2014). Differentiating the female sex addict: A literature review focused on themes of gender difference used to inform recommendations for treating women with sex addiction. *Sexual Addiction & Compulsivity, 21*(3), 203–224. <https://doi.org/10.1080/10720162.2014.931266>

- Meana, M. (2010). Elucidating women's (hetero)sexual desire: Definitional challenges and content expansion. *The Journal of Sex Research, 47*(2–3), 104–122.  
<https://doi.org/10.1080/00224490903402546>
- Meston, C. M., & Frohlich, P. F. (2000). The neurobiology of sexual function. *Archives of General Psychiatry, 57*(11), 1012–1030. <https://doi.org/10.1001/archpsyc.57.11.1012>
- Miner, M. H., Swinburne Romine, R., Raymond, N., Janssen, E., MacDonald, A. W., III, & Coleman, E. (2016). Understanding the personality and behavioral mechanisms defining hypersexuality in men who have sex with men. *The Journal of Sexual Medicine, 13*(8), 1323–1331. <https://doi.org/10.1016/j.jsxm.2016.06.015>
- Mitchell, K. R., Lewis, R., O’Sullivan, L. F., & Fortenberry, J. D. (2021). What is sexual wellbeing and why does it matter for public health? *The Lancet Public Health, 6*(8), e608–e613. [https://doi.org/10.1016/S2468-2667\(21\)00099-2](https://doi.org/10.1016/S2468-2667(21)00099-2)
- Mitchell, K. R., Mercer, C. H., Ploubidis, G. B., Jones, K. G., Datta, J., Field, N., Copas, A. J., Tanton, C., Erens, B., Sonnenberg, P., Clifton, S., Macdowall, W., Phelps, A., Johnson, A. M., & Wellings, K. (2013). Sexual function in Britain: Findings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3). *Lancet, 382*(9907), 1817–1829. [https://doi.org/10.1016/S0140-6736\(13\)62366-1](https://doi.org/10.1016/S0140-6736(13)62366-1)
- Moholy, M., Prause, N., Proudfit, G. H., S. Rahman, A., & Fong, T. (2015). Sexual desire, not hypersexuality, predicts self-regulation of sexual arousal. *Cognition and Emotion, 29*(8), 1505–1516. <https://doi.org/10.1080/02699931.2014.993595>
- Montgomery-Graham, S. (2017). Conceptualization and assessment of hypersexual disorder: A systematic review of the literature. *Sexual Medicine Reviews, 5*(2), 146–162.  
<https://doi.org/10.1016/j.sxmr.2016.11.001>

- Muise, A., Milhausen, R. R., Cole, S. L., & Graham, C. (2013). Sexual compulsivity in heterosexual married adults: The role of sexual excitation and sexual inhibition in individuals not considered “high-risk.” *Sexual Addiction & Compulsivity*, *20*(3), 192–209. <https://doi.org/10.1080/10720162.2013.786661>
- Nagy, L., Koós, M., Kraus, Dr. S. W., Demetrovics, Z., Potenza, M. N., Ballester-Arnal, R., Batthyány, D., Bergeron, S., Billieux, J., Briken, P., Burkauskas, J., Cárdenas-López, G., Carvalho, J., Castro-Calvo, J., Chen, L., Chen, J.-K., Ciocca, G., Corazza, O., Csako, R., ... Bóthe, B. (2025). Sexual assertiveness across cultures, genders, and sexual orientations: Validation of the short Sexual Assertiveness Questionnaire (SAQ-9). *Assessment*. Advance online publication. <https://doi.org/10.1177/10731911241312757>
- Nair, D., Pawar, A., Kalra, G., & Shah, N. (2013). An Indian study of hypersexual disorder in patients with anxiety and mood disorders. *Sexual Addiction & Compulsivity*, *20*(4), 292–305. <https://doi.org/10.1080/10720162.2013.814094>
- Nappi, R. E., Cucinella, L., Martella, S., Rossi, M., Tiranini, L., & Martini, E. (2016). Female sexual dysfunction (FSD): Prevalence and impact on quality of life (QoL). *Maturitas*, *94*, 87–91. [doi.org/10.1016/j.maturitas.2016.09.013](https://doi.org/10.1016/j.maturitas.2016.09.013)
- OpenAI. (2025). ChatGPT (version March–July) [Large language model]. <https://chat.openai.com/>
- Opitz, D. M., Tsytsarev, S. V., & Froh, J. (2009). Women’s sexual addiction and family dynamics, depression and substance abuse. *Sexual Addiction & Compulsivity*, *16*(4), 324–340. <https://doi.org/10.1080/10720160903375749>
- Ortega-Otero, M., Montesinos, F., & Charrabe, L. (2023). Influence of psychological inflexibility and mindfulness on hypersexuality and sexual satisfaction in a Spanish

sample. *Frontiers in Psychology*, 14, 1182222.

<https://doi.org/10.3389/fpsyg.2023.1182222>

- Pâquet, M., Rosen, N. O., Steben, M., Mayrand, M.-H., Santerre-Baillargeon, M., & Bergeron, S. (2018). Daily anxiety and depressive symptoms in couples coping with vulvodynia: Associations with women's pain, women's sexual function, and both partners' sexual distress. *The Journal of Pain*, 19(5), 552–561. <https://doi.org/10.1016/j.jpain.2017.12.264>
- Paquette, M.-M., Bergeron, S., Bigras, N., Koós, M., Nagy, L., Kraus, S. W., Demetrovics, Z., Potenza, M. N., Ballester-Arnal, R., Batthyány, D., Billieux, J., Briken, P., Burkauskas, J., Cárdenas-López, G., Carvalho, J., Castro-Calvo, J., Chen, L., Ciocca, G., Corazza, O., . . . Böthe, B. (2025). Sexual satisfaction across cultures, genders, languages, and sexual orientations: Validation of the Global Measure of Sexual Satisfaction. *Psychology of Sexual Orientation and Gender Diversity*. Advance online publication. <https://doi.org/10.1037/sgd0000774>
- Piemonte, J. L., Conley, T. D., & Guskova, S. (2019). Orgasm, gender, and responses to heterosexual casual sex. *Personality and Individual Differences*, 151, 109487. <https://doi.org/10.1016/j.paid.2019.06.030>
- Potenza, M. N., Gola, M., Voon, V., Kor, A., & Kraus, S. W. (2017). Is excessive sexual behaviour an addictive disorder? *The Lancet Psychiatry*, 4(9), 663–664. [https://doi.org/10.1016/S2215-0366\(17\)30316-4](https://doi.org/10.1016/S2215-0366(17)30316-4)
- Prause, N. (2017). Evaluate models of high-frequency sexual behaviors already. *Archives of Sexual Behavior*, 46(8), 2269–2274. <https://doi.org/10.1007/s10508-017-1078-2>
- Prause, N. (2019). Reward dysregulation in sexual function. In J. Gruber (Ed.), *The Oxford handbook of positive emotion and psychopathology* (Oxford Library of Psychology). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780190653200.013.23>

- Prause, N. (2024, April 6). *Leading clients to water: Hypersexuality and research-based methods to decrease distress*. [Conference presentation]. SSTAR 49<sup>th</sup> Annual Meeting, Toronto, ON, Canada.
- Prause, N., Steele, V. R., Staley, C., Sabatinelli, D., & Hajcak, G. (2016). Prause et al. (2015) the latest falsification of addiction predictions. *Biological Psychology*, *120*, 159–161.  
<https://doi.org/10.1016/j.biopsycho.2016.05.007>
- R Core Team. (2025). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria. <https://www.R-project.org>
- Rahm-Knigge, R. L., Gleason, N., Mark, K., O’Keefe, S., & Rettenberger, M. (2023). Identifying relationships between difficulties with emotion regulation and compulsive sexual behavior. *Archives of Sexual Behavior*, *52*, 3443–3455.  
<https://doi.org/10.1007/s10508-023-02690-8>
- Rahm-Knigge, R. L., Miner, M. H., & Coleman, E. (2022). Exploring coping strategies and social support among individuals with compulsive sexual behavior concerns: Results from a clinical sample. *Sexual Health & Compulsivity*, *30*(1), 22–37.  
<https://doi.org/10.1080/26929953.2022.2148796>
- Reid, R. C., Cooper, E. B., Prause, N., Li, D. S., & Fong, T. W. (2012a). Facets of perfectionism in a sample of hypersexual patients. *The Journal of Nervous and Mental Disease*, *200*(11), 990–995. <https://doi.org/10.1097/NMD.0b013e3182718d67>
- Reid, R. C., Dhuffar, M. K., Parhami, I., Fong, T. W. (2012b). Exploring facets of personality in a patient sample of hypersexual women compared with hypersexual men. *Journal of Psychiatric Practice* *18*(4), 262–268.  
<https://doi.org/10.1097/01.pra.0000416016.37968.eb>

- Reis, S. C., Park, K. E., Dionne, M. M., Kim, H. S., & Scanavino, M. D. T. (2023). Symptoms of depression (not anxiety) mediate the relationship between childhood sexual abuse and compulsive sexual behaviors in men. *Brazilian Journal of Psychiatry*, 45(1), 38–45. <https://doi.org/10.47626/1516-4446-2022-2584>
- Rettenberger, M., Klein, V., & Briken, P. (2016). The relationship between hypersexual behavior, sexual excitation, sexual inhibition, and personality traits. *Archives of Sexual Behavior*, 45, 219–233. <https://doi.org/10.1007/s10508-014-0399-7>
- Ross, C. J. (1996). A qualitative study of sexually addicted women. *Sexual Addiction & Compulsivity*, 3(1), 43–53. <https://doi.org/10.1080/10720169608400099>
- Rothmüller, B. (2024). Too much or not enough? Self-reported experiences of relational distress based on level of sexual desire. *Psychology & Sexuality*, 1–16. <https://doi.org/10.1080/19419899.2024.2414338>
- Sánchez-Fuentes, M. M., Moyano, N., Granados, R., & Sierra, J. C. (2019). Validation of the Spanish version of the Arizona Sexual Experience Scale (ASEX) using self-reported and psychophysiological measures. *Revista Iberoamericana de Psicología y Salud*, 10(1), 1–14. <https://doi.org/10.23923/j.rips.2018.02.021>
- Sassover, E., & Weinstein, A. (2022). Should compulsive sexual behavior (CSB) be considered as a behavioral addiction? A debate paper presenting the opposing view. *Journal of Behavioral Addictions*, 11(2), 166–179. <https://doi.org/10.1556/2006.2020.00055>
- Scanavino, M. D. T., Ventuneac, A., Abdo, C. H. N., Tavares, H., Amaral, M. L. S., Messina, B., Reis, S. C., Martins, J. P. L. B., & Parsons, J. T. (2018). Sexual compulsivity, anxiety, depression, and sexual risk behavior among treatment-seeking men in São Paulo, Brazil. *Revista Brasileira de Psiquiatria*, 40(4), 424–431. <https://doi.org/10.1590/1516-4446-2017-2476>

- Schultz, K., Hook, J. N., Davis, D. E., Penberthy, J. K., & Reid, R. C. (2014). Nonparaphilic hypersexual behavior and depressive symptoms: A meta-analytic review of the literature. *Journal of Sex & Marital Therapy, 40*(6), 477–487. <https://doi.org/10.1080/0092623X.2013.772551>
- Scoglio, A. A. J., Chen, Y.-L., Huang, K.-J., Borgogna, N. C., Potenza, M. N., Blycker, G. R., & Kraus, S. W. (2025). Sexual trauma and compulsive sexual behavior in young men and women: A network analysis involving two samples. *Journal of Behavioral Addictions, 14*(1), 166–177. <https://doi.org/10.1556/2006.2024.00074>
- Sellbom, M., & Tellegen, A. (2019). Factor analysis in psychological assessment research: Common pitfalls and recommendations. *Psychological Assessment, 31*(12), 1428–1441. <https://doi.org/10.1037/pas0000623>
- Shifren, J. L., Monz, B. U., Russo, P. A., Segreti, A., & Johannes, C. B. (2008). Sexual problems and distress in United States women: Prevalence and correlates. *Obstetrics & Gynecology, 112*(5), 970–978. <https://doi.org/10.1097/AOG.0b013e3181898cdb>
- Shivakumar, B. K., Vaibhavi, P. S., & Devasia, J. (2024). Young adults with depression exhibiting symptoms akin to compulsive sexual behavior: A case series. *Journal of Psychosexual Health, 6*(4), 381–385. <https://doi.org/10.1177/26318318241298994>
- Shrout, P. E. (2011). Commentary: Mediation analysis, causal process, and cross-sectional data. *Multivariate Behavioral Research, 46*(5), 852–860. <https://doi.org/10.1080/00273171.2011.606718>
- Sierra, J. C., Mangas, P., Guillén-Riquelme, A., & Muñoz-García, L. E. (2023). Measurement invariance of the Arizona Sexual Experience Scale by sexual orientation: Comparing the sexual functioning of gay and heterosexual individuals. *The Journal of Sexual Medicine, 20*(5), 684–689. <https://doi.org/10.1093/jsxmed/qdad029>

- Simmons, J. P., Nelson, L. D., & Simonsohn, U. (2011). False-positive psychology: Undisclosed flexibility in data collection and analysis allows presenting anything as significant. *Psychological Science*, *22*(11), 1359–1366. <https://doi.org/10.1177/0956797611417632>
- Slavin, M. N., Blycker, G. R., Potenza, M. N., Bóthe, B., Demetrovics, Z., & Kraus, S. W. (2020a). Gender-related differences in associations between sexual abuse and hypersexuality. *The Journal of Sexual Medicine*, *17*(10), 2029–2038. <https://doi.org/10.1016/j.jsxm.2020.07.008>
- Slavin, M. N., Scoglio, A. A. J., Blycker, G. R., Potenza, M. N., & Kraus, S. W. (2020b). Child sexual abuse and compulsive sexual behavior: A systematic literature review. *Current Addiction Reports*, *7*(1), 76–88. <https://doi.org/10.1007/s40429-020-00298-9>
- Spector, I. P., Carey, M. P., & Steinberg, L. (1996). The Sexual Desire Inventory: Development, factor structure, and evidence of reliability. *Journal of Sex & Marital Therapy*, *22*(3), 175–190. <https://doi.org/10.1080/00926239608414655>
- Stephenson, K.R., & Meston, C.M. (2012). Consequences of impaired female sexual functioning: Individual differences and associations with sexual distress. *Sexual and Relationship Therapy*, *27*(4), 1–14. <https://doi.org/10.1080/14681994.2012.738905>
- Storholm, E. D., Satre, D. D., Kapadia, F., Halkitis, P. N., & Golub, S. A. (2016). Depression, compulsive sexual behavior, and sexual risk-taking among urban young gay and bisexual men: The P18 cohort study. *Archives of Sexual Behavior*, *45*(6), 1431–1441. <https://doi.org/10.1007/s10508-015-0566-5>
- Štulhofer, A., Bergeron, S., & Jurin, T. (2016a). Is high sexual desire a risk for women’s relationship and sexual well-being? *The Journal of Sex Research*, *53*(7), 882–891. <https://doi.org/10.1080/00224499.2015.1084984>

- Štulhofer, A., Jelovica, V., & Ružić, J. (2008). Is early exposure to pornography a risk factor for sexual compulsivity? Findings from an online survey among young heterosexual adults. *International Journal of Sexual Health, 20*(4), 270–280.  
<https://doi.org/10.1080/19317610802411870>
- Štulhofer, A., Jurin, T., & Briken, P. (2016b). Is high sexual desire a facet of male hypersexuality? Results from an online study. *Journal of Sex & Marital Therapy, 42*(8), 665–680. <https://doi.org/10.1080/0092623X.2015.1113585>
- Stupiansky, N. W., Reece, M., Middlestadt, S. E., Finn, P., & Sherwood-Laughlin, C. (2009). The role of sexual compulsivity in casual sexual partnerships among college women. *Sexual Addiction & Compulsivity, 16*(3), 241–252.  
<https://doi.org/10.1080/10720160903202760>
- Tavakol, M., & Wetzel, A. (2020). Factor analysis: A means for theory and instrument development in support of construct validity. *International Journal of Medical Education, 11*, 245–247. <https://doi.org/10.5116/ijme.5f96.0f4a>
- Terlizzi, E. P., & Zablotsky, B. (2024, November 7). *Symptoms of anxiety and depression among adults: United States, 2019 and 2022* (National Health Statistics Reports No. 213). U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics. <https://www.cdc.gov/nchs/products/index.htm>
- Thoemmes, F. (2015a). Empirical evaluation of directional-dependence tests. *International Journal of Behavioral Development, 39*(6), 560-569.  
<https://doi.org/10.1177/0165025415582055>
- Thoemmes, F. (2015b). Reversing arrows in mediation models does not distinguish plausible models. *Basic and Applied Social Psychology, 37*(4), 226–234.  
<https://doi.org/10.1080/01973533.2015.1049351>

- Toates, F. (2022). A motivation model of sex addiction—Relevance to the controversy over the concept. *Neuroscience & Biobehavioral Reviews*, *142*, 104872.  
<https://doi.org/10.1016/j.neubiorev.2022.104872>
- Vaillancourt-Morel, M.-P., Godbout, N., Sabourin, S., Briere, J., Lussier, Y., & Runtz, M. (2016). Adult sexual outcomes of child sexual abuse vary according to relationship status. *Journal of Marital and Family Therapy*, *42*(2), 341–356.  
<https://doi.org/10.1111/jmft.12154>
- Vaillancourt-Morel, M.-P., Bergeron, S., Gewirtz-Meydan, A., Zippan, N., Nagy, L., Koós, M., Kraus, S. W., Demetrovics, Z., Potenza, M. N., International Sex Survey Consortium, & Bőthe, B. (2025). For whom is sexual abuse related to compulsive sexual behaviors? Timing of abuse and sociodemographic characteristics as potential moderators across 42 countries. *Archives of Sexual Behavior*, *54*, 2249–2268. <https://doi.org/10.1007/s10508-025-03162-x>
- van Anders, S. M., Herbenick, D., Brotto, L. A., Harris, E. A., & Chadwick, S. B. (2022). The heteronormativity theory of low sexual desire in women partnered with men. *Archives of Sexual Behavior*, *51*, 391–415. <https://doi.org/10.1007/s10508-021-02100-x>
- Walton, M.T., Bhullar, N. (2018). Hypersexuality, higher rates of intercourse, masturbation, sexual fantasy, and early sexual interest relate to higher sexual excitation/arousal. *Archives of Sexual Behavior*, *47*, 2177–2183.  
<https://doi.org/10.1007/s10508-018-1230-7>
- Walton, M. T., Cantor, J. M., Bhullar, N., & Lykins, A. D. (2017). Hypersexuality: A critical review and introduction to the “sexhavior cycle.” *Archives of Sexual Behavior*, *46*, 2231–2251. [doi.org/10.1007/s10508-017-0991-8](https://doi.org/10.1007/s10508-017-0991-8)

- Welch, B. L. (1947). The generalization of “Student’s” problem when several different population variances are involved. *Biometrika*, *34*(1–2), 28–35.  
<https://doi.org/10.1093/biomet/34.1-2.28>
- Wiedermann, W., & Hirni, M. (2025). dda: Direction Dependence Analysis.  
<https://doi.org/10.32614/CRAN.package.dda>
- Wiedermann, W., Li, X., & von Eye, A. (2021). Direction dependence analysis: Statistical foundations and applications. In W. Wiedermann, D. Kim, E. A. Sungur & A. von Eye (Eds.), *Direction dependence in statistical modeling: Methods of analysis* (pp. 9–46). Wiley.
- Wiedermann, W., & von Eye, A. (2015). Direction-dependence analysis: A confirmatory approach for testing directional theories. *International Journal of Behavioral Development*, *39*(6), 570–580. <https://doi.org/10.1177/0165025415582056>
- Wiesner, M., Chen, V., Windle, M., Elliott, M. N., Grunbaum, J. A., Kanouse, D. E., & Schuster, M. A. (2010). Factor structure and psychometric properties of the Brief Symptom Inventory-18 in women: A MACS approach to testing for invariance across racial/ethnic groups. *Psychological Assessment*, *22*(4), 912–922. <https://doi.org/10.1037/a0020704>
- Winters, J. (2010). Hypersexual disorder: A more cautious approach. *Archives of Sexual Behavior*, *39*(3), 594–596. <https://doi.org/10.1007/s10508-010-9607-2>
- Winters, J., Christoff, K., & Gorzalka, B. B. (2010). Dysregulated sexuality and high sexual desire: Distinct constructs? *Archives of Sexual Behavior*, *39*, 1029–1043.  
<https://doi.org/10.1007/s10508-009-9591-6>
- World Economic Forum. (2024). *The Global Gender Gap Report 2024*. Retrieved from <https://www.weforum.org/publications/global-gender-gap-report-2024>

World Health Organization. (2019). *International classification of diseases for mortality and morbidity statistics (11th ed.)*. <https://icd.who.int/en>

Zabora, J., BrintzenhofeSzoc, K., Curbow, B., Hooker, C., & Piantadosi, S. (2001). The prevalence of psychological distress by cancer site. *Psycho-Oncology*, *10*(1), 19–28. [https://doi.org/10.1002/1099-1611\(200101/02\)10:1<19::AID-PON501>3.0.CO;2-6](https://doi.org/10.1002/1099-1611(200101/02)10:1<19::AID-PON501>3.0.CO;2-6)

Zheng, J., Skiba, M. A., Bell, R. J., Islam, R. M., & Davis, S. R. (2020). The prevalence of sexual dysfunctions and sexually related distress in young women: a cross-sectional survey. *Fertility and Sterility*, *113*(2), 426-434. <https://doi.org/10.1016/j.fertnstert.2019.09.027>

## Appendices

### Appendix A: Compulsive Sexual Behavior Disorder Scale (CSBD-19)

Sex is defined as any activity or behavior that stimulates or arouses a person with the intent to produce an orgasm or sexual pleasure (e.g., self-masturbation or solo sex, using pornography, intercourse with a partner, oral sex, anal sex, etc.). Sexual behaviors may or may not involve a partner.

Below are a number of statements that describe various thoughts, feelings, and behaviors about sex. Please, think back to the past six months and indicate on the following 4-point scale to what extent the statements apply to you. There are no right or wrong answers.

*Totally disagree (1)*      *Somewhat disagree (2)*      *Somewhat agree (3)*      *Totally agree (4)*

1. Even though my sexual behavior was irresponsible or reckless, I found it difficult to stop.
2. Sex has been the most important thing in my life.
3. I was able to resist my sexual urges for only a little while before I surrendered to them.
4. I had sex even when I did not enjoy it anymore.
5. My sexual urges and impulses changed me in a negative way.
6. I could not control my sexual cravings and desires.
7. I would rather have had sex than to have done anything else.
8. Trying to reduce the amount of sex I had almost never worked.
9. Although sex was not as satisfying for me as before, I engaged in it.
10. I did not accomplish important tasks because of my sexual behavior.
11. My sexual desires controlled me.
12. When I could have sex, everything else became irrelevant.
13. I was not successful in reducing the amount of sex I had.
14. Although my sex life was not as satisfying as it had been before, I had sex.
15. My sexual activities interfered with my work and/or education.
16. My sexual behaviors had negative impact on my relationships with others.
17. I have been upset because of my sexual behaviors.
18. My sexual activities interfered with my ability to experience healthy sex.
19. I often found myself in an embarrassing situation because of my sexual behavior.

## **Appendix B: Brief Symptom Inventory (BSI-18)**

During the past 7 days, how much were you distressed by:

*Not at all (0)*      *A little bit (1)*      *Moderately (2)*      *Quite a bit (3)*      *Extremely (4)*

### ***Anxiety items***

1. Nervousness or shakiness inside
2. Suddenly scared for no reason
3. Feeling fearful
4. Feeling tense or keyed up
5. Spells of terror or panic
6. Feeling so restless you couldn't sit still

### ***Depression items***

7. Thoughts of ending your life
8. Feeling lonely
9. Feeling blue
10. Feeling no interest in things
11. Feeling hopeless about the future
12. Feelings of worthlessness

## Appendix C: Sexual Desire Inventory (SDI-2)

This questionnaire asks about your level of sexual desire. By desire, we mean interest in or wish for sexual activity. For each item, please indicate which answer shows your thoughts and feelings.

<i>Not at all</i> (1)	<i>Once a month</i> (2)	<i>Once every two weeks</i> (3)	<i>Once a week</i> (4)	<i>Twice a week</i> (5)	<i>3 or 4 times a week</i> (6)	<i>Once a day</i> (7)	<i>More than once a day</i> (8)
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1. During the last month, how often would you have liked to engage in sexual activity with a partner (for example, touching each other's genitals, giving or receiving oral stimulation, intercourse, etc.)?
2. During the last month, how often have you had sexual thoughts involving a partner?

<i>No desire</i> (0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	<i>Strong desire</i> (8)
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3. When you have sexual thoughts, how strong is your desire to engage in sexual behavior with a partner?
4. When you first see an attractive person, how strong is your sexual desire?
5. When you spend time with an attractive person (for example, at work or school), how strong is your sexual desire?
6. When you are in romantic situations (such as a candle lit dinner, a walk on the beach, etc.), how strong is your sexual desire?
7. How strong is your desire to engage in sexual activity with a partner?

*Not at all* *(1)* *(2)* *(3)* *(4)* *(5)* *(6)* *(7)* *Extremely*  
*important* *(0)* *(1)* *(2)* *(3)* *(4)* *(5)* *(6)* *(7)* *important*  
*(0)* *(1)* *(2)* *(3)* *(4)* *(5)* *(6)* *(7)* *(8)*

8. How important is it for you to fulfill your sexual desire through activity with a partner?

*Much less* *(1)* *(2)* *(3)* *(4)* *(5)* *(6)* *(7)* *Much more*  
*desire* *(0)* *(1)* *(2)* *(3)* *(4)* *(5)* *(6)* *(7)* *desire*  
*(0)* *(1)* *(2)* *(3)* *(4)* *(5)* *(6)* *(7)* *(8)*

9. Compared to other people of your age and sex, how would you rate your desire to behave sexually with a partner?

*Not at all* *Once a* *Once every* *Once a* *Twice a* *3 or 4* *Once a* *More*  
*month* *two weeks* *week* *week* *times a* *day* *than once*  
*(1)* *(2)* *(3)* *(4)* *(5)* *week (6)* *(7)* *a day (8)*

10. During the last month, how often would you have liked to behave sexually by yourself (for example, masturbating, touching your genitals etc.)?

*No desire* *(1)* *(2)* *(3)* *(4)* *(5)* *(6)* *(7)* *Strong desire*  
*(0)* *(1)* *(2)* *(3)* *(4)* *(5)* *(6)* *(7)* *(8)*

11. How strong is your desire to engage in sexual behavior by yourself?

*Not at all* *(1)* *(2)* *(3)* *(4)* *(5)* *(6)* *(7)* *Extremely*  
*important* *(0)* *(1)* *(2)* *(3)* *(4)* *(5)* *(6)* *(7)* *important*  
*(0)* *(1)* *(2)* *(3)* *(4)* *(5)* *(6)* *(7)* *(8)*

12. How important is it for you to fulfill your desires to behave sexually by yourself?

<i>Much less</i>									<i>Much more</i>
<i>desire</i>									<i>desire</i>
(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	

13. Compared to other people of your age and sex, how would you rate your desire to behave sexually by yourself?

<i>Forever</i>	<i>A year</i>	<i>Several</i>	<i>A month</i>	<i>A few</i>	<i>A week</i>	<i>A few</i>	<i>One day</i>	<i>Less</i>
	<i>or two</i>	<i>months</i>		<i>weeks</i>		<i>days</i>		<i>than a day</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

14. How long could you go comfortably without having sexual activity of some kind?

## Appendix D: Arizona Sexual Experience Scale (ASEX)

For each item, please indicate your overall level during the past week, including today.

<i>Extremely strong (1)</i>	<i>Very strong (2)</i>	<i>Somewhat strong (2)</i>	<i>Somewhat weak (4)</i>	<i>Very weak (5)</i>
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1. How strong is your sex drive?

<i>Extremely easily (1)</i>	<i>Very easily (2)</i>	<i>Somewhat easily (2)</i>	<i>Somewhat difficult (4)</i>	<i>Very difficult (5)</i>
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2. How easily are you sexually aroused (turned on)?

3. How easily does your vagina become moist or wet during sex?

4. How easily can you reach an orgasm?

<i>Extremely satisfying (1)</i>	<i>Very satisfying (2)</i>	<i>Somewhat satisfying (2)</i>	<i>Somewhat unsatisfying (4)</i>	<i>Very unsatisfying (5)</i>
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5. Are your orgasms satisfying?

## Appendix E: Sexual Distress Scale (SDS-3)

Below is a list of feelings and problems that people sometimes have concerning their sexuality. Please read each item carefully, and select the answer option that best describes how often that the problem has bothered you or caused you distress during the past 30 days.

How often did you feel...

*Never (0)*      *Rarely (1)*      *Occasionally (2)*      *Frequently (3)*      *Always (4)*

1. Distressed about your sex life?
2. Inferior because of sexual problems?
3. Worried about sex?

## Appendix F: Short UPPS-P Impulsivity Scale (UPPS-P)

Below are a number of statements that describe ways in which people act and think. For each statement, please indicate how much you agree or disagree with the statement. Be sure to indicate your agreement or disagreement for every statement below.

*Disagree strongly (4)*      *Disagree some (3)*      *Agree some (2)*      *Agree strongly (1)*

### ***Sensation-seeking items***

- 3. I sometimes like doing things that are a bit frightening.
  
- 9. I quite enjoy taking risks.
  
- 14. I generally seek new and exciting experiences and activities.
  
- 18. I welcome new and exciting experiences and sensations, even if they are a little frightening and unconventional.

## Appendix G: Global Measure of Sexual Satisfaction (GMSEX)

Overall, how would you describe your sexual relationship with your partner?

For each pair of words, mark the number which best describes your sexual relationship.

<i>Very bad</i>						<i>Very good</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)

<i>Very unpleasant</i>						<i>Very pleasant</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)

<i>Very negative</i>						<i>Very positive</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)

<i>Very unsatisfying</i>						<i>Very satisfying</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)

<i>Worthless</i>						<i>Very valuable</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)

## **Appendix H: Relationship Assessment Scale (RAS-1)**

In general, how satisfied are you with your relationship?

*I am not satisfied. (1)*

*I am rather not satisfied. (2)*

*I am somewhat satisfied. (3)*

*I am rather satisfied. (4)*

*I am very satisfied. (5)*