



Compulsive sexual behavior disorder (CSBD) and problematic pornography use (PPU): A comprehensive, interdisciplinary, and expert-informed narrative review with suggested future directions

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ABSTRACT

Background and aims: The nature and classification of dysregulated sexual behaviors remain widely debated. Compulsive Sexual Behavior Disorder (CSBD) and Problematic Pornography Use (PPU) are the two most commonly studied constructs in this area, each carrying significant implications for mental health, interpersonal functioning, and broader well-being. Although scientific output on these topics has expanded rapidly in the past decade, recent reviews have tended to focus on specific subthemes, single constructs, or narrow disciplinary perspectives. Accordingly, this review provides an updated and interdisciplinary overview of empirical and theoretical knowledge. **Methods:** In this narrative review, we summarize current knowledge regarding CSBD and PPU, with contributions from diverse experts across multiple disciplines (e.g., psychology, psychiatry, sexology, addiction science, neuroscience). We provide research and clinical perspectives to ensure a comprehensive and balanced discussion. **Results:** We extensively summarize eleven key areas, namely historical context, conceptualization and symptomatology, assessment and measurement, epidemiology, co-occurring disorders, etiology, potential negative consequences, intervention, treatment, and policy considerations. Additionally, we consider underrepresented populations and contexts, including adolescents, LGBTQ+ (i.e., lesbian, gay, bisexual, trans, queer, and other diverse identities) individuals, women, and cultural factors. The review concludes with a critical discussion of prevailing controversies, methodological challenges, and key directions for future research. **Discussion and Conclusions:** By providing a comprehensive and integrative overview, this work aims to advance scientific discourse, promote interdisciplinary collaborations, inform clinical practice, and support public health initiatives in the field of CSBD and PPU.

KEYWORDS

compulsive sexual behavior disorder, problematic pornography use, hypersexual behavior, out-of-control sexual behavior, addiction, impulsive behavior, addictive behavior, erotica, sexual behavior, compulsive behavior, behavioral addiction

1. INTRODUCTION

Throughout history, various religious and philosophical traditions (e.g., Christianity, Buddhism) have acknowledged out-of-control sexual behaviors, typically framing them as moral or social failings rather than mental health concerns (Brown, 2008; Cabezón, 1992, 2017). The medicalization of “immoral” or “abnormally increased” sexual desire began in the late 19th century (Krafft-Ebing, 1886), followed by early 20th-century case studies offering alternative conceptualizations (Coleman, 1991; Grubbs et al., 2020a; Levine & Trolden, 1988). The first classificatory recognition appeared in 1948, when the sixth edition of the ICD (WHO, 1948) listed “Pathological Sexuality” under psychopathic personality; later editions (ICD-7, ICD-8) categorized excessive sexual drive under personality disorders (WHO, 1957, 1968), and ICD-9 (WHO, 1978) introduced a more specific diagnosis for “Excessive Sexual Drive”. Similar issues appeared in the DSM-III (APA, 1980) under Psychosexual Disorder Not Otherwise Specified (e.g., Don Juanism, Nymphomania). Additional historical developments are summarized in Fig. 1 (Kowalewska & Lew-Starowicz, 2021; Markovic, 2019).

The late 1970s–1980s saw increased attention to out-of-control sexual behaviors, with the emergence of terms such as

“sexual addiction,” “hyperphilia,” “sexual compulsivity,” and “sexual impulsivity” (e.g., Barth & Kinder, 1987; Carnes, 1983; Coleman, 1987; Money, 1986; Orford, 1978; Quadland, 1985). This period featured influential books (e.g., Carnes, 1983), the growth of 12-step groups (e.g., Sex and Love Addicts Anonymous; Andersson, Carlström, Amroussia, & Lindroth, 2024), and dedicated conferences (e.g., National Conference on Sexual Compulsivity/Addiction; Coleman, 2017). These developments likely shaped the DSM-III-R (APA, 1987), which referenced “non-paraphilic sexual addiction,” although the term was removed in DSM-IV (APA, 1994), reflecting concerns about diagnostic clarity, scientific validity, and a lack of professional consensus regarding the addiction conceptualization (Schneider & Irons, 1996).

During the 1990s–2000s, both the ICD-10 (WHO, 1992) and DSM-IV (APA, 1994, 2000) continued to reference out-of-control sexual behaviors under Excessive Sexual Drive and Other Sexual Disorders Not Otherwise Specified (Briken et al., 2024). Following accumulating research (especially into “paraphilic-related disorders”; Briken, Habermann, Kafka, Berner, & Hill, 2006; Kafka, 1994), a major turning point came in the 2010s with the proposal of a dedicated diagnostic category - Hypersexual Disorder (HD) - for inclusion in the DSM-5 (Kafka, 2010). Although the Sexual

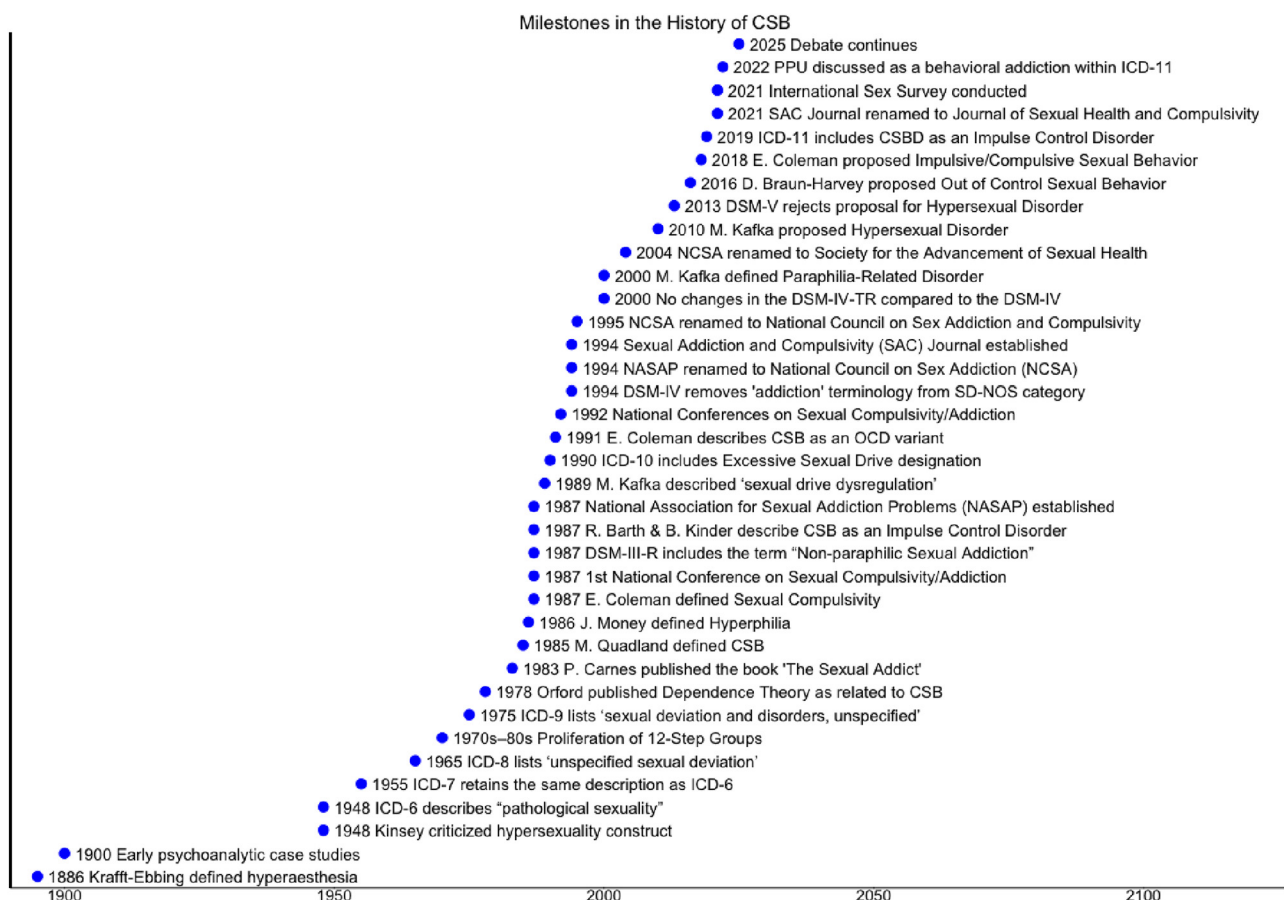


Fig. 1. Timeline of key milestones in the history of CSBD inquiry

Note: CSB: Compulsive sexual behavior, DSM: Diagnostic and Statistical Manual of Mental Health Disorders, ICD: International Classification of Diseases, TR: text revision.

and Gender Identity Disorders DSM-5 Task Force Committee ultimately rejected its inclusion (primarily due to insufficient empirical data, among other concerns; see Kafka, 2014; Piquet-Pessôa, Ferreira, Melca, & Fontenelle, 2014; Reid & Kafka, 2014), the proposal catalyzed empirical research and progressively standardized nomenclature (Kaplan & Krueger, 2010; Montgomery-Graham, 2017a), theoretical refinement (Coleman et al., 2018; Herring, 2017; Kraus et al., 2018; Vigorito & Braun-Harvey, 2017; Walton, Cantor, Bhullar, & Lykins, 2017), and treatment advances (Derbyshire & Grant, 2015).

Growing evidence contributed to the ICD-11's removal of "Excessive Sexual Desire" from sexual disorders (WHO, 2022) and the introduction of Compulsive Sexual Behavior Disorder (CSBD) as an Impulse Control Disorder (6C72). Through the ICD-11, CSBD is characterized by a persistent pattern of impaired control over sexual urges and behavior despite recognizable negative consequences and/or clinically relevant psychological distress, and may involve prioritizing sexual activity over important obligations or engaging in unsuccessful attempts to reduce such behavior (WHO, 2022). These difficulties can manifest across problematic pornography use (PPU), solitary sexual behaviors (e.g., masturbation), and interpersonal sexual activity (see Section 2 *Definition and Symptomatology*; Grubbs et al., 2024; Kraus et al., 2018; Reid et al., 2012).

1.1. The current review

Despite CSBD's formal recognition in the ICD-11, debates persist regarding its classification, conceptualization, etiology, and treatment, among other issues (e.g., Borgogna & Aita, 2022; Brand & Potenza, 2023; Bőthe, Koós, & Demetrovics, 2022; Castro-Calvo et al., 2022; Lew-Starowicz & Coleman, 2022). Chief among these debates is whether CSBD and/or PPU align with a behavioral addiction model (as is the case for Gambling Disorder in the DSM-V and ICD-11 and Internet Gaming Disorder in the ICD-11; see Section 6 *Etiology* and Section 11 *Controversies, knowledge gaps, and future directions*).

Although scientific output on CSBD and PPU has markedly accelerated (with publication rates approximately doubling since the early 2010s; De Luca et al., 2025; Grubbs et al., 2020a; Zhang, Wang, Gao, & Wang, 2025), no large-scale synthesis has integrated perspectives across psychology, psychiatry, sexology, addiction science, and neuroscience. The last major field-wide syntheses (de Alarcón, de la Iglesia, Casado, & Montejo, 2019; Grubbs et al., 2020a) are now several years old and predate both the ICD-11 diagnosis and the subsequent acceleration of empirical work. More recent reviews tended to focus on narrow subdomains (e.g., neurobiology, assessment, treatment), single constructs (CSBD or PPU), or discipline-specific perspectives, resulting in a fragmented evidence base. A comprehensive, updated interdisciplinary review is therefore needed to consolidate this burgeoning literature, integrate currently siloed findings, and support greater conceptual, methodological, and clinical coherence across disciplines.

This review addresses these gaps by providing an updated, comprehensive interdisciplinary synthesis of the current state of the scientific literature and offers recommendations to help resolve ongoing conceptual and empirical debates. The manuscript covers definitions, assessments, epidemiology, co-occurring disorders, etiology, potential negative consequences, intervention and treatment approaches, policy issues, and considerations regarding special populations. We conclude by highlighting unresolved, controversial, or understudied questions and proposing directions for future research.

The manuscript was written by experts across psychology, psychiatry, sexology, addiction science, and neuroscience, ensuring balanced and integrative coverage (Briken et al., 2024; Bőthe, Potenza, & Demetrovics, 2024b). Throughout, we use the term CSBD to align with ICD-11 nomenclature. Because most studies focus on either CSBD (~66%) or PPU (28%, potentially due to pornography's global availability and dominance over other media genres; Grubbs et al., 2020a; Lewczuk, Wójcik, & Gola, 2022; Wright, Tokunaga, & Herbenick, 2023, 2025), we use CSBD/PPU when referring to findings relevant to both. We specify when results apply exclusively to one construct and distinguish CSB (symptoms) from CSBD (clinical diagnosis) where appropriate (Briken & Turner, 2022; Kürbitz & Briken, 2021).

2. DEFINITION AND SYMPTOMATOLOGY

Experiencing diminished control over partnered or solitary sexual behavior may lead to distress and measurable negative consequences, resulting in treatment-seeking in some cases (Gola, Lewczuk, & Skorko, 2016). Clinicians and researchers have long sought to classify such concerns, suggesting potential roles for self-regulation (Kafka, 2010; Lew-Starowicz, Lewczuk, Nowakowska, Kraus, & Gola, 2020; Testa, Villena-Moya, & Chiclana-Actis, 2024), compulsivity and impulsivity (Raymond, Coleman, & Miner, 2003), features of addictions (Gola et al., 2017), trauma history (Coleman et al., 2018), or moral beliefs (Grubbs & Floyd, 2025; Grubbs & Perry, 2019) in sexual behavior. The inclusion of CSBD in the ICD-11 represents an attempt at consensus by balancing multiple perspectives as it incorporates a compulsivity label, classifies the condition as an impulse control disorder, outlines criteria resembling those of addictive behaviors, and excludes concerns related solely to moral judgements or disapproval (Brand, Antons, et al., 2025; Gola & Kraus, 2021; Kraus et al., 2018). Table 1 presents the different criteria sets across conceptualizations, while more detailed comparisons are provided elsewhere (e.g., Bőthe et al., 2022; Wéry & Billieux, 2017).

2.1. CSBD definition and symptomatology

As defined in the ICD-11, CSBD is a persistent pattern of failure to control intense and repetitive sexual impulses or behaviors that persists for at least six months, prioritizing sexual activity over responsibilities, resulting in significant distress or impairment of functioning, failed attempts to

Table 1. Diagnostic criteria for CSBD/PPU assessed by the selected instruments

Domain	Instrument	Impaired control	Salience/ pre-occupation	Unsuccessful efforts to control (relapse)	Engagement despite...		Personal distress, impairment, and negative consequences in different domains	Coping through sex in response to...		Tolerance	Withdrawal	Craving
					...deriving little or no satisfaction (dissatisfaction)	...harm or adverse consequences		... negative emotions	... stress			
Diagnosis	DSM-V HD proposed criteria*	✓	✓	✓	–	✓	✓	✓	✓	–	–	✓
CSBD	ICD-11 CSBD criteria*	✓	✓	✓	✓	✓	✓	–	–	–	–	✓
	Sexual Compulsivity Scale (SCS) (Kalichman & Rompa, 1995)	✓	✓	–	–	–	✓	–	–	–	–	–
	Hypersexual Behavior Inventory (HBI) (Reid et al., 2011, 2012)	✓	✓	✓	–	✓	✓	✓	✓	–	–	–
	Compulsive Sexual Behavior Inventory (CSBI-13) (Miner et al., 2017)	✓	✓	–	–	–	✓	✓	✓	–	–	–
	Compulsive Sexual Behavior Inventory Short Form (CSBI-SF)	✓	✓	–	–	–	–	✓	✓	–	–	–
	Compulsive Sexual Behavior Disorder Scale (CSBD-19) (Böthe et al., 2020b)	✓	✓	✓	✓	✓	✓	–	–	–	–	–
	Compulsive Sexual Behavior Disorder Scale (CSBD-7) (Böthe et al., 2023)	✓	✓	✓	✓	–	✓	–	–	–	–	–
	Compulsive Sexual Behavior Disorder-Diagnostic Inventory (CSBD-DI) (Grubbs et al., 2023)	✓	✓	✓	✓	✓	✓	–	–	–	–	–
	Brief Pornography Screen (BPS, Kraus et al., 2020)	✓	–	✓	–	–	✓	✓	–	–	–	✓
PPU	Cyber Pornography Use Inventory-9 (CPUI-9; Grubbs et al., 2015)	✓	✓	–	–	–	✓	–	–	–	–	–

(continued)

Table 1. Continued

Domain	Instrument	Impaired control	Salience/ pre-occupation	Unsuccessful efforts to control (relapse)	Engagement despite...		Personal distress, impairment, and negative consequences in different domains	Coping through sex in response to...			Tolerance	Withdrawal	Craving
					...deriving little or no satisfaction (dissatisfaction)	...harm or adverse consequences		...	negative emotions	...			
Problematic Pornography Consumption Scale-18 (PPCS, Bóthe et al., 2018)	Problematic Pornography Consumption Scale-6 (PPCS-6, Bóthe et al., 2021c)	✓	✓	✓	-	-	✓	✓	✓	✓	✓	✓	-
		✓	✓	✓	-	-	✓	-	-	✓	✓	✓	-
		✓	✓	✓	-	✓	✓	✓	-	-	-	-	-

Note: *the DSM-V and ICD-11 diagnostic criteria for HD and CSBD are included for comparison purposes. See Bóthe et al. (2022) for further comparisons between CSBD, HD, Impulse Control Disorders, Obsessive-Compulsive Disorder, Alcohol Use Disorder, and Gambling Disorder as defined in the DSM and ICD.

reduce such behavior despite negative consequences, and/or diminished sexual satisfaction (WHO, 2022). Notably, neither high-frequency sexual activity alone (Bóthe, Tóth-Király, Potenza, Orosz, & Demetrovics, 2020c; Gola, Lewczuk, & Skorko, 2016) nor mere discomfort or distress due to the incongruence between one’s sexual behaviors and moral values (Kraus & Sweeney, 2019) is sufficient for a CSBD diagnosis. These nuances emphasize the importance of identifying the specific sources of distress. In particular, individuals presenting with distress over their sexual impulses or behavior without objectively dysregulated behavior should not be diagnosed with CSBD (see Section 6.2 for more information on the complexities pertaining to moral disapproval).

CSBD may manifest differently across genders. For example, watching online pornography, using webcams for sexual activity, or soliciting sex workers predominates among heterosexual men (Grubbs et al., 2020a); engaging in casual partnered sex may be more common among heterosexual women (Grubbs et al., 2024; Kowalewska, Gola, Kraus, & Lew-Starowicz, 2020); and using substances to enhance sexual experience may be disproportionately common among men having sex with men (Jennings, Gleason, Nieblas, Borgogna, & Kraus, 2025; Lewczuk, Wizła, Glica, & Dwulit, 2024; Obarska, Szymczak, Lewczuk, & Gola, 2020). Further differences across specific populations (e.g., symptom expression, treatment-seeking) are discussed in Section 10.

2.2. Alternative diagnoses

The CSBD diagnostic guidelines in the ICD-11 comprehensively address the above-mentioned clinical manifestations, along with key diagnostic considerations, including differential diagnosis and boundaries with other psychiatric, neurodevelopmental, and medical conditions (e.g., those relating to mood, obsessive-compulsive, personality, paraphilic, substance-related, and neurological disorders; see Briken et al., 2024). While the DSM-5-TR (APA, 2022) lacks a diagnosis for CSBD, related issues may be classified as an Unspecified Sexual Dysfunction or Disorder of Impulsivity or Compulsivity (Krueger, 2016; Stark & Klucken, 2017).

Importantly, it is also argued that PPU (also termed “pornography-use disorder”) may diverge from broader forms of CSBD (Bóthe et al., 2024b; Brand, Rumpf, King, Potenza, & Wegmann, 2020, 2025; Stark et al., 2025) and may therefore warrant recognition as under Other Specified Disorders due to Addictive Behaviors in the ICD-11 (Brand et al., 2022; for more details, see Section 11 Controversies, Knowledge Gaps, and Future Directions).

3. ASSESSMENT OF CSBD AND PPU

The evaluation of symptoms, course, and common clinical manifestations of CSBD (e.g., PPU) requires fine-tuned assessment to prevent potential misdiagnosis (Briken et al., 2024). Assessment may include a combination of self-report measures (i.e., individual’s subjective experience) and clinical interview (i.e., generating more detailed information;

for a recently validated semi-structured clinical interview for CSDB, see [Castro-Calvo et al., 2026](#)). However, clinically validated interviews are generally lacking (especially for CSBD as defined in the ICD-11; [Montgomery-Graham, 2017a](#); [Reid et al., 2012](#); [Womack, Hook, Ramos, Davis, & Penberthy, 2013](#)), and self-report scales typically lack clinical validation, standardized cut-offs, or population-specific norms ([Fernandez & Griffiths, 2021](#); [Grubbs et al., 2020a](#)). Consequently, self-reports may serve as a useful initial screen but carry risks of both over- and under-diagnosis ([Maraz, Király, & Demetrovics, 2015](#); see [Table 5](#) and [Supplementary Materials](#)). Future research should further examine diagnostic criteria and related measures across diverse populations (e.g., genders, sexual orientations, and cultural contexts).

Nevertheless, many psychometric instruments have been developed to assess CSBD/PPU. A recent systematic review examining 25 years of CSBD research from 1995 to 2020 identified 39 assessment measures to CSBD and/or PPU ([Grubbs et al., 2020a](#)), while a systematic review that specifically focused on PPU identified 22 different instruments ([Fernandez & Griffiths, 2021](#)). [Table 1](#) summarizes selected instruments for measuring CSBD/PPU that meet four key criteria: 1) theoretical embedding (i.e., a clear conceptual basis for item generation), 2) robust psychometric properties, 3) minimal language that overpathologizes CSBD/PPU, and 4) cross-cultural validation (including measurement invariance across languages), providing evidence about the applicability and validity of scales across diverse populations.¹ Similarly, [Table 2](#) summarizes the scales' coverage of HD and CSBD diagnostic criteria and additional addiction-related symptomatology.

3.1. CSBD scales

While several measures exist, the Sexual Compulsivity Scale (SCS; [Kalichman et al., 1994](#)) and the Hypersexual Behavior

Inventory (HBI; [Reid, Garos, & Carpenter, 2011](#)) have been two of the most widely used scales for the assessment of behaviors related to CSBD ([Turner et al., 2022](#)). The HBI directly assesses the HD criteria as proposed for the DSM-V (see [Table 1](#) for comparison between CSBD and HD criteria; [Böthe et al., 2022](#)). A strength of the HBI is that its cut-off score was derived from a clinical sample, though it may not work as accurately in community samples ([Böthe et al., 2019b](#)). In contrast, the SCS presents a poor coverage of the HD or CSBD symptoms yet includes more items for the assessment of the salience criterion (i.e., preoccupation and/or increasing priority toward sexual activity; [Castro-Calvo, Gil-Llario, Giménez-García, Gil-Julíá, & Ballester-Arnal, 2020](#)) and has been translated into more languages (e.g., [Ballester-Arnal, Gómez-Martínez, Llario, & Salmerón-Sánchez, 2013](#); [Scanavino et al., 2016](#)). Finally, the CSBI-13 ([Miner, Raymond, Coleman, & Swinburne Romine, 2017](#)) and its recently published abbreviated version (CSBI-SF; [Rahm-Knigge, Gleason, Mark, & Coleman, 2025](#)) may constitute a sound alternative to quantify difficulty in controlling one's sexual behavior (i.e., the hallmark feature of CSBD).

Concerning the assessment of the official ICD-11 diagnostic guidelines for CSBD, only the Compulsive Sexual Behavior Disorder Scale (CSBD-19; [Böthe et al., 2020b](#)), its abbreviated version (CSBD-7; [Böthe et al., 2023](#)), and the Compulsive Sexual Behavior Diagnostic Inventory (CSBD-DI; [Grubbs et al., 2023](#)) fully cover CSBD criteria. Notably, the CSBD-19 and CSBD-7 have demonstrated extensive cross-cultural validity and strong psychometric properties through the recent International Sex Survey (ISS; [Böthe et al., 2021b](#); [Böthe et al., 2023](#)). Given the relevance of sociocultural factors to CSBD/PPU (see [Section 10 Special populations](#)), these scales are recommended for cross-cultural comparisons of CSBD criteria as defined by the ICD-11. For a detailed assessment of CSBD symptoms, the use of the CSBD-19 is recommended ([Engelhardt et al., 2026](#)), whereas the CSBD-7 is advised when the administration of the extended version is unfeasible. In these settings, another brief and sound instrument, the CSBD-DI, may also be used ([Grubbs et al., 2023](#)). The main shortcoming of the aforementioned three scales is that their test-retest reliability has not yet been examined, an important limitation given that recent studies suggest that the natural course of CSBD may often be transient and/or inconsistent ([Castro-Calvo, Ballester-Arnal, Giménez-García, García-Barba, & Gil-Llario, 2023](#)).

3.2. PPU scales

Regarding PPU's measurement ([Jin et al., 2026](#)), three scales - the Brief Pornography Screen (BPS; [Kraus et al., 2020](#)), Problematic Pornography Consumption Scale (PPCS; [Böthe et al., 2018](#)) and Problematic Pornography Consumption Scale-6 (PPCS-6; [Böthe, Tóth-Király, Demetrovics, & Orosz, 2021c](#)) - have received the most extensive international validation in adult and adolescent populations ([Böthe et al., 2021c](#), [Böthe et al., 2024a, c](#); [Villena-Moya et al., 2024](#)). These measures have demonstrated excellent

¹As a result a relatively conservative approach, widely used and/or potentially relevant scales were omitted from this review. This is the case for the Internet Sex Screening Test (ISST; [Delmonico & Miller, 2003](#)) or the Sexual Addiction Screening Test (SAST; [Carnes, 1983](#)). Although these and other scales are still often used in clinical settings despite their limitations, both were excluded due to their inclusion of multiple pathologizing items (e.g., the SAST includes items such as "Were you sexually abused as a child or adolescent?" as indicators of sexual addiction). Similarly, we excluded the original version of the Compulsive Sexual Behavior Inventory (CSBI; [Coleman et al., 2001](#)), as it measures two factors that are not inherently related to compulsive sexual behavior (i.e., violence ["Have you given others physical pain for sexual pleasure?"] and sexual abuse ["Have you forced anyone against his or her will?"]). Scales that were developed for assessing problematic internet use more generally but adapted for online sexual behavior, such as the Short Internet Addiction Test adapted to Online Sexual Activities (s-IAT-sex; [Wéry, Burnay, Karila, & Billieux, 2016](#)), were also excluded. Scales focusing only on one aspect of CSBD or PPU, such as negative consequences of CSBD (e.g., the Hypersexual Behavior Consequences Scale, HBCS; [Reid et al., 2012](#)) or craving (e.g., the Pornography Craving Scale, PCQ; [Kraus & Rosenberg, 2014](#)), were also excluded. Finally, we excluded scales that were not validated in a representative number of languages despite their promising psychometric properties (e.g., the Individual-Based Compulsive Sexual Behavior Scale, I-CSB; [Efrati & Mikulincer, 2018](#)).

Table 2. Description of the selected scales for the assessment of CSBD and PPU

Domain	Scale	Description of the scale						Dimensionality		Reliability		Validity	
		Conceptualization, development, and diagnostic framework	N of items	Response format	Cut-off score	Languages	Validation among clinical samples ^a	Method	Factorial Structure	Internal consistency ^b	Test-retest ^c	Convergent/discriminant validity ^d	Criterion validity ^e
CSBD	Sexual Compulsivity Scale (SCS) (Kalichman et al., 1994; Kalichman & Rompa, 1995)	The SCS predates the release of the HD criteria by the DSM-5 and the CSBD criteria by the ICD-11. Indeed, the SCS was designed to examine the individual differences that place people at risk for HIV infection, rather than for diagnostic purposes. In other words: the SCS considers out-of-control sexual behavior as a trait (i.e., a “<i>personality disposition</i>”), rather than as a diagnostic entity. In line with this conceptualization, the authors of the SCS defined compulsive sexual behavior as an “<i>insistent, repetitive, intrusive, and unwanted urge to perform specific acts often in a ritualized or routinized fashions</i>” (Kalichman & Rompa, 1995, p. 587), establishing an equivalence with other terms such as sexual preoccupation or erotomania The authors provided only a few details about the SCS development. Items from the SCS were inspired by a self-help guide for people with self-proclaimed sexual addiction, and then pilot tested in a small sample for feedback concerning clarity. The initial validation study was conducted in a sample of gay men, yet subsequent studies have tested its properties in multiple samples Note: In line with their conceptualization of sexual	10 items	4-point	Tentative	Amharic Chinese English French German Indonesian Japanese Portuguese Serbian Spanish Turkish	No	EFA, CFA, & IRT	One factor: sexual compulsivity Two correlated 1st order factors: (1) failure to control sexual impulses and (2) interference	●	●	●	●

(continued)

Table 2. Continued

Domain	Scale	Description of the scale						Dimensionality		Reliability		Validity	
		Conceptualization, development, and diagnostic framework	N of items	Response format	Cut-off score	Languages	Validation among clinical samples ^a	Method	Factorial Structure	Internal consistency ^b	Test-retest ^c	Convergent/discriminant validity ^d	Criterion validity ^e
		compulsivity as a trait rather than as a category (a diagnostic entity), the authors of the SCS did not propose a clinical cut-off score. However, other researchers (e.g., Parsons et al., 2001) have proposed that values ≥ 24 on the SCS (typically corresponding with the upper 20% of scores) may indicate severe sexual compulsivity like symptoms. To the extent we know, this cutoff has not been tested for its sensitivity or specificity.											
	Hypersexual Behavior Inventory (HBI) (Reid et al., 2011)	The HBI-19 was developed in the wake of the proposed diagnosis for HD in the DSM-5, a period in which this diagnostic framework was dominant and generated a flourishing number of new studies. In this context, this scale filled an important gap: the HBI-19 was the first scale specifically developed to assess HD symptoms as defined by the DSM-5. Timely, novel, and sound, the HBI-19 has been used in seminal studies in the field (including the DSM-5 field trial for HD and many others), thus explaining its undeniable popularity and current validity. The process followed for the development and validation of the HBI-19 was robust. First, the authors followed a deductive process, based on the available literature, to propose an initial pool of 80 items covering the breadth of	19 items	5-point	Yes	English German Hungarian Iranian Italian Polish Spanish Swedish	Yes	EFA & CFA	Three correlated 1st order factors: (1) control, (2) coping, and (3) consequences Three 1st order factors (control, coping, and consequences) under a 2nd order factor (hypersexual disorder)	●	●	●	●

(continued)

Table 2. Continued

Domain	Scale	Description of the scale						Dimensionality		Reliability		Validity	
		Conceptualization, development, and diagnostic framework	N of items	Response format	Cut-off score	Languages	Validation among clinical samples ^a	Method	Factorial Structure	Internal consistency ^b	Test-retest ^c	Convergent/discriminant validity ^d	Criterion validity ^e
		criteria proposed by the DSM-5 diagnosis for HD (including both solo and relational manifestations of the disorder). This initial pool of items was scrutinized by prominent experts in the field (clinicians and researchers) and administered to a small sample of patients. Evaluators' feedback resulted in a reduced version (65 items) and the creation of written instructions to respondents clarifying how "sex" is defined by the scale. This 65-item version of the HBI was administered to a convenience sample of 324 men seeking help for issues associated with hypersexual behavior. Only the 19 items that met the highest metric standards (as indicated by the EFA and reliability analyses) were retained in the definitive HBI. The 19-item definitive version was finally administered to a new clinical sample (203 patients seeking help for HD), replicating its factor structure through CFA and providing further evidence about its psychometric robustness											
	Compulsive Sexual Behavior Inventory (CSBI-13) (Miner et al., 2017)	The original version of the CSBI dates from the 2001, when Coleman et al. (2001) developed a 28-item scale aimed to measure all the major components of nonparaphilic CSB (defined as the engagement in normative sexual behavior in an excessive and compulsive manner).	13 items	5-point	Yes	English French Italian Portuguese Spanish Swedish	No	EFA & CFA	One factor: control of sexual impulses	●	●	●	●

(continued)

Table 2. Continued

Domain	Scale	Description of the scale						Dimensionality		Reliability		Validity	
		Conceptualization, development, and diagnostic framework	N of items	Response format	Cut-off score	Languages	Validation among clinical samples ^a	Method	Factorial Structure	Internal consistency ^b	Test-retest ^c	Convergent/discriminant validity ^d	Criterion validity ^e
		This initial measure comprised three factors: (a) sexual impulse control, (b) violence, and (c) abuse. The original CSBI was initially validated in individuals with CSBD and pedophiles, demonstrating its ability to discriminate between these two samples and a control group This initial version raised certain criticisms among researchers, as it included two factors that were not inherently related to CSB (i.e., violence ["Have you given others physical pain for sexual pleasure?"] and sexual abuse ["Have you forced anyone against his or her will?"]) (Hook et al., 2010). Furthermore, the authors recognized that the abuse subscale also referred to past behavior, and therefore, was not relevant for the examination of CSB (Miner et al., 2007). As a way to address these issues, the authors developed a new version dropping the abuse subscale (i.e., the CSBI-22; Miner et al., 2007) and then the definitive one, keeping only the control subscale (i.e., the CSBI-13; Miner et al., 2017) Note: The authors determined two cutoff scores for the CSBI-13: a liberal cut point advised when the CSBI-13 is used for clinical purposes (maximizing the correct identification of individuals with CSB at the cost of misclassifying a											

(continued)

Table 2. Continued

Domain	Scale	Description of the scale						Dimensionality		Reliability		Validity	
		Conceptualization, development, and diagnostic framework	N of items	Response format	Cut-off score	Languages	Validation among clinical samples ^a	Method	Factorial Structure	Internal consistency ^b	Test-retest ^c	Convergent/discriminant validity ^d	Criterion validity ^e
		larger number of healthy individuals as with the disorder) and a conservative cut point when the scale is used for screening purposes (reducing the proportion of healthy individuals classified as with CSB at the cost of misclassifying as without the disorder a certain proportion of patients with CSB [probably, those with mild forms of this disorder]) Items from the CSBI-13 exactly correspond to the control subscale from the original CSBI-28 and the subsequent CSBI-22. Studies administering the CSBI-28 or the CSBI-22 but reporting particular values for the control subscale are used in this table as evidence of the reliability and validity of the CSBI-13 Similarly, as the CSBI-28 and the CSBI-22 comprise the items from the CSBI-13, translations from the extended versions are also considered as translations from the CSBI-13.											
	Compulsive Sexual Behavior Inventory Short Form (CSBI-SF) (Rahm-Knigge et al., 2025)	The CSBI-SF (i.e., an abbreviated version of the CSBI-13) was designed to flag responders with likely CSBD concerns in settings where the time for the scales' administration is limited (e.g., medical context, empirical studies comprising the administration of multiple measures, etc.). To develop the CSBI-SF, Rahm-Knigge	5 items	5-point	No	English French Italian Portuguese Spanish Swedish	No	CFA	One factor: control of sexual impulses	●	○	●	●

(continued)

Table 2. Continued

Domain	Scale	Description of the scale						Dimensionality		Reliability		Validity	
		Conceptualization, development, and diagnostic framework	N of items	Response format	Cut-off score	Languages	Validation among clinical samples ^a	Method	Factorial Structure	Internal consistency ^b	Test-retest ^c	Convergent/discriminant validity ^d	Criterion validity ^e
		et al. (2025) reviewed and retained the five items from the CSBD-13 that better covered the hallmark features of CSBD and introduced less response bias (i.e., face validity review). Then, the authors tested the factorial structure (CFA) and psychometric properties of the items' selection in a sample of 915 participants Note: as the CSBI-SF is a subset of items derived from the CSBI-13 (as noted before, the control subscale from the CSBI-22 and CSBI-28), translations from the extended versions are also considered as translations from the CSBI-SF											
	Compulsive Sexual Behavior Disorder Scale (CSBD-19) (Bóthe et al., 2020b)	The CSBD-19 was designed to assess Compulsive Sexual Behavior Disorder (CSBD) as defined by the ICD-11 guidelines, avoiding the inclusion of symptoms that were not considered in this diagnostic framework (e.g., the use of sex as a coping mechanism) Inspired by the wording from the most frequently used scales to assess CSBD-related symptoms (e.g., the HBI) and via international collaboration, authors developed an initial pool of 36 items covering each of the five ICD-11 criteria for CSBD (control, salience, relapse, dissatisfaction, and negative consequences [including general negative consequences and neglect	19 items	4-point	Yes	English Arabic Bangla Chinese Croatian Czech Dutch Frech German Hebrew Hindi Hungarian Italian Japanese Korean Lithuanian Macedonian Persian Polish	No	CFA	Five correlated 1st order factors: (1) control, (2) salience, (3) relapse, (4) dissatisfaction, and (5) negative consequences	●	○	●	●

(continued)

Table 2. Continued

Domain	Scale	Description of the scale						Dimensionality		Reliability		Validity	
		Conceptualization, development, and diagnostic framework	N of items	Response format	Cut-off score	Languages	Validation among clinical samples ^a	Method	Factorial Structure	Internal consistency ^b	Test-retest ^c	Convergent/discriminant validity ^d	Criterion validity ^e
		of responsibilities)). In addition, authors created 15 items for the assessment of different domain-specific negative consequences, resulting in an initial pool of 51 items. Items were then selected and retained based on the results from a validation study in four independent samples (including one nationally representative sample of Hungarian). The 19 items that best represented the CSBD symptoms and showed more sound psychometric properties were retained in the definitive version (three items for the control, salience, relapse, and dissatisfaction factor, and seven for the negative consequences factor) Note: the CSBD-19 was then translated, administered, and re-validated in the context of the International Sex Survey (ISS), a large, international collaborative study in 45 countries (Böthe et al., 2021b, 2023). This fact explains that the scale is available in multiple languages				Portuguese Romanian Spanish Slovak Turkish							
	Compulsive Sexual Behavior Disorder Scale (CSBD-7) (Böthe et al., 2023)	To develop the CSBD-7 (an abbreviated version of the CSBD-19), Böthe et al. (2023) examined all the items of the extended version and selected those that better measured each factor (i.e., better covering each factor's content [at a theoretical level] and showing higher standardized factor	7 items	4-point	Yes	English Arabic Bangla Chinese Croatian Czech Dutch Frech German	No	CFA	One first-order factor: Compulsive Sexual Behavior Disorder (CSBD)	●	○	●	●

(continued)

Table 2. Continued

Domain	Scale	Description of the scale						Dimensionality		Reliability		Validity	
		Conceptualization, development, and diagnostic framework	N of items	Response format	Cut-off score	Languages	Validation among clinical samples ^a	Method	Factorial Structure	Internal consistency ^b	Test-retest ^c	Convergent/discriminant validity ^d	Criterion validity ^e
		loadings [at a psychometric level]). After applying these criteria, authors retained 7 items (one item for factors such as control, salience, relapse, and dissatisfaction and three items for the factor of negative consequences) The use of the CSBD-7 is advised when the administration of the extended version is unfeasible (e.g., as a part of a screening assessment in medical settings or representative studies, where time is limited). However, as the CSBD-7 sacrificed a more detailed assessment of CSBD symptoms for the sake of brevity, its use is not advised when the assessment goes beyond a mere initial screening of this condition Note: the CSBD-7 was developed and tested in the context of the International Sex Survey (ISS) (Bóthe et al., 2021b), once again explaining its availability in multiple languages				Hebrew Hindi Hungarian Italian Japanese Korean Lithuanian Macedonian Polish Portuguese Romanian Spanish Slovak Turkish							
	Compulsive Sexual Behavior Disorder-Diagnostic Inventory (CSBD-DI) (Grubbs et al., 2023)	Like the CSBD-19 before, the CSBD-DI was designed to be a brief, easily administrable, and quickly scorable screening test covering all the CSBD symptoms according to the ICD-11 diagnostic guidelines To develop the CSBD-DI, authors took a confirmatory approach rather than the traditional item-bank reduction via EFA. In particular, they generated 9 items	7 items	3-point	Tentative	English German Hungarian Polish	No	CFA	One first-order factor: Compulsive Sexual Behavior Disorder (CSBD)	●	○	●	●

(continued)

Table 2. Continued

Domain	Scale	Description of the scale						Dimensionality		Reliability		Validity	
		Conceptualization, development, and diagnostic framework	N of items	Response format	Cut-off score	Languages	Validation among clinical samples ^a	Method	Factorial Structure	Internal consistency ^b	Test-retest ^c	Convergent/discriminant validity ^d	Criterion validity ^e
		that mirrored the wording of different diagnostic criteria (six items corresponded to shared criteria of both the CSBD [ICD-11] and the HD [DSM-5], 1 item assessed a criterion present only in the CSBD diagnostic guidelines, and 2 assessed criteria unique to HD) This 9-item pilot version was revised and refined by experts in behavioral addictions with different professional profiles (clinical psychologists, psychiatrists, etc.) and then tested in a preliminary study comprising four samples and three languages (English, German, and Hungarian). This pilot testing resulted in a reduced version of the scale to 7 items (the definitive CSBD-DI). The definitive version was tested again in three independent samples and including a new translation (Polish), confirming once again the utility of the CSBD-DI cross-culturally and establishing norming data Note: Authors did not establish a clear diagnostic cutoff for the CSBD-DI. They provided data about the diagnostic accuracy for a cutoff of 1 and 2 in the CSBD-DI, opening the door to consider a higher cutoff score in the future. As recognized by the authors, "Future research studies recruiting patients from clinical settings will be											

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Table 2. Continued

Domain	Scale	Description of the scale					Validation among clinical samples ^a	Dimensionality		Reliability		Validity	
		Conceptualization, development, and diagnostic framework	N of items	Response format	Cut-off score	Languages		Method	Factorial Structure	Internal consistency ^b	Test-retest ^c	Convergent/discriminant validity ^d	Criterion validity ^e
PPU	Brief Pornography Screen (BPS) (Kraus et al., 2020)	necessary to support a higher cut-off score” (Grubbs et al., 2023, p. 11)	5 items	3-point	Yes	English Arabic Bangla Croatian Dutch French German Hebrew Hindi Hungarian Italian Japanese Korean Lithuanian Macedonian Mandarin (simplified) Mandarin (traditional) Polish Portuguese (Brazil) Portuguese (Portugal) Romanian Slovak Spanish (Latin American) Spanish (Spain) Turkish	Yes	CFA & PCA	One factor: problematic pornography use	●	○	●	●
		The BPS was developed as a brief screening tool to identify individuals at risk of PPU. The first author developed the initial six items on the BPS as a possible measure of PPU in U.S. veteran samples. Items were generated based on clinical interactions with patients and past research investigating clinical correlates of PPU. The final measure was reduced to 5 items and assesses PPU in the past six months. PCA and CFA supported a one-factor solution of the BPS The authors determined that a score of ≥4 warrants further evaluation by a health care professional for PPU Note: the BPS was translated, administered and re-validated in the context of the International Sex Survey (ISS) (Böthe et al., 2024a, b), explaining its availability in multiple languages											

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Table 2. Continued

Domain	Scale	Description of the scale						Dimensionality		Reliability		Validity	
		Conceptualization, development, and diagnostic framework	N of items	Response format	Cut-off score	Languages	Validation among clinical samples ^a	Method	Factorial Structure	Internal consistency ^b	Test-retest ^c	Convergent/discriminant validity ^d	Criterion validity ^e
	Cyber Pornography Use Inventory-9 (CPUI-9) (Grubbs et al., 2015)	The CPUI-9 was designed to assess “problematic pornography use and perceived addiction to internet pornography” (Grubbs et al., 2015, p. 21). The CPUI-9 was derived from the 31-item Cyber Pornography Use Inventory (CPUI; Grubbs et al., 2010). While the original 31-item CPUI was developed and validated among a sample of religious undergraduate males, the CPUI- 9 was developed using a sample of undergraduates at a non-religious research university, a web-based adult sample, and a sample of college students seeking counseling at a university counselling center. EFA conducted on all items from the original CPUI (minus the social subscale) identified a three-factor solution based on three hypothesized factors of perceived compulsivity, access efforts, and emotional distress. The three-factor structure was confirmed using CFA in two separate samples Note: In subsequent years, a shortened version of the CPUI-9, the CPUI-4 (Grubbs & Gola, 2019), began being used. The CPUI-4, which retains three items from the ‘perceived compulsivity’ subscale and one item from the ‘access efforts’ subscale, began being used partially in response to critiques surrounding the possibility of the	9 items	7-point	No	English Persian Portuguese	No	EFA & CFA	Three correlated 1st order factors: (1) perceived compulsivity, (2) access efforts (3) emotional distress	●	○	●	●

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Table 2. Continued

Domain	Scale	Description of the scale					Validation among clinical samples ^a	Dimensionality		Reliability		Validity	
		Conceptualization, development, and diagnostic framework	N of items	Response format	Cut-off score	Languages		Method	Factorial Structure	Internal consistency ^b	Test-retest ^c	Convergent/discriminant validity ^d	Criterion validity ^e
		emotional distress subscale inflating full scale scores of the CPUI-9 in individuals who morally disapprove of pornography (Brand et al., 2019a; Fernandez et al., 2017; Grubbs et al., 2019b). Data presented here relate to the CPUI-9 as it is the more widely used and validated version of the scale											
	Problematic Pornography Consumption Scale (PPCS) (Böthe et al., 2018)	The PPCS was developed to assess PPU in the past six months. It uses Griffiths' (2005) components model of addiction as its theoretical framework. Development of items was based on previous PPU instruments and on the definitions of factors in the components model of addiction. Three items each were developed for all six of Griffiths' addiction components: salience, mood modification, conflict, tolerance, withdrawal, and relapse. CFA conducted using an online sample revealed an 18-item second-order factor structure. The PPCS and PPCS-6 are based on the components model of addiction (Griffiths, 2005), thus having a wider coverage of symptoms not covered by CSBD diagnostic criteria such as withdrawal, which has been found to be a central symptom of PPU in recent PPCS studies (Böthe et al., 2020a; Chen et al., 2021a). However, the diagnostic validity and clinical utility of some components,	18 items	7-point	Yes	English Arabic Bangla Croatian Dutch French German Hebrew Hindi Hungarian Italian Japanese Korean Lithuanian Macedonian Mandarin (simplified) Mandarin (traditional) Polish Portuguese (Brazil) Portuguese (Portugal) Romanian Slovak Spanish (Latin	Yes	CFA	Six 1st order factors (salience, mood modification, conflict, tolerance, relapse, and withdrawal) under a 2nd order factor (problematic pornography use)	●	○	●	●

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Table 2. Continued

Domain	Scale	Description of the scale						Dimensionality		Reliability		Validity	
		Conceptualization, development, and diagnostic framework	N of items	Response format	Cut-off score	Languages	Validation among clinical samples ^a	Method	Factorial Structure	Internal consistency ^b	Test-retest ^c	Convergent/discriminant validity ^d	Criterion validity ^e
		particularly tolerance and withdrawal in relation to CSBD and PPU, are still uncertain and require further investigation (Castro-Calvo et al., 2022) A cut-off score of ≥ 76 was identified to differentiate between individuals with problematic and non-problematic pornography use Note: the PPCS was translated, administered and re-validated in the context of the International Sex Survey (ISS) (Böthe et al., 2021b, Böthe et al., 2024a), explaining its availability in multiple languages				American) Spanish (Spain) Turkish							
	Problematic Pornography Consumption Scale-6 (PPCS-6) (Böthe et al., 2021e)	The PPCS-6 is a shortened, 6-item version of the PPCS (Böthe et al., 2018), and assesses PPU in the past six months. The scale was developed by selecting the theoretically and methodologically most appropriate items from each of the six factors: salience, mood modification, conflict, tolerance, withdrawal and relapse. CFA conducted on the PPCS-6 confirmed a one-factor first-order structure. A cut-off score of ≥ 20 was identified to differentiate between individuals with problematic and non-problematic pornography use A 6-item adolescent version of the PPCS (PPCS-6-A; Böthe et al., 2021e) was later developed for use in the adolescent population. Data presented here refers to the original	6 items	7-point	Yes	English Arabic Bangla Croatian Dutch French German Hebrew Hindi Hungarian Italian Japanese Korean Lithuanian Macedonian Mandarin (simplified) Mandarin (traditional) Persian Polish Portuguese	Yes	CFA	One factor: problematic pornography use	●	●	●	●

(continued)

Table 2. Continued

Domain	Scale	Description of the scale					Validation among clinical samples ^a	Dimensionality		Reliability		Validity	
		Conceptualization, development, and diagnostic framework	N of items	Response format	Cut-off score	Languages		Method	Factorial Structure	Internal consistency ^b	Test-retest ^c	Convergent/discriminant validity ^d	Criterion validity ^e
		PPCS-6 validated for use in adults Note: the PPCS-6 was translated, administered and re-validated in the context of the International Sex Survey (ISS) (Bóthe et al., 2024aBóthe et al., 2024a), explaining its availability in multiple languages				(Brazil) Portuguese (Portugal) Romanian Serbian (modified version) Slovak Spanish (Latin American) Spanish (Spain) Turkish English Japanese Mandarin Spanish							
	Problematic Pornography Use Scale (PPUS) (Kor et al., 2014)	The PPUS was developed to assess PPU over the past six months. An initial item pool of 43 items were adapted from previous scales assessing problematic internet use and sexual behavior. A series of exploratory PCAs identified 21 items that served as the best indicators of four major features of PPU: (1) distress and functional problems, (2) excessive use, (3) control difficulties, (4) use for escape/avoidance of negative emotions, based on core features of addiction described in models of addiction. The 21-item PPUS was further reduced using PCA into a shorter 12-item scale, with three items retained for each of the four PPUS factors. CFA confirmed the four-factor structure of the PPUS Although a four-factor structure of the PPUS was confirmed in	12 items	6-point	Tentative		No	EFA & CFA	Four correlated 1st order factors: (1) distress and functional problems, (2) excessive use, (3) control difficulties, (4) use for escape/avoid negative emotions	●	●	●	●

(continued)

Table 2. Continued

Domain	Scale	Description of the scale						Dimensionality		Reliability		Validity	
		Conceptualization, development, and diagnostic framework	N of items	Response format	Cut-off score	Languages	Validation among clinical samples ^a	Method	Factorial Structure	Internal consistency ^b	Test-retest ^c	Convergent/discriminant validity ^d	Criterion validity ^e
		subsequent research in Chinese (Chen et al., 2018), Japanese (Okabe & Ito, 2022) and Western (Zarate et al., 2023) samples, a recent study on the Spanish version of the PPUS on a Peruvian sample demonstrated a unidimensional structure, suggesting that further research is needed to better understand the factor structure of the PPUS across cultures Note: Although no cutoff score was identified in the original development study (Kor et al., 2014), a subsequent validation study by Zarate et al. (2023) has suggested a cutoff score of ≥ 33 to detect individuals at-risk of developing PPU											

Note: Criteria for assessing internal consistency, test-retest reliability, and criterion validity was extracted from King et al. (2020), whereas criteria for assessing convergent/divergent validity were formulated following the same approach (NB: King et al. did not formulate criteria for assessing this particular dimension). When the same research included multiple samples (e.g., samples from different countries), results from each sample were treated as independent; ^aAn instrument is considered as validated among clinical samples when its dimensionality, reliability, and/or validity has been tested in a sample exclusively composed of patients with CSBD/PPU (e.g., treatment seekers, patients already undergoing treatment in clinical settings, etc.); ^bInternal consistency, as assessed by Cronbach's alpha or an equivalent index –e.g., McDonald's omega– (○ = No available data; ● = 1 study reporting internal consistency >0.70; ● = 2 or >2 studies reporting internal consistency >0.70); ^cTest-retest reliability (○ = No available data; ● = 1 study with r test-retest >0.70; ● = 2 or >2 studies with r test-retest >0.70); ^dConvergent and discriminant validity, as assessed by positive (convergent) or negative (discriminant) associations with related constructs (e.g., number of sexual partners, frequency of sexual behavior or pornography consumption, etc.) (○ = No available data; ● = 1 study reporting association ± 0.3 or higher; ● = 2 or >2 studies reporting association ± 0.3 or higher); ^e = Criterion validity, as assessed by association with other CSBD/PPU measures (○ = No available data; ● = 1 study reporting association 0.3 or higher; ● = 2 or >2 studies reporting association 0.3 or higher). EFA = Exploratory Factor Analysis; CFA = Confirmatory Factor Analysis; PCA = Principal Component Analysis; IRT = Item Response Theory.

psychometric properties. The brevity of the BPS makes it useful for quick screening of potential PPU, with the drawback that false positives may be more likely relative to other measures (Böthe et al., 2024a). The PPCS and PPCS-6 are based on the components model of addiction (see Griffiths, 2005), thus including concerns not included in CSBD diagnostic guidelines (e.g., tolerance and withdrawal; see Section 11 for more information on these dimensions). The PPCS may be used when a more comprehensive assessment is needed, while the PPCS-6 may be applied when brevity is key (Böthe et al., 2024a, c).

Other scales that have been relatively widely used in the literature include the Problematic Pornography Use Scale (PPUS; Kor et al., 2014), which covers five of the six ICD-11 CSBD diagnostic criteria, and the Cyber Pornography Use Inventory-9 (CPUI-9; Grubbs, Volk, Exline, & Pargament, 2015), particularly in US samples (Böthe et al., 2024a; Grubbs et al., 2020a). However, both the CPUI-9 and PPUS have received less extensive international validation compared to the BPS and both PPCS versions. Given pornography's global availability and related problems, it is important to rigorously evaluate assessment tools among diverse and inclusive samples to provide evidence that is both robust and generalizable.

4. EPIDEMIOLOGY

Epidemiological studies have not robustly established CSBD/PPU incidence in the general population (Gjoneska, Böthe, Potenza, Szabo, & Demetrovics, 2025). Prior to the development and adoption of the CSBD criteria for ICD-11, prevalence estimates for out-of-control sexual behaviors were rare and measurement varied. Nonetheless, nationally representative studies provided basic estimates. For example, in a representative Swedish sample defining CSBD via high-frequency behaviors, 12.1% of men and 7.0% of women demonstrated concerns (Långström & Hanson, 2006). Recent estimates rely on face-valid questions about addiction or control (e.g., Briken et al., 2022; Grubbs et al., 2024) or scores exceeding cut-offs on validated measures (e.g., Böthe et al., 2023; Dickenson, Gleason, Coleman, & Miner, 2018; Grubbs et al., 2023). Methodological aspects should be considered when interpreting such estimates, including data collection methods (e.g. computer-assisted self-interview; CASI) and attempts to establish quasi-representativeness (e.g. sampling; weighting).

Using face-valid questions via CASI, a German study found 4.9% of men and 3.0% of women reported lifetime distress/impairment from out-of-control behaviors (Briken et al., 2022). Similarly, in a US representative online panel, 6.1% (4.4% women, 8.0% men, 12.5% nonbinary) felt out of control, while 7.4% (3.4% women, 11.8% men, 16.7% nonbinary) reported sexual addiction concerns (Grubbs et al., 2024). In Australia, 4% of men and 1% of women in a representative sample reported feeling addicted to pornography (Rissel et al., 2017). Estimates using validated measures also vary. Among a US online panel using the

pre-ICD-11 Compulsive Sexual Behavior Inventory-13, 10.3% of men and 7.0% of women reported distress/impairment (Dickenson et al., 2018). Similarly, using the CSBD-DI, representative samples from Hungary, Poland, and the US revealed roughly 10% endorsed ≥ 2 symptoms and 5% endorsed ≥ 3 symptoms (Grubbs et al., 2023). In that study, gender differences were notably small, with no significant difference in the Polish sample. In contrast, other probability samples found larger disparities: using the CSBD-19, 5.2% of men and 3.3% of women in Hungary (Böthe et al., 2020b) and 6.3% of men and 3.2% of women in Poland exceeded proposed cut-offs (Lewczuk, Wizła, et al., 2022b). In a representative Japanese sample using the CSBD-19, 2.6% (4.0% men, 0.9% women) exceeded the proposed cut-off (Okabe & Ito, 2024). Finally, in a non-probability sample of 42 countries ($N > 80,000$), overall prevalence using the CSBD-19 was approximately 4.8%, ranging from 1 to 16% (Böthe et al., 2023). However, comparability of prevalence estimates across countries is constrained by inconsistent measurement tools (and associated cut-off scores), heterogeneous and non-representative samples, cross-sectional designs, and substantial cultural and technological variation.

5. CO-OCCURRING DISORDERS

Although findings are preliminary given a lack of epidemiological comorbidity studies and reliance on cross-sectional data, CSBD/PPU often co-occur with various mental health disorders (Ballester-Arnal, Castro-Calvo, Giménez-García, Gil-Juliá, & Gil-Llario, 2020; Black, Kehrberg, Flumerfelt, & Schlosser, 1997; Hermand et al., 2020; Raymond et al., 2003). Relevant domains pertain to attention-deficit/hyperactivity disorder (Böthe, Koós, Tóth-Király, Orosz, & Demetrovics, 2019a; Niazof, Weizman, & Weinstein, 2019; Zhang, Chen, Jiang, & Böthe, 2022), mood disorders (e.g., major depression; Raymond et al., 2003; Scanavino et al., 2013; Shirk, Saxena, Park, & Kraus, 2021), bipolar disorder (Varo et al., 2019), insomnia (Shirk et al., 2021), anxiety (Grant Weinandy, Lee, Hoagland, Grubbs, & Böthe, 2023), obsessive-compulsive disorder (Fuss, Briken, Stein, & Lochner, 2019; Snaychuk et al., 2022), sexual trauma (Scoglio et al., 2025), post-traumatic stress disorder (Jepsen et al., 2024; Kraus et al., 2017), substance use (Stefanovics et al., 2024), binge eating (Castellini et al., 2020; Kowalewska, Szumska, & Lew-Starowicz, 2025), suicidality (McGraw et al., 2024; Schreck et al., 2025), paraphilias (Castellini et al., 2018), and borderline personality disorder (Ballester-Arnal et al., 2020; Grant, Boutouis, Collins, & Chamberlain, 2025; Lloyd, Raymond, Miner, & Coleman, 2007). While recent research on other personality disorders is sparse, early work linked CSBD to passive-aggressive and obsessive-compulsive traits (Carpenter, Reid, Garos, & Najavits, 2013; Raymond et al., 2003).

Although CSBD/PPU may occur in isolation (Konkolj Thege, Hodgins, & Wild, 2016), most data suggest co-occurrence with other problematic behaviors, particularly online shopping, gaming, and social media use (Charzyńska, Sussman, & Atroszko, 2021; Gomez, Brown, Tullett-Prado, &

Stavropoulos, 2023). In treatment-seeking samples for gambling or substance use disorders, CSBD/PPU co-occurrence ranges from 4.5 to 19.6% (Cowie et al., 2019; Grant & Steinberg, 2005; Mestre-Bach et al., 2024; Snaychuk, Dermody, Tabri, Basedow, & Kim, 2024; Stefanovics et al., 2024). CSBD may also be linked to chemsex (particularly among men who have sex with men), a pattern associated with elevated HIV and sexually transmitted infection risk (Gleason et al., 2023; Jennings et al., 2025). Associations with sexual health (e.g., sexual functioning) have also been described (see 7.3 *Sexual Health*). Although medical or neurological conditions (e.g., frontal-temporal lesions, neurodegenerative disorders, dopaminergic treatment in Parkinson's disease) can manifest in CSB-like symptoms, systematic studies in CSBD-specific cohorts are currently lacking (Briken, 2020; Briken et al., 2024; Tayim, Barbosa, & Panicker, 2024).

6. ETIOLOGY

Several integrative models theorize the etiology of CSBD/PPU (e.g., Briken, 2020; Coleman et al., 2018). Some models (e.g., Briken, 2020) approach CSBD/PPU from a sexual medicine and sexological perspective, explicitly building on Bancroft and Janssen's (2000) Dual Control Model and incorporating related frameworks such as Perelman's Sexual Tipping Point Model (Perelman, 2009, 2018). Others draw primarily on impulsivity, compulsivity, or addiction frameworks (e.g., the Interaction of Person-Affect-Cognition-Execution [I-PACE] Model; Brand, Young, Laier, Wölfling, & Potenza, 2016b; Brand, Snagowski, Laier, & Maderwald, 2016a, 2025b), while still others focus on specific mechanisms underlying CSBD/PPU (e.g., the Moral Incongruence Model of Pornography Use [Grubbs, Perry, Wilt, & Reid, 2019a; Grubbs & Floyd, 2025; Grubbs & Perry, 2019] or impaired sexual delay discounting [Finkenstaedt, Biedermann, Biedermann, & Fuss, 2025]). Due to space constraints, the present manuscript does not provide a detailed description of all available models in the literature (although additional discussions are offered in Section 11 *Controversies, knowledge gaps, and future directions* and *Supplementary materials*). Instead, we focus on two well-established and empirically supported models: the I-PACE Model (Brand, Young, et al., 2016b; Brand, Snagowski, et al., 2016a, 2025b), which postulates the evolution of potentially addictive behaviors, and the more specific Moral Incongruence Model of Pornography Use (Grubbs et al., 2019a; Grubbs & Floyd, 2025; Grubbs & Perry, 2019) that relates to the ICD-11 diagnostic guidelines. Importantly, these (and other) etiological models of CSBD/PPU have been evaluated almost exclusively using cross-sectional data, which limits inferences about temporal ordering, developmental sequencing, and causal mechanisms.

6.1. The I-PACE model

The I-PACE model (Brand, Young, et al., 2016b; Brand, Snagowski, et al., 2016a, 2025b) is a widely used theoretical

framework in the field of problematic and potentially behaviors, originally developed to describe the development and maintenance of internet-use disorders. Based on the I-PACE model, CSBD/PPU may result from interactions among potential predisposing factors (e.g., biopsychosocial characteristics), moderators (e.g., cognitive biases), and mediators (e.g., impaired executive functioning). This framework allows for the testing of specific hypotheses about predisposing factors and mechanisms contributing to the development and maintenance of CSBD/PPU. Current evidence on predisposing and mechanistic factors within the I-PACE framework is reviewed below, while broader addiction-model perspectives are addressed in Section 11.2.

6.1.1. Predisposing factors. Several personality and dispositional features have been proposed to contribute to CSBD/PPU, including difficulties with emotion regulation (Cardoso, Ramos, Brito, & Almeida, 2022; Coleman et al., 2018; Grant et al., 2025; Lew-Starowicz et al., 2020; Rahm-Knigge et al., 2023a, 2023b; Testa et al., 2024; Wang & Li, 2023; Wang, Tang, et al., 2024b), heightened responsivity to negative affect and distress intolerance (Coleman, Rahm-Knigge, et al., 2023b; Qu, Li, & Wang, 2024), trait impulsivity (particularly attentional impulsivity, sensation seeking, and negative urgency; Bóthe et al., 2019c; Bocci Benucci, Di Gesto, Ghinassi, Casale, & Fioravanti, 2024; Gaudet et al., 2025; Testa et al., 2024), trait compulsivity (Bocci Benucci et al., 2024; Gaudet et al., 2025; Grant et al., 2025), and boredom proneness (Coleman, Rahm-Knigge, et al., 2023b). Higher-order personality features, including elevated neuroticism (Borgogna & Aita, 2019), and insecure or avoidant attachment styles (Ciocca et al., 2021; Coleman, Rahm-Knigge, et al., 2023b; Efrati, Kraus, & Kaplan, 2021a; Gilliland, Blue Star, Hansen, & Carpenter, 2015; Kotera & Rhodes, 2019; Niazof et al., 2019; Weinstein, Katz, Eberhardt, Cohen, & Lejoyeux, 2015; Wizła & Lewczuk, 2024b), likewise appear relevant.

The I-PACE model also identifies loneliness, social isolation, and reduced social support as relevant social-cognitive vulnerabilities (Brand, Young, et al., 2016b; Brand, Snagowski, et al., 2016a, 2025b). Loneliness may be bidirectionally related to CSBD/PPU as both a risk factor and consequence (Mestre-Bach & Potenza, 2023). Sexual violence victimization and other forms of adverse sexual experiences (Coleman et al., 2018; Efrati & Gola, 2019b) have been linked to greater CSBD risk (Slavin, Blycker, et al., 2020a, Slavin, Blycker, et al., 2020a; Vaillancourt-Morel et al., 2025), with evidence indicating that experiencing sexual violence increases the likelihood of meeting clinical thresholds for CSBD in adults (particularly among women) and elevates the risk for clinically relevant PPU in women (though not men; Shegedin, Scoglio, Kraus, & Borgogna, 2024).

Additional motivational processes implicated in CSBD/PPU include heightened sexual excitability (Laier & Brand, 2014), emotional avoidance, and stress-reduction motives (Bóthe et al., 2024c). Finally, younger age and/or earlier exposure to pornography might confer a developmental vulnerability for CSBD/PPU (Castro-Calvo et al., 2020; Erdős

et al., 2025; Grant et al., 2025; Kowalewska, Gola, Lew-Starowicz, & Kraus, 2022). These age effects may reflect heightened impulsivity, stronger novelty responsiveness, and earlier exposure to online pornography during critical phases of psychosexual development (de Alarcón et al., 2019; Mead & Sharpe, 2020). Clinical characterization studies also highlight developmental variability and adverse experiences among individuals presenting with hypersexuality (Engel et al., 2019).

6.1.2. Mechanisms. Through reinforcement processes, initially pleasurable sexual behaviors may become habitual and compulsive, driven by shifts from hedonic “liking” to incentive “wanting” over time (Berridge & Robinson, 2016; Brand, Snagowski, et al., 2016; Piazza & Deroche-Gamonet, 2013; Robinson & Berridge, 1993, 2025). Although longitudinal data on CSBD/PPU are currently lacking (Wegmann, Antons, & Brand, 2022, 2025), cross-sectional findings support these incentive-salience accounts. Neuroimaging research links CSBD/PPU with heightened mesolimbic and fronto-striatal cue reactivity (including ventral striatum, dorsal anterior cingulate cortex, amygdala, and dorsolateral pre-frontal cortex) during sexual-cue exposure (for summaries, see Kowalewska et al., 2018; Lichte et al., 2025; Stark, Klucken, Potenza, Brand, & Strahler, 2018). Attentional prioritization of sexual cues has been shown across dot-probe, Stroop, and ERP paradigms (Banca et al., 2016; Mechelmans et al., 2014; Wang, Chen, & Zhang, 2021, 2024a; see also Castro-Calvo, Cervigón-Carrasco, Ballester-Arnal, & Giménez-García, 2021a; Klein et al., 2022). These attentional and implicit-association biases are linked to greater symptom severity and broader self-regulatory processes, including craving and desire thinking (Antons et al., 2025; Büsche, Stark, Brand, & Antons, 2022; Engel et al., 2024, 2025c; Knorr et al., 2026).

Conditioning processes may further strengthen cue-reward associations and hinder extinction of erotic cues (Wojciechowski et al., 2025), accompanied by altered pre-frontal-striatal connectivity, particularly reduced striatal-pre-frontal coupling during conditioning (Banca et al., 2016; Klucken, Wehrum-Osinsky, Schweckendiek, Kruse, & Stark, 2016). Such bottom-up pressures likely interact with top-down vulnerabilities, including deficits or context-dependent impairments in inhibitory control and conflict monitoring (Antons & Brand, 2018; Miner, Raymond, Mueller, Lloyd, & Lim, 2009; Seok and Sohn, 2018b; Wang & Dai, 2020), and less adaptive decision-making under sexual arousal (Messina et al., 2017), all of which intensify during periods of high desire or craving (Büschel et al., 2022). Attentional interference and heightened neural reactivity to sexual cues (Draps et al., 2024), together with cingulate and executive-network alterations, may further undermine regulatory control (Draps et al., 2020, 2021a; Müller & Antons, 2023).

6.2. The Moral Incongruence model of pornography use

The Moral Incongruence (MI) model (Grubbs & Floyd, 2025; Grubbs & Perry, 2019) proposes two distinct yet potentially overlapping pathways through which individuals

may experience distress related to pornography use. Specifically, some individuals may experience distress due to compulsive, dysregulated, out-of-control, or excessive use (i.e., PPU, *pathway 1*). Others may report problems due to their pornography use conflicting with their moral or sexual values and may experience self-perceived addiction to pornography (i.e., pornography problems due to moral incongruence, *pathway 2*).

Initially, the model proposed that moral disapproval of pornography among people using pornography may lead to the experience of moral incongruence, which, in turn, may lead to perceived problems associated with one’s use and associated distress (Grubbs et al., 2019a; Grubbs & Floyd, 2025; Grubbs & Perry, 2019). Later iterations, based on emerging scientific evidence across global samples (e.g., Bóthe et al., 2022, 2025, *in press*; Grubbs & Floyd, 2025; Grubbs et al., 2020b, 2022; Su, Zheng, & Zheng, 2023), have suggested that moral incongruence may be conceptualized by the interaction of pornography use frequency and moral disapproval of pornography use (Grubbs & Floyd, 2025). Finally, some people may experience both PPU and moral incongruence-related self-perceived addiction simultaneously, further highlighting the importance of accurate assessment and differential diagnosis (Brand, Antons, Wegmann, & Potenza, 2019a; Bóthe et al., 2025; Chen, Jiang, Luo, Kraus, & Bóthe, 2021b; Coleman, Jennings, et al., 2023a; Ince, Tiego, et al., 2025b; Jiang et al., 2022; Kraus & Sweeney, 2019).

Emerging evidence also points to different sources of moral disapproval (and, in turn, different forms of MI; Hoagland, Rotruck, Moore, & Grubbs, 2023). Although religious-based moral incongruence has traditionally been assumed to drive moral incongruence, other factors, like feminist concerns, have been reported as important sources of moral disapproval (Hoagland et al., 2023). Among these potential subtypes, only religious-based moral incongruence has been specifically operationalized (Ince, Tiego, et al., 2025b). In a multi-sample study (Ince, Tiego, et al., 2025b), different profiles of individuals emerged based on elevated PPU and/or religious-based moral incongruence (which were approximately equally common); notably, however, the group characterized by elevated religious-based moral incongruence (i.e., without concurrent PPU) reported significantly lower levels of psychological distress and tendencies to consider or seek treatment for PPU. This aligned with other recent work in which individuals reporting moral disapproval in the absence of PPU reported more favorable scores across pornography-related, sexuality-related, and psychological dimensions (Bóthe et al., 2025). While moral incongruence and its subtypes (e.g., religious-based moral incongruence) are likely sources of significant distress for some individuals, current data suggest that co-occurring PPU may be a more robust predictor of poorer mental health outcomes than moral incongruence alone (Bóthe et al., 2025; Ince, Tiego, et al., 2025b). More research on religious and other forms of moral incongruence is needed, as differing expressions of moral disapproval may need to be identified in screening to avoid CSBD misdiagnosis

(Coleman, Jennings, et al., 2023a; Gleason et al., 2023; Jennings, Lyng, Gleason, Finotelli, & Coleman, 2021).

7. POTENTIAL NEGATIVE CONSEQUENCES

Prior research demonstrates that CSBD/PPU is associated with a range of negative physical, psychological, interpersonal, and occupational outcomes (Böthe et al., 2023, 2024a; Fernandez & Griffiths, 2021; Grubbs et al., 2023; Koós et al., 2021; McBride, Reece, & Sanders, 2008; Reid et al., 2012). Such difficulties are routinely described in clinical settings by individuals seeking help for CSBD/PPU and individuals with self-reported concerns (Blinka, Ševčíková, Dreier, Škařupová, & Wölfling, 2022; Fong, 2006; Ince et al., 2023; Palazzolo & Bettman, 2020). However, the reliance on cross-sectional designs and non-clinical samples limits causal inference, leaving the temporal and mechanistic pathways underlying these impairments uncertain.

7.1. Physical and medical health

Relationships between CSBD/PPU and general physical health are generally under-established. Emerging reports describe acutely elevated fatigue, sleep deficits, or other problems (e.g., cognitive difficulties) following intensified patterns of sexual behaviors (e.g., pornography binges; Ince, Yücel, Albertella, & Fontenelle, 2021, 2023; Palazzolo & Bettman, 2020). Although respondents often attributed these concerns to pornography-assisted masturbation (e.g., experiencing subjectively altered states of sexual arousal (see Section 11.3 *Appetitive-Consummatory Cycles and Potential Alterations*), it is also possible that they may be attributable to other factors (e.g., impaired sleep) and/or secondary to the above mentioned mental health difficulties (Ince et al., 2021, 2023; Lewczuk, Wizła, et al., 2022; Roza, Noronha, Shintani, Massuda, Kessler, et al., 2024a; Shirk et al., 2021). More information on the nature, relative prevalence, and potential mechanisms behind these concerns would inform prevention and treatment of CSBD/PPU.

7.2. Mental health

Beyond co-occurring mental health disorders (see Section 5), CSBD/PPU are linked with low self-esteem, feelings of shame, guilt, and distress associated with their sexual behavior (Hunt et al., 2026; Lew-Starowicz et al., 2020; McGraw et al., 2024; Reid et al., 2011, 2014). Preliminary results also link PPU with acute emotional shifts (e.g., dysphoria, irritability) and negatively biased perceptions of self and others, particularly after binge-like patterns (Wordecha et al., 2018). Recent longitudinal studies additionally suggest that PPU may be associated with sustained or increasing psychological distress and rumination over time (Demirgöl et al., 2025; Engelhardt et al., 2025).

7.3. Sexual health

Previous studies have associated CSBD/PPU with sexual health difficulties, including lower sexual satisfaction, altered

sexual arousability, and difficulties reaching orgasm (especially for men; Böthe et al., 2021d; Dwulit & Rzymiski, 2019; Hoagland & Grubbs, 2021; Ince et al., 2021; Jacobs et al., 2021; Rowland & Cooper, 2024; Sommet & Berent, 2023; Voon et al., 2014). Recent reviews suggest that such effects may be more pronounced for PPU than for CSBD more generally, with the latter showing complex and mixed associations with erectile dysfunction (Glica, Wizła, Gola, & Lewczuk, 2023; Grubbs & Gola, 2019) and increased risk for HIV and sexually transmitted infections (Scanavino et al., 2020; Yoon, Houang, Hirshfield, & Downing, 2016). Notably, data suggest that sexual functioning may vary significantly across behaviors (e.g., pornography vs. partnered sex; Ince et al., 2021, 2023; Voon et al., 2014), suggesting the importance of measuring sexual functioning across specific contexts rather than relying on a global measure that aggregates across sexual behaviors.

7.4. Interpersonal, occupational, and other domains

Individuals with CSBD/PPU also report disruptions to work and educational responsibilities, including reduced concentration and missed tasks (Böthe et al., 2023; Grubbs et al., 2023; Koós et al., 2021). Interpersonally and relationally, CSBD/PPU are associated with increased loneliness, lower perceived social support, poor romantic bond quality and other adverse relational dimensions (Mestre-Bach & Potenza, 2023; Rahm-Knigge, Miner, & Coleman, 2023b; Wizła & Lewczuk, 2024a). Insecure attachment, particularly attachment anxiety, appears to heighten risk (Wizła & Lewczuk, 2024b). Maladaptive coping strategies for interpersonal stress (e.g., self-blame and denial) are linked to greater CSBD severity, whereas adaptive strategies and emotional openness may buffer distress (Rahm-Knigge, Miner, & Coleman, 2023b). Minority stress and concealment of sexual identity may also further compound interpersonal difficulties among sexually diverse individuals (Jennings, Gleason, Grubbs, & Kraus, 2024a; Lewczuk et al., 2024).

8. INTERVENTION AND TREATMENT

Clinical impressions suggest increasing numbers of individuals are seeking treatment for CSBD/PPU (although large-scale empirical studies are not yet available; Dhuffar & Griffiths, 2016; Gola, 2016; Stark et al., 2024). However, a recent survey from Germany suggests that psychotherapists remain underinformed about PPU (and likely also CSBD), and that mental health services for this population are limited (Markert et al., 2023).

Despite other important knowledge gaps (e.g., few randomized controlled trials and long-term follow-up studies; Antons et al., 2022; Borgogna, Garos, Meyer, Trussell, & Kraus, 2022), prevention and treatment research has grown, with systematic reviews identifying cognitive behavioral therapy (CBT) as a leading intervention (Antons et al., 2022; López-Pinar, Esparza-Reig, & Böthe, 2025; Roza, Noronha, Shintani, Massuda, Lobato, et al., 2024b; Turner et al., 2022). CBT's research dominance likely stems from its structured,

manualized format facilitating evaluation rather than inherent superiority over underrepresented relational or process-oriented therapies (Truijens, Zühlke-van Hulzen, & Vanheule, 2019).

Such protocols typically combine psychoeducation, motivational enhancement, goal setting, self-regulation, mindfulness, and relapse prevention, although further research is required to determine which therapeutic components are most effective (Antons et al., 2022; Brand, Antons, et al., 2025a; Theobald, Fife, Seedall, & Spencer, 2025; Zhu et al., 2025). Newer third-wave CBT interventions also leverage digital technology (e.g., smartphone applications) to enhance accessibility, though long-term efficacy requires validation (Antons et al., 2022; Hart-Derrick et al., 2025). Acceptance and commitment therapy (ACT), aligned with experiential avoidance models, has also shown promise (Antons et al., 2022; López-Pinar et al., 2025). ACT may be particularly effective for moral incongruence-related PPU, where maladaptive avoidance (e.g., thought suppression) may paradoxically increase distress (Borgogna & McDermott, 2018; Crosby & Twohig, 2016; Twohig & Crosby, 2010).

Pharmacological treatments have been explored primarily via case reports and small trials (Borgogna, Owen, Johnson, & Kraus, 2024; Malandain, Blanc, Ferreri, & Thibaut, 2020; Mestre-Bach & Potenza, 2024a). Investigated medications include opioid antagonists (e.g., naltrexone and nalmefene; Incoronato, Biedermann, Roth, Müller, & Fuss, 2023; Lew-Starowicz et al., 2022; Liu, Tian, & Zhou, 2025; Savard et al., 2020; Yazdi, Fuchs-Leitner, & Gerstgrasser, 2020), selective serotonin reuptake inhibitors (SSRIs; Gola & Potenza, 2016; Lew-Starowicz et al., 2022), anticonvulsants (Fong, De La Garza, & Newton, 2005; Khazaal & Zullino, 2006), and compounds like clomipramine, nefazodone, and N-acetylcysteine (Blum & Grant, 2022; Coleman, Gratzer, Nesvacil, & Raymond, 2000; Gulsun, Gulcat, & Aydin, 2007). Turner et al. (2022) recommend SSRIs and/or opioid antagonists for moderate cases and combination therapy for severe presentations; however, recent RCT evidence suggests psychotherapy may outperform pharmacotherapy alone (Scanavino et al., 2023). Adverse effects, placebo responses, and the lack of a well-established neurotransmitter model complicate interpretation (Borgogna et al., 2024; Lew-Starowicz et al., 2022). Future studies should investigate neurotransmitter systems, brain circuits, genetic vulnerabilities, and environmental interactions.

Treatment planning should prioritize acute co-occurring conditions like depression or substance use (Briken et al., 2024; Coleman et al., 2018). Interventions must be tailored to individual needs (Gola, 2016; Kraus & Sweeney, 2019), considering relational and sociocultural factors, such as religious beliefs, moral incongruence, interpersonal functioning, and partner inclusion (Briken et al., 2024; Coleman et al., 2018; Seyed Aghamiri, 2025; Stark et al., 2024; Vigorito & Braun-Harvey, 2017). LGBTQ-affirmative therapy may enhance engagement for sexual minority clients (Jennings, Gleason, Grubbs, & Kraus, 2024). While effectiveness testing is ongoing, technological adjuncts like digital self-help, blockers, monitoring systems, and tutorials are proposed for PPU management (Henry, Donkin, Williams, & Pedersen,

2022; Ning, Turel, & Davis, 2025; Stark et al., 2024). Finally, improving care requires addressing access barriers (e.g., stigma) and enhancing health system readiness through clinician education, guidelines, and structural capacity for intervention delivery (Markert et al., 2023; Stark et al., 2025).

9. POLICY

9.1. Legal implications

One important policy consideration pertains to the legal repercussions of including CSBD in the ICD-11. The proposal to include the differently conceptualized HD in the DSM-5 was denied by the APA Board of Trustees due to legal, clinical, and social concerns (Kafka, 2014). A significant legal concern was that the disorder could be “misapplied” as a mitigating factor in the defence of sex-offending individuals, including those involved in hands-on offenses or the use of sexual abuse material in cases of PPU (Reid & Kafka, 2014). Indeed, out-of-control sexual behavior is increasingly claimed as either a mitigating or aggravating factor in criminal, civil, and administrative proceedings (Ley, Brovko, & Reid, 2015; Montgomery-Graham, 2017b).

While the ICD-11 defines CSBD as a persistent pattern of failure to control intense, repetitive sexual impulses or urges, how this impaired control is interpreted may vary considerably across jurisdictions. Clinical and forensic contexts may apply the concept differently, creating potential discrepancies between diagnostic use and legal interpretation. This concern is heightened by the relatively high prevalence of self-reported CSBD/PPU (see Section 4 *Epidemiology*) and the risk of pathologizing cases of high sexual activity or interest (Fuss et al., 2024). From a global mental health perspective, different legal systems may respond uniquely to issues raised by the introduction of new diagnostic guidelines, as seen with other diagnoses in the ICD-11 (Abdalla-Filho et al., 2019; Artz et al., 2021; Briken, Boetticher, Krueger, Kismödi, & Reed, 2019; Makhoul, Kerbage, Khauli, Ramadan, & Khoury, 2020; Martínez-López et al., 2019). Consequently, conducting in-depth analyses of the legal implications of CSBD in diverse jurisdictions is important.

9.2. Policy implications

The addition of CSBD as a formal ICD-11 diagnosis has important policy implications, particularly for PPU. When CSBD was introduced, it was unclear whether PPU might be best classified as a type of CSBD or as a specific Disorder due to Addictive Behaviors (Brand et al., 2022), with current descriptions indicating the former. However, unlike paraphilic disorders, CSBD is not cross-listed in the “Conditions Related to Sexual Health” chapter of the ICD-11 despite its focus on sexual behavior (Böthe et al., 2024b; Lew-Starowicz & Coleman, 2022). Such cross-referencing could improve clinical utility by aiding differential diagnosis, identifying co-occurring disorders, and ensuring treatment incorporates sexual health expertise (Briken & Turner, 2022; Lew-Starowicz & Coleman, 2022).

Historically, the absence of diagnostic consensus impeded research infrastructure, surveillance, and clinical implementation (Gola & Potenza, 2018a; Grubbs & Kraus, 2021). Clinicians often report unfamiliarity with CSBD/PPU, contributing to topic avoidance in practice (Blinka et al., 2022). Specialized training remains limited (Markert et al., 2023; Stark et al., 2025), and health systems lack routine screening, reimbursement mechanisms, or standardized care protocols. Policies must therefore prioritize health-system readiness by supporting clinician education and structural capacity for intervention coverage (Grubbs et al., 2023; Markert et al., 2023; Stark et al., 2025).

Many jurisdictions have proposed policies targeting online sexual content, distinguishing between criminal material (e.g., laws preventing child sexual abuse imagery; Parliament of Canada, 2024) and age-based restrictions on legal adult content (Turvey et al., 2024). Age verification has been promoted to prevent sex-related harms, including PPU, and reduce minors' exposure (Sharpe & Mead, 2021; Way & Kraus, 2025). However, important issues persist, including legal, ethical, and implementation concerns (especially regarding privacy and surveillance; Arthur, 2019; Stardust, Obeid, McKee, & Angus, 2024). In some contexts, regulation appears driven more by moral or religious motives than public-health evidence (Chittick, 2024; McKay, Poulin, & Muñoz-Laboy, 2021). Meanwhile, industry opposition has intensified; for example, Pornhub's parent company, Aylo, has pushed for exemption from Canada's Online Streaming Act (Zafar, 2023).

Another policy consideration involves comprehensive sex education (Ahmed, Ahmad, Eisinger, Khan, & Brand, 2024; Kantor, Lindberg, Tashkandi, Hirsch, & Santelli, 2021). Where access to sexually explicit material is restricted and formal education is limited, youth (including LGBTQ+ individuals) often turn to pornography for information (Dawson, Nic Gabhainn, & MacNeela, 2020; Pathmendra, Raggatt, Lim, Marino, & Skinner, 2023). Incorporating balanced discussions of risks and benefits may promote sexual health and mitigate harms (Davis et al., 2020; Rothman, Daley, & Alder, 2020). Many policy approaches assume pornography is inherently harmful, yet evidence is mixed and context-dependent (Vaillancourt-Morel, Rosen, Willoughby, Leonhardt, & Bergeron, 2020; Vasquez et al., 2025), with findings of both adverse associations and potential benefits such as enhanced sexual or relationship satisfaction (Baumel, Guerra, Garcia, & Rosário, 2017; Hald & Malamuth, 2008; Kohut, Fisher, & Campbell, 2017; Sommet & Berent, 2023). Despite the precautionary appeal of restrictions (Sharpe & Mead, 2021), their capacity to prevent CSBD/PPU remains largely untested and a significant implementation challenge (Blake, 2019).

10. SPECIAL POPULATIONS

CSBD/PPU research has historically prioritized adult heterosexual men (Briken et al., 2024; Gola et al., 2017; Grubbs et al., 2020a; Kowalewska et al., 2020, 2022, 2024), likely

reflecting the structural biases and stigma associated with sexual behaviors that may have marginalized women, LGBTQ+ individuals, and adolescents (Anderson-Foster, 2023; Dhuffar & Griffiths, 2016; Efrati, 2020; Jennings, Gleason, & Kraus, 2022; Jennings et al., 2024a, 2024b; Klein, Briken, Schröder, & Fuss, 2019; Kowalewska, Bóthe, & Kraus, 2024). Western-centric focuses may have also impeded generalizability, which also necessitates greater integration of minority stress, feminist, and other perspectives to better address sociocultural inequities (Anderson-Foster, 2023; Briken et al., 2024; Jennings et al., 2024a, 2024b; Kowalewska et al., 2020, 2024, 2025). Nevertheless, emerging research in these areas is summarized below.

10.1. Adolescents

Human sexual responses start in childhood and intensify during adolescence (DeLamater & Friedrich, 2002), signaling sexual and reproductive maturation (Soriano-Guillén et al., 2022). While most adolescents navigate this phase without issues, some may develop CSBD/PPU (Efrati, 2019b). Defining CSBD in adolescents is particularly challenging since they are still exploring their sexualities and their personalities are not yet fully established (Morgan, 2013). In line with ICD-11 guidance, assessing the presence of CSBD during this life stage may be further complicated by divergent views regarding the appropriateness of sexual behavior, prompting debate among clinicians and researchers about diagnosing individuals under 18 years (Adelson et al., 2012; Efrati & Gola, 2019a; WHO, 2022). Nevertheless, CSBD/PPU may be present among approximately 5–14% of 14–19-year-old adolescents (Bóthe, Vaillancourt-Morel, Dion, Štulhofer, & Bergeron, 2021e; Efrati & Dannon, 2018; Efrati & Gola, 2019a; Pizzol, Bertoldo, & Foresta, 2016; Svedin, Åkerman, & Priebe, 2011; Štulhofer, Rousseau, & Shekarchi, 2020), with evidence suggesting that CSBD in adolescents is a distinct issue, not just a reflection of broader psychopathologies (Efrati, 2018). Nevertheless, desire thinking, metacognitions about sex, verbal perseveration, impulsivity, mental health, negative mood, shame, life satisfaction, sexual thoughts, sexual drive, sexual arousal, sexual distress, moral disapproval, and parental practices and characteristics may relate to CSBD/PPU among adolescents (e.g., Bóthe et al., 2021e; Efrati, 2019a, 2024; Efrati, Kolubinski, Caselli, & Spada, 2020; Efrati, Kolubinski, Marino, & Spada, 2021; Efrati & Gola, 2019a; Efrati & Spada, 2024; Kabaha & Efrati, 2025; Rousseau, Bóthe, & Štulhofer, 2021; Štulhofer et al., 2020). Notably, a systematic review (Bóthe, Vaillancourt-Morel, Bergeron, & Demetrovics, 2019d) argues against automatically classifying pornography use as problematic among lesbian, gay, bisexual, transgender, and queer (LGBTQ) adolescents (and adolescents in general) without other indicators of problematic sexual behaviors.

10.2. LGBTQ+ populations

Research on CSBD/PPU among LGBTQ+ individuals is expanding, encompassing assessment, prevalence, etiology, comorbidity, and treatment (Jennings, Gleason, Grubbs, &

Kraus, 2024a). Two key theoretical frameworks inform this literature: minority stress (Brooks, 1981; Meyer, 2003) and syndemic theory (Singer, 2010). Minority stress theory posits that LGBTQ + individuals experience unique stress related to societal responses to their identity, including discrimination events (e.g., peer rejection; Collier, Van Beusekom, Bos, & Sandfort, 2013) and stress reactions (e.g., internalized stigma; Nguyen, Anderson, & Pepping, 2024) that impact health (Pachankis et al., 2015). Syndemic theory conceptualizes CSBD as one of several interrelated health conditions that co-occur and interact to amplify risk (e.g., HIV risk especially among men of sexual minorities), shaped by broader social, cultural, and psychological forces such as stigma, discrimination, mental health stressors, and limited access to affirming care (Jennings, Gleason, Grubbs, & Kraus, 2024a).

While several studies have supported these frameworks (Lewczuk et al., 2024; Pachankis et al., 2015; Rooney, Tulloch, & Blashill, 2018), the evidence remains limited and preliminary (Tsai, 2018). Although research suggests CSBD/PPU are prevalent among LGBTQ + populations (Dickenson et al., 2018), assessment concerns persist. For instance, minority stress-related distress (e.g., internalized stigma, identity concealment, discrimination) may be conflated with CSBD symptomatology (Jennings et al., 2022, 2024b). Such measurement issues may affect prevalence estimates and promote clinician bias by pathologizing normative behaviors (Jennings et al., 2022, 2024b). Further research is needed to address these gaps, refine prevalence estimates, and facilitate evidence-based clinical recommendations for treating CSBD among LGBTQ+ individuals.

10.3. Women

CSBD/PPU in women remains under-researched. While core symptom profiles appear broadly similar across genders, women's experiences often diverge in behavioral form and are shaped by sociocultural expectations (Grubbs et al., 2023; Kowalewska et al., 2020, 2025; Kürbitz & Briken, 2021). Although symptom severity is generally lower than in men, many women experience significant difficulties (Kowalewska et al., 2025; Lewczuk, Szmyd, Skorko, & Gola, 2017). Moreover, the historical focus on CSBD/PPU among heterosexual men (Brossard, Roy, Brown, Hemmings, & Larocque, 2025; Grubbs et al., 2020a; Kowalewska et al., 2020, 2024) has likely contributed to misinterpretations of women's symptoms and prevalence inaccuracies.

Evidence suggests women favor interpersonal sexual activity over solitary behaviors like PPU (Grubbs et al., 2024; Kafka, 2010; Kowalewska et al., 2024). Mechanistically, sexual delay discounting (Finkenstaedt et al., 2025) and neuroticism appear particularly relevant for women (Kürbitz & Briken, 2021), alongside shared traits like impulsivity and inhibitory control (Bibi, Fatima, Amin, & Rowland, 2022; Pekal, Laier, Snagowski, Stark, & Brand, 2018). CSBD/PPU in women shows stronger associations with trauma exposure, impulsivity, and affective disorders (Kürbitz & Briken, 2021; Shegedin et al., 2024), whereas men show stronger links to obsessive-compulsive traits (Kowalewska et al., 2020, 2022,

2024). Because assessment tools were largely developed in male samples, existing measures may under-identify female presentations, necessitating gender-sensitive adjustments (Kowalewska et al., 2025; Kürbitz & Briken, 2021). Finally, help-seeking may be hindered by stigma (Dhuffar & Griffiths, 2016), with one study finding 68% of women with significant CSB symptoms had never sought support (Kowalewska et al., 2022). Expanding research on sex-specific mechanisms remains essential for improving diagnostic accuracy.

10.4. Cultural aspects

As sexual behaviors are shaped by interrelated cultural norms and values (Parker, 2009; Vaillancourt-Morel & Bergeron, 2019), cross-cultural research is essential to understanding how cultural contexts contribute to the prevalence, symptoms, and consequences of CSBD/PPU (Ahorsu et al., 2023; Bóthe et al., 2024a). Although the core features of CSBD/PPU appear consistent across cultures, as evidenced by large-scale cross-cultural validations spanning five continents (Bóthe et al., 2023, 2024a; Chen et al., 2021a; Grubbs et al., 2023), culture-specific nuances have been increasingly recognized. For instance, meta-analytical findings indicate that the association between pornography use frequency and PPU is stronger in more conservative societies (e.g., China) than in more permissive contexts (e.g., the US; Chen et al., 2021c). Culturally driven sexual conservatism may lower the threshold for psychological factors (e.g., shame, guilt, and distress) which may potentially inflate self-reported PPU rates (Guo, 2019) and exacerbate disparities between treatment demand and availability. In such contexts, online self-help platforms and support groups may play a vital role in providing accessible resources, particularly where professional treatment services are limited (e.g., China; Chen, 2022). These patterns highlight the need for continued cross-cultural research, especially culturally adapted assessment tools and interventions.

11. CONTROVERSIES, KNOWLEDGE GAPS, AND FUTURE DIRECTIONS

As a relatively nascent field of inquiry, many controversies and knowledge gaps relating to CSBD/PPU require further examination. These issues span ten key (non-mutually exclusive) domains: (1) Nosological and Diagnostic Challenges, (2) Theoretical and Conceptual Frameworks, (3) Appetitive-Consummatory Cycles, (4) Course and Subtypes, (5) Assessment and Methodological Considerations, (6) Risk and Protective Factors, (7) Additional Under-researched Phenomena, (8) Co-occurring Concerns/Comorbidities, (9) Intervention/Treatment, and (10) Broader Implications and Ethical Considerations. Given the breadth of these areas and the nascent status of many domains, this section highlights key challenges and future directions, with other areas addressed in Tables 3–5 and the [Supplementary Materials](#). In the main text, we emphasize particularly novel areas, including those primarily informed by

Table 3. Conceptualization, classification, and diagnostic-related challenges and future directions

Key themes	Specific problems	Examples of actions to be taken
1. Nosological and Diagnostic Challenges		
1.1 Nosology	- CSBD's classification as an impulse-control disorder in ICD-11 remains debated, impacting diagnosis, research funding, public health messaging, and intervention	- Refine diagnostic criteria based on neurobiological and behavioral evidence across interdisciplinary perspectives (Briken et al., 2024; B��the et al., 2024b) - Conduct empirical studies comparing CSBD with other disorders (i.e., those relating to substance use, behavioral addiction, compulsivity, impulse-control, anxiety, depression, sexual, and other disorders; B��the et al., 2022; Briken et al., 2024; Rumpf & Montag, 2022) - Examine whether CSBD and PPU should be differentially classified in nosological texts (Brand et al., 2022, 2025; Stark et al., 2025)
1.2. Psychiatric taxonomies	- DSM/ICD taxonomies rely on a syndromic (symptom-based) classification, which have been criticized for neglecting dimensional approaches and underlying mechanisms	- Integrate dimensional and neurobiological assessments into CSBD/PPU research using frameworks, such as the Hierarchical Taxonomy of Psychopathology, Research Domain Criteria, and the Etiologic, Theory-Based, Ontogenetic, Hierarchical Framework (Alves & Cavallieri, 2020; Boness, Watts, Moeller, & Sher, 2021; Draps et al., 2021; Insel et al., 2010; Kotov et al., 2017; Y��cel et al., 2019)
1.3 Additional diagnostic considerations	- "Peripheral" features, sub-types, diagnostic boundaries (relative to comorbidities), CSBD/PPU symptom severity, and mechanisms	- Differentiate core (e.g., impaired control) and associated features (e.g., mood modification, emotion regulation) - Evaluate methods for assessing CSBD/PPU symptom severity and treatment response (Reid, 2015) - Investigate potential CSBD/PPU subtypes (see 4.3. <i>Subtypes</i>) - Clarify diagnostic boundaries in relation to co-occurring conditions (see 5. <i>Co-occurring Issues/Comorbidities</i>)
2. Theoretical and Conceptual Frameworks		
2.1 Conceptual frameworks	- Challenges in testing conceptual frameworks include imprecise tailoring to CSBD/PPU, isolated model testing, and assumptions of a one-size-fits-all approach	- Continue to refine how each conceptual framework is operationalized (see below) - Examine heterogeneous sub-types (i.e., person-centred approaches) rather than a "one-size-fits-all" approach (Cantor et al., 2013; Ince, Gaudet, & B��the, 2025; Knight & Graham, 2017) - Compare multiple conceptualizations in parallel (i.e., variable-centred approaches) - Employ multi-method approaches (e.g., self-report, psychophysiological, neuroimaging, EMA approaches). - Examine the utility of theoretically neutral conceptual frameworks such as the Problematic Sexual Behavior (PSB) model (Herring, 2017) in clinical and research contexts*
2.1.1 Addiction models	- Various addiction-related phenomena require further examination in CSBD/PPU research	- Continue to refine research on addiction-related phenomena (described below) - Investigate the three meta-level criteria specific to behavioral addictions: 1) Clinical relevance, 2) Theoretical embedding, 3) Underlying mechanisms (Brand et al., 2022, 2025a; Flayelle et al., 2023; Ince, Gaudet, & B��the, 2025) - Examine purported transitions from (sexual) impulsivity to compulsivity over time (Brand, Young, et al., 2016, Brand, Snagowski, et al., 2016, 2025b; Wegmann et al., 2025)

(continued)

Table 3. Continued

Key themes	Specific problems	Examples of actions to be taken
		- Examine various addiction-related perspectives beyond incentive-salience accounts, including reward deficiency syndrome (File et al., 2022; Gola & Draps, 2018), opponent-process, and allostatic adjustment models (Henry, Pedersen, Williams, & Donkin, 2023) - Continue to examine addiction-related biomarkers as related to CSBD/PPU (Ferreira et al., 2025)
2.1.1.1 Tolerance/escalation	- Data on tolerance/escalation in CSBD/PPU is relatively limited, and methodological and conceptual issues abound	- Ensure that measures of addiction-related tolerance/escalation distinguish habituation-driven escalation (i.e., escalation to offset desensitization effects) from non-pathological motivations (e.g., escalation due to sexual curiosity or discovery) - Examine the mechanisms that may underscore tolerance/escalation, such as (but not limited to) repeated sexual activity prior to completion of post-orgasm refractory periods[#] - Investigate under-researched forms of behavioral escalation (see Table 5, 1.2.2 Intensity indicators)
2.1.1.2 Withdrawal	- Data on withdrawal-like phenomena related to CSBD/PPU is relatively scarce and is hampered by potentially important methodological and conceptual limitations	- Differentiate between physiological and psychological withdrawal dimensions with a range of tools and methodologies (Roza, Noronha, Shintani, Massuda, Kessler, et al., 2024) - Distinguish genuine withdrawal effects from mere negative mood or affect and non-pathological responses to sexual deprivation
2.1.1.3 Craving and sexual desire	- Craving in CSBD/PPU is assumed to be experientially equivalent to other addictive disorders, despite a lack of targeted research	- Examine whether sexual craving is distinguishable from intensified sexual desire or other related concepts - Further examine incentive sensitization theory, including the dissociation between “wanting” and “liking” (Antons et al., 2025; Knorr et al., 2026) - Investigate the role of cue reactivity (including distal vs. proximal cues), withdrawal, relapse, and permissive beliefs (Brandtner, Müller, Behrens, Oelker, & Brand, 2024) - Examine the role of biological factors (e.g. neurochemicals and hormones) relating to sexual desire, craving, and CSBD/PPU (Chatzittofis et al., 2022)
2.1.1.4 Relative outcome utility	- The role of relative outcome utility (how non-sexual alternatives compete with sexual urges) remains largely unexamined in CSBD/PPU research	- Investigate relative outcome utility in CSBD/PPU, including whether hedonic templates narrow toward sexual cues or if behavioral patterns are driven by factors like ease of sexual engagement (Castro-Calvo et al., 2022; Perales et al., 2020)
2.1.1.5 Behavioral and associative learning mechanisms	- Behavioral addiction research has primarily focused on symptom profiles and individual psychopathology, often neglecting core behavioral processes (e.g., reinforcement, extinction, habit formation) - Criteria for CSBD/PPU are often adapted from substance/gambling models without considering whether similar behavioral mechanisms are present	- Investigate whether CSBD/PPU involves associative learning mechanisms (e.g., cue conditioning, extinction resistance; Klucken et al., 2016; Wojciechowski et al., 2025) and compare reinforcement dynamics with those underlying gambling and other potentially addictive behaviors (Gola, 2016; James & Tunney, 2017; Klucken et al., 2016; Tunney & James, 2017; Wojciechowski et al., 2025) - Identify reinforcers that sustain CSBD/PPU and determine how they may change over time (e.g., “liking” to “wanting”; Brand, Müller, et al., 2025)

(continued)

Table 3. Continued

Key themes	Specific problems	Examples of actions to be taken
2.1.2 Compulsivity and impulsivity models	- Impulsivity and compulsivity models in CSBD/PPU require refinement, particularly in distinguishing sexual from non-sexual manifestations and state vs. trait dynamics	- Develop behaviorally informed conceptual models to differentiate between addiction-like persistence and high engagement (Grubbs & Boness, 2025; Ince, Gaudet, & Bóthe, 2025; James & Tunney, 2017) - Continue to examine specific aspects of impulsivity (e.g., reward sensitivity, delay discounting and reinforcement processes) and compulsivity (e.g., goal-directed vs habitual control, behavioral perseverance; Bocci Benucci et al., 2024; Gaudet et al., 2025; Perales et al., 2020) - Differentiate trait-level impulsivity and compulsivity from state-dependent fluctuations (Gaudet et al., 2025) - Compare sexual versus generalized impulsivity and compulsivity (Antons & Brand, 2018, 2021; Gaudet et al., 2025), and related domains of cognitive functioning (Engel et al., 2025b; Messina et al., 2017), as well as performance under different conditions (e.g., with and without sexual cue loading; Antons & Brand, 2018, 2021; Engel et al., 2025c; Messina et al., 2017)
2.1.3 Emotional dysregulation models	- Various aspects of emotional dysregulation models require further examination	- Investigate whether emotional dysregulation serves as a trait vulnerability, a state-level consequence, or both (including potential bidirectional associations; Lew-Starowicz et al., 2020; Testa et al., 2024) - Refine research on such dimensions as intolerance of uncertainty/distress, thought suppression, and alexithymia (Gonçalves & Scanavino, 2024; Preece et al., 2022)
2.1.4 Moral disapproval models	- Moral incongruence taxonomies continue to be refined, requiring further evaluation and cross-cultural examination	- Examine different forms of moral incongruence, especially cross-culturally (Bóthe et al., 2025, in press; Hoagland et al., 2023; Ince et al., 2025b) - Clarify how different forms of guilt, shame, and cognitive dissonance relate to different forms of moral incongruence
2.1.5 Problematic use of the Internet (PUI)	- It remains unclear whether online forms of CSBD (e.g., PPU) are best conceptualized as a subtype of CSBD, as a form of PUI, or both	- Examine potential subtypes of online vs. offline forms of CSBD/PPU (see 4.3 Subtypes) - Examine how the structural/design features of online platforms relate to CSBD/PPU, including the role of sexual novelty and potential links to prediction error[#] - Refine research on other forms of online CSBD beyond PPU
2.1.6 Sexual disorder models	- Sexual disorder-related frameworks remain underdeveloped in the context of CSBD/PPU	- Evaluate sexual disorder-related theoretical models, such as the Dual-Control Model and Sexual Tipping Point Model (Briken, 2020; Briken et al., 2024) - Investigate distinctions between adaptive and impairing hypersexuality to clarify diagnostic boundaries (Perrotta, 2023)
2.2 Neurobiological models	- CSBD/PPU currently lacks a comprehensive neurobiological framework	- Use functional and structural neuroimaging, neurophysiological measures, and pharmacological interventions to develop and refine neurobiological models for CSBD/PPU (Klein et al., 2022; Stark et al., 2018) - Employ neurophysiological approaches (e.g., eye-tracking, EEG, pupillometry, skin conductance, and heart rate variability) to examine cognitive and affective processes (Carvalho, Rosa, & Stulhofer, 2021; Wang et al., 2021)

(continued)

Table 3. Continued

Key themes	Specific problems	Examples of actions to be taken
3. Appetitive-Consummatory Cycles		
3.1 Appetitive-consummatory mechanisms	- Whether appetitive-consummatory mechanisms in CSBD/PPU differ from other compulsive or addictive behaviors requires further examination	- Investigate the distinction between appetitive ('wanting') and consummatory ('liking') phases in CSBD/PPU to clarify reward-processing mechanisms - Assess reinforcement learning, tolerance, and hedonic adaptation in CSBD, using experimental paradigms to examine underlying mechanisms
3.1.1 Learning models	- Information across various learning models is currently lacking in CSBD/PPU research	- Examine reinforcement learning paradigms, such as model-based (goal-directed) and model-free (habitual) responding (Perales et al., 2020) - Investigate incentive sensitization and Pavlovian-to-instrumental transfer mechanisms (Mahlberg, Weidemann, Hogarth, & Moustafa, 2019, 2021; Wells et al., 2022) - Explore the relevance of opponent process theory, relative outcome utility, and extinction processes in understanding CSBD/PPU (Henry et al., 2023; Toates, 2022; Wojciechowski et al., 2025)
3.1.2 Appetitive, consummatory, and satiety phases	- Although previous work has examined appetitive (motivational) phases, later phases (i.e., reward-attainment and recovery processes) have received little attention	- Further investigate appetitive phases in CSBD/PPU, including cue-reactivity and craving - Expand research on consummatory (reward attainment) and satiety (recovery) phases of the sexual response cycle (see Table 4, 1.2 Altered states of sexual arousal) - Examine the potential influence of sexual novelty and prediction error across appetitive, consummatory, and satiety phases of the sexual response, and whether these processes relate to the controversial yet under-examined notion of "supernormal stimulation" or "supraphysiological" responses [#]
4. Course and Subtypes		
4.1 Natural history of sexual behaviors	- Various aspects of sexual behavior have received little examination in CSBD/PPU research	- Examine the impact of sex toys, sexual enhancement medications (Bronner & Ben-Zion, 2014; Jennings et al., 2025), and compulsive pornography viewing without masturbation - More thoroughly examine different masturbatory patterns (see Table 5, 1.2.4 Masturbation) - Examine the role for non-explicit visual sexual stimuli (e.g., social media "thirst traps") as masturbation aids*
4.2 Course/trajectories	- Developmental trajectories related to CSBD/PPU are not well established in CSBD/PPU research	- Conduct high-quality longitudinal studies to track potential variations in onset, progression, and remission patterns (e.g., early/late-onset and transient/chronic variations; Castro-Calvo et al., 2023; Konkoly Thege, Woodin, Hodgins, & Williams, 2015; Gomez et al., 2024)
4.3 Subtypes	- Although the ICD-11 outlines behavioral manifestations of CSBD, potential subtypes are not well understood	- Identify potential CSBD/PPU subtypes based on symptom profiles (multifinality), underlying mechanisms (equifinality), sexual behaviors, and online vs. offline manifestations - Examine whether identified subtypes differ in treatment needs and responses

(continued)

Table 3. Continued

Key themes	Specific problems	Examples of actions to be taken
5. Co-occurring Issues/Comorbidities		
5.1 Psychiatric/psychological comorbidities	- Prior research on CSBD/PPU psychiatric comorbidities relied on outdated conceptualizations	- Continue to examine mental health and psychiatric comorbidities related to CSBD/PPU (Grant Weinandy et al., 2023; Hermand et al., 2020; Vieira & Griffiths, 2024) - Refine CSBD/PPU's diagnostic boundaries against medical and psychiatric comorbidities
5.2 Broader addictive disorders	- Relationships between CSBD/PPU and other potentially addictive activities remain unclear	- Examine the rates of co-occurrence and potential mechanisms between CSBD/PPU and other potentially addictive behaviors (Shmulewitz et al., 2024; Zarate et al., 2022)*
5.3 Paraphilic interests vs behaviors	- Relationships between CSBD/PPU and paraphilic interests and behaviors remain unclear	- Examine the links between paraphilic interests and behaviors - Refine clinical guidelines regarding co-occurring paraphilic interests/behaviors (Turner et al., 2022)

DSM = Diagnostic and Statistical Manual, EMA = Ecological Momentary Assessment, ICD = International Classification of Diseases.

*For elaboration, see Supplementary Materials S1) Sexual novelty, prediction error, and the controversial notion of pornography as a “supernormal stimulus”.

*For elaboration, see Supplementary Materials S6) Additional clinical observations/considerations.

qualitative data and underexplored topics from adjacent fields (e.g., other potentially addictive behaviors). In such cases, we offer theory-based speculations to guide hypothesis generation/testing and ongoing discussion. As such, various ideas should be interpreted with caution. While we strive for comprehensive coverage of the CSBD/PPU literature, some areas may be overlooked or underexplored, and we welcome further dialogue.

11.1. Nosological and diagnostic challenges

Perhaps the most debated issue concerns how CSBD/PPU should be classified within major nosological systems, and which criteria are most appropriate for diagnosis (Brand, Antons, et al., 2025a; Bőthe et al., 2024b). As detailed in Section 2 *Definition and Symptomatology*, CSBD is currently recognized as an Impulse Control Disorder in the ICD-11 (WHO, 2022), whereas no dedicated diagnosis exists in the DSM-5-TR (APA, 2022). Whether CSBD will ultimately be reclassified in future revisions - similar to prior transitions for Gambling Disorder (ICD-11; DSM-5) and Gaming Disorder (ICD-11) - remains an active and closely monitored question (Brand & Potenza, 2023; Gola et al., 2022; Rumpf & Montag, 2022; Stark et al., 2018). A related debate concerns whether PPU (often termed pornography-use disorder; Antons & Brand, 2018; Brand et al., 2022) warrants distinct recognition (see Section 11.2.2 *Course and Sub-Types*).

Diagnostic criteria may also be refined to reconcile the currently heterogeneous diagnostic criteria used to characterize CSBD/PPU (e.g., sex as a coping mechanism, tolerance, withdrawal; Bőthe et al., 2022). This variability has downstream implications for clinical recognition, research priorities, treatment development, and policy decisions (Bőthe et al., 2022; Grubbs & Kraus, 2021; Gola & Potenza, 2018a). Establishing systematic expert consensus on CSBD/PPU criteria is crucial to ensuring diagnostic validity, clinical utility, and prognostic value (see Castro-Calvo, King, et al., 2021b for an analogous initiative in gaming disorder).

Shifting the focus from symptom counts toward underlying mechanisms (Brand et al., 2020), as emphasized in psychiatric taxonomies such as the Hierarchical Taxonomy of Psychopathology (Kotov et al., 2017) and Research Domain Criteria (Alves & Cavallieri, 2020; Insel et al., 2010; Yücel et al., 2019), remains a top priority. Adopting mechanistic frameworks may support model-specific predictions, such as differentiating incentive-salience and cue-reactivity processes from habitual or compulsive control (Ince, Gaudet, & Bőthe, 2025a), and can guide investigations into hierarchical phenotypes (Snaychuk, Dermody, & Kim, 2025). Similarly, delineating core from peripheral symptoms is required, which may clarify the role for key symptoms not explicitly addressed in the ICD-11 (e.g., mood modification; Lew-Starowicz et al., 2020; Bőthe, Lonza, Štulhofer, & Demetrovics, 2020a; Miner, Dickenson, & Coleman, 2019; Testa et al., 2024). Clarifying CSBD/PPU subtypes (e.g., based on sexual behaviors, symptom profiles and/or underlying mechanisms) may offer important

Table 4. Etiology, consequences, and intervention/treatment approaches

Key themes	Specific problems	Examples of actions to be taken
1. Risk and Protective Factors		
1.1 Risk and protective factors	- Despite accumulating knowledge, various risk/protective factors require additional examination	- Investigate neurobiological, genetic, psychological, psychosexual, environmental, developmental, and interpersonal influences on CSBD/PPU - Further examine sexual behavioral patterns, especially under-researched forms of escalating behavior (see Table 5, 1.2.1 <i>Intensity Indicators</i>)
1.2 Altered states of sexual arousal	- Recent qualitative reports on PPU describe a subjectively altered state of sexual arousal in which intensified mental sensations outweigh diminished physical sensitivity	- Examine potential mismatches in mental/physical sensations [#] during pornography use (Ince et al., 2023) - Investigate contextual factors such as CSBD/PPU severity, usage patterns, and underlying mechanisms - Assess potential consequences of altered arousal states (see 2.2 <i>Acute Cognitive-Affective, Physical Deficits</i>) - Explore whether similar altered arousal experiences extend to broader sexual behaviors beyond PPU
2. Potentially negative consequences		
2.1 Sexual well-being	- Relationships between CSBD/PPU and sexual well-being (sexual function, satisfaction, and sexual distress) are emerging but remain largely equivocal (especially for CSBD)	- Use behavior-specific sexual functioning measures [*] to account for differences across behaviors (e.g., partnered sex vs. pornography-assisted masturbation; see Table 5 1.2.3 <i>Sexual functioning and well-being</i>) - Expand research to include holistic aspects of sexual well-being beyond functioning (Hoagland & Grubbs, 2021) - Investigate mechanism-focused pathways [*] between CSBD/PPU and sexual well-being - Refine understanding of relevant moderating, mediating, and confounding variables [*] (including but not limited to preferences for pornography over partnered sex, interest in specific sexual genres, different masturbation techniques, and relationship satisfaction; Wright, Paul, Herbenick, & Tokunaga, 2021; Brand, Blycker, & Potenza, 2019; Bronner & Ben-Zion, 2014; Wéry & Billieux, 2017)
2.2 Acute cognitive-affective, physical deficits	- Acute post-pornography deficits in cognitive-affective and physical domains following intensified use are under-researched and lack targeted examination	- Characterize the prevalence, scope, and nature of acute post-pornography complaints, such as concentration difficulties ("brain fog"), physical lethargy, and elevated anxiety [#] (Ince et al., 2023) - Determine whether similar post-use deficits occur in other forms of CSBD beyond PPU - Compare such experiences with other dysregulated behaviors (e.g., gambling), especially post-binge dynamics - Investigate potential mechanisms, including intensified sexual activity (see Table 5, 1.2.1 <i>Intensity Indicators</i>) - Compare clinical and non-clinical populations, examining links to broader negative consequences

(continued)

Table 4. Continued

Key themes	Specific problems	Examples of actions to be taken
2.3 Relational and Societal Consequences	- The relational and societal impacts of CSBD/PPU, including links to violence, infidelity, divorce, and child sexual abuse risk, remain under-researched	- Further investigate potentially reciprocal relationships between CSBD/PPU, romantic bond quality, sexual satisfaction, and sexual behavior (Mestre-Bach & Potenza, 2025; Wizła & Lewczuk, 2024a) - Investigate links between CSBD/PPU and sexual or domestic violence (Brem et al., 2021) - Examine associations with infidelity and divorce (Mestre-Bach & Potenza, 2025) - Assess CSBD/PPU as a potential risk factor for child sexual abuse (Slavin, Scoglio, Blycker, Potenza, & Kraus, 2020)
3. Intervention/treatment		
3.1 Prevention programs	- Few evidence-based prevention programs exist for CSBD/PPU	- Develop evidence-based prevention programs integrating facets like sexual health education and sexual media literacy
3.2 Treatment	- Personalized interventions for CSBD/PPU are currently lacking	- Adopt principles of precision medicine) to enhance the personalization of interventions (Boness & Witkiewitz, 2023; Todorovic, Huisman, & Ostafin, 2024)
3.2.1 Trends/demand for treatment	- Rates of treatment-seeking for CSBD/PPU appear to be increasing, but empirical estimates are lacking	- Examine treatment-seeking trends, motivators, and barriers for CSBD/PPU across different demographic groups (Griffin, Way, & Kraus, 2021; Markert et al., 2023; Short, Wetterneck, Bistricky, Shutter, & Chase, 2016; Stark et al., 2024)
3.2.2 Scope of treatment approaches	- Various intervention approaches beyond CBT, ACT and SSRI pharmacotherapies remain underexplored	- Expand pharmacological, psychotherapeutic, and behavioral interventions (e.g., DBT, mindfulness-based approaches, imaginal retraining, psychedelic-assisted therapies, digital and peer-based support systems, and just-in-time adaptive interventions), and examine integrative treatment approaches
3.2.3 Long-term efficacy	- Long-term efficacy across treatment modalities remains unclear	- Compare the long-term efficacy of individual and combined treatment modalities (Antons et al., 2022; Borgogna et al., 2022, 2024), especially across CSBD/PPU subtypes (Knight & Graham, 2017)
3.2.4 Behavioral change principles	- Behavior change principles have not been robustly examined in CSBD/PPU	- Evaluate behavior change frameworks in CSBD/PPU, including the Behavior Change Wheel (Michie, Van Stralen, & West, 2011), COM-B model (Willmott, Pang, & Rundle-Thiele, 2021), and Theoretical Domains Framework (Atkins et al., 2017) - Assess the effectiveness of abstinence-based approaches[^] in behavior change and recovery
3.2.5 Culturally sensitive treatments	- Culturally sensitive treatment strategies are not well established	- Develop culturally sensitive intervention models that integrate local perspectives on sexuality, addiction, and mental health (e.g., related to sexual norms, moral incongruence, and gender roles) across cultures

ACT = Acceptance and commitment therapy, COM-B = Capability, opportunity, and motivation to perform a behavior, CBT = Cognitive-behavioral therapy, DBT = Dialectical behavior therapy, SSRI = Selective serotonin reuptake inhibitors.

[#]For elaboration, see [Supplementary Materials S2](#)) *Mental/physical mismatches & acute post-pornography concerns*.

^{*}For elaboration, see [Supplementary Materials S3](#)) *Sexual functioning*.

[^]For elaboration, see [Supplementary Materials S4](#)) *“Sexual addiction”, abstinence from pornography and/or other sexual behaviors, and sematic fusion*.

Table 5. Methodological and broader implications

1. Methodological Considerations		
1.1 Prevalence/epidemiology	- The current lack of large-scale epidemiological studies obscures the true prevalence rates for CSBD/PPU	- Establish accurate global prevalence rates via large-scale, representative samples using psychometrically and clinically validated measures
1.2 Sampling frames	- Clinical, adolescent, and dyadic studies on CSBD/PPU remain scarce	- Examine clinical samples, dyadic (e.g., intimate partner) studies, adolescents, and minority groups (also see 2.3 <i>Diversity, inclusivity, and equity in research</i>)
1.3 Longitudinal studies	- Longitudinal data is severely lacking in CSBD/PPU research	- Conduct longitudinal studies, including both prospective and intensive designs
		- Utilize quasi-experimental methods, such as instrumental variable approaches, to strengthen causal inference
1.2 Measurement	- Various improvements are still required to ensure validity and reliability across contexts	- Compare, refine, and validate CSBD/PPU assessment tools using diagnostic interviews, neurobiological markers, and behavioral data to establish standardized cut-off scores and enhance validity, reliability, and cross-cultural applicability (see 2.3 <i>Diversity, Inclusivity, and Equity in Research</i>)
		- Further examine potential discrepancies between self-report and objective (e.g., neurocognitive or behavioral) measures (Antons & Brand, 2018; Engel et al., 2025a)
1.2.1 “Intensity indicators”	- Frequency and duration of sexual activity may overlook key behavioral and motivational nuances in CSBD/PPU	- Investigate novel forms of escalating behaviors (e.g., frequent tab-jumping, “edging,” sexual binges, and a “chaser effect”), noting underlying motivations for escalating use (see Table 3, 2.1.1.1 <i>Tolerance/escalation</i>)
		- Develop standardized measures of sexual “intensity” across different genres and behaviors (Hald & Štulhofer, 2016; Kohut, Fernandez, Fisher, & Campbell, 2024)
		- Examine relationships with appetitive (motivational), consummatory (see Table 4, 1.2 <i>Altered states of sexual arousal</i>) and satiety mechanisms (Brody & Krüger, 2006)
1.2.2 Theoretical specificity	- The distinction between general CSBD scales and behavior-specific measures remains unclear, which risks conflating higher-order (CSBD) and lower-order manifestations (e.g., PPU)	- Test emerging hypotheses such as whether PPU should be considered a distinct construct from CSBD (e.g., Brand et al., 2022), such as examining ‘PPU-only’ presentations against those with broader patterns of CSBD
		- Ensure clear distinctions between high-order constructs (e.g., CSBD) and lower-order constructs (e.g., PPU) to avoid potentially significant conflation
1.2.3 Sexual functioning and well-being	- Current research on CSBD/PPU-related sexual health is hampered by methodological limitations (e.g., assuming equivalence in sexual functioning across behaviors)	- Employ behavior-specific assessments of sexual functioning to differentiate between partnered sex, pornography use, and masturbation [#]
		- Utilize multidimensional scales to capture diverse aspects of sexual well-being (see Table 4, 2.1 <i>Sexual Well-being</i>)
1.2.4 Masturbation	- Current research typically fails to differentiate between types of masturbation	- Clearly differentiate pornography-assisted and pornography-free masturbation
		- Examine additional forms of masturbation, including fantasy-based, partner-assisted, fantasy-free (physical stimulation-only), and unusual/atypical masturbation techniques (Kafkasli et al., 2021) [#]
		- Examine under-researched factors like ego-dystonic masturbation (Castellini et al., 2016; Corona et al., 2010) and compulsive pornography viewing without masturbation
1.3 Qualitative designs	- An over-reliance on top-down research paradigms risks misrepresenting CSBD/PPU and overlooking potentially unique aspects	- Conduct qualitative research to generate hypotheses, followed by quantitative validation in mixed-methods designs
		- Engage diverse stakeholders, including clinicians and individuals with lived experience, to refine knowledge and establish research priorities

(continued)

Table 5. Continued

1.4 Statistical approaches	- Diverse and innovative statistical approaches can address unique research questions and should be utilized accordingly	- Apply advanced cross-sectional methods, including (but not limited to) person-centered analyses, psychological network analysis, and item response theory - Enhance longitudinal research using ecological momentary assessment, latent growth curve modelling, latent transition analysis, longitudinal network analysis, and other techniques - Investigate dose-response relationships, including non-linear patterns (Henry et al., 2023; Snagowski & Brand, 2015)
1.4.1 Separating within- vs between individual effects	- Many longitudinal studies do not adequately separate between- and within-subject effects, which may obscure important insights	- For longitudinal, adopt statistical models that separate within- and between-person effects, such as multilevel modelling, random-intercept cross-lagged panel models, and cross-lagged panel networks
2. Broader Implications and Ethical Considerations		
2.1 Legal and policy implications	- Potential legal and policy implications of CSBD/PPU research remain largely unexplored	- Examine age verification laws for pornography and their intersection with data privacy, as well as their role in addressing access to harmful content (Stardust et al., 2024) - Investigate the legal impact of CSBD/PPU diagnoses on judicial proceedings, policy development, and legislative efforts - Consider industry cooperation or resistance regarding CSBD/PPU research and public messaging
2.2 Interdisciplinary collaborations	- Limited interdisciplinary collaboration in CSBD/PPU research has constrained both scope and methodological consistency	- Promote global, cross-disciplinary collaboration across psychology, psychiatry, urology, neuroscience, sexology, and addiction research (Böthe et al., 2024b) - Standardize methodologies by developing assessment tools, diagnostic criteria, and theoretical models that are endorsed and utilized across multiple disciplines
2.3 Diversity, inclusivity, and equity in research	- CSBD/PPU research is largely based on heterosexual or gay Western males, limiting generalizability	- Conduct large-scale, inclusive studies examining CSBD/PPU across gender, sexual orientation, cultural backgrounds, and age groups, including older adults (Ballester-Arnal et al., 2021; Böthe et al., 2023, 2024a; Ševčíková et al., 2021) - Adapt assessment tools and interventions to ensure inclusivity and cultural sensitivity (Jennings et al., 2022, 2024b)
2.4 Open science	- Open science practices remain underutilized in CSBD/PPU research	- Integrate open science practices at all research stages to enhance transparency and reproducibility (Eben et al., 2023)
2.5 Technological advances	- Emerging technologies may be influencing sexual behaviors and potentially altering CSBD/PPU trajectories	- Examine how emerging technologies (e.g., artificial intelligence, virtual reality, interactive pornography) shape CSBD/PPU trajectories, behavioral shifts, and treatment efficacy
2.5.1 Virtual Reality (VR) and artificial intelligence (AI) and sexual activity	- Little is known about how AI and VR related technology relate to CSBD/PPU	- Examine the impact of AI-generated (e.g., deepfakes) and VR pornography on CSBD/PPU - Investigate ethical, clinical, and public health implications, including privacy risks, exploitation, and psychological consequences of AI-driven sexual interactions (Lapointe et al., 2025; Sharpe & Mead, 2021)
2.5.2 VR and AI use in research and clinical practice	- Little is known about how AI and VR relate to CSBD/PPU from research and clinical perspectives	- Apply AI-based statistical techniques, such as machine learning, to enhance CSBD/PPU research (Ben Brahim et al., 2024; Böthe et al., 2024c) - Develop and evaluate digital interventions, including VR-based and AI-assisted therapeutic tools for CSBD/PPU treatment

(continued)

Table 5. Continued

2.6 Miscellaneous	- Additional considerations should also be considered, including self-report accuracy, self-labelling effects, post-pandemic shifts, and definitional clarity in CSBD/PPU research - Investigate the role of insight and self-awareness in CSBD/PPU and its association with self-report biases* - Examine the psychological and behavioral effects of self-labelling as “addicted” for individuals with and without objectively elevated CSBD/PPU severity (Dover, Leonhardt, & Edwards, 2024) - Assess potential post-pandemic shifts in CSBD/PPU patterns and related behaviors - Ensure consistent definitions of pornography to improve comparability across different samples (Ashton, McDonald, & Kirkman, 2019; Kohut et al., 2020; McKee, Byron, Litsou, & Ingham, 2020)
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*For elaboration, see Supplementary Materials S3) Sexual functioning.

*For elaboration, see Supplementary Materials S5) Response biases and insight.

insights for assessment, diagnosis, and intervention strategies (see Table 3 and Section 11.2.2 *Course and Sub-Types*). Finally, updated diagnostic criteria that adequately reflect cultural, sexual, and gender diversity are essential to improving screening accuracy, intervention effectiveness, equitable access to care, and valid epidemiological estimates (Jennings et al., 2022; Lew-Starowicz & Coleman, 2022).

11.2. Theoretical and conceptual frameworks

Research on CSBD/PPU is shaped by multiple (and sometimes competing) conceptual models, including those related to addiction, impulsivity/compulsivity, sexuality, emotional dysregulation, moral incongruence, and problematic usage of the internet (described in the Section 6 *Etiology*; also see Brand et al., 2019c, 2021, 2025b; Briken, 2020; Coleman et al., 2018; Fineberg et al., 2018; Gola & Kraus, 2021; Kraus, Voon, & Potenza, 2016, 2018; Potenza, Gola, Voon, Kor, & Kraus, 2017). Among these, the addiction perspective arguably garners the most public and professional interest (Fuss, Lemay, et al., 2019b).

Current perspectives on this issue vary considerably. Some work argues in favor of an addiction conceptualization for CSBD/PPU (especially given that available data is arguably in closer alignment with addiction frameworks than with impulse-control disorders; Gola & Potenza, 2018b; Potenza et al., 2017; Toates, 2022), although others have challenged the utility of an addiction framework (especially for CSBD; Briken et al., 2024; Hesse, 2024; Levine & Troiden, 1988; Sassover & Weinstein, 2022; Sassover, Kushnir, & Weinstein, 2024; Taylor, 2019; Williams, Thomas, & Prior, 2022). Recent work also suggests that PPU (perhaps in the absence of other forms of CSBD) may be specifically designated as a behavioral addiction in the ICD-11 (Brand, Blycker, & Potenza, 2019b, 2022; Brand & Potenza, 2023), reflecting potentially distinct mechanisms and treatment needs (elaborated further in 11.2.2 *Course and Sub-Types*). Meanwhile, a transtheoretical framework positioning CSBD/PPU as a “Condition related to sexual health” has been proposed, which may better account for heterogeneous clinical presentations and warrants further consideration (Lew-Starowicz & Coleman, 2022).

Given the widespread interest specifically toward the addiction perspective, this section briefly summarizes current knowledge and key gaps in addiction-related research on CSBD/PPU, while also highlighting the limitations of a ‘one-size-fits-all’ approach (Cantor et al., 2013; Ince, Gaudet, & Bóthe, 2025a; Knight & Graham, 2017; Snaychuk et al., 2025). Due to space constraints, we offer similar ideas for refining research for alternative conceptual frameworks in Table 3.

11.2.1. Addiction models. Addiction-focused research on CSBD/PPU has expanded rapidly, with the field moving beyond earlier symptom-validity debates toward increasingly mechanistic accounts (see Section 6.1.2; Brand et al., 2020; Pistre et al., 2023; Sassover & Weinstein, 2022). Within addiction-oriented perspectives, a growing body of evidence aligns with incentive-salience accounts (Berridge & Robinson,

2016), highlighting cue reactivity, attentional and motivational biases, reward-learning alterations, and regulation-related deficits as potentially key mechanisms (Castro-Calvo, Cervigón-Carrasco, et al., 2021a; de Alarcón et al., 2019; Draps, Adamus, Wierzbą, & Gola, 2022; Gola & Draps, 2018; Kowalewska et al., 2018; Kowalewska & Lew-Starowicz, 2021; Love et al., 2015; Mestre-Bach & Potenza, 2024b; Stark & Klucken, 2017). However, the extent and boundaries of this convergence remain uncertain, particularly given potential heterogeneity of CSBD/PPU presentations and emerging evidence for multiple subtypes (see Section 11.2.2). Moreover, most neurobiological studies continue to be anchored in addiction-based models, while alternative theoretical frameworks remain comparatively underexamined. Interpretations are further limited by methodological heterogeneity, the predominance of cross-sectional designs, and ongoing classificatory uncertainty (Kowalewska et al., 2018; Kowalewska & Lew-Starowicz, 2021; Zhu et al., 2025).

Nevertheless, recent findings compatible with incentive-salience accounts include heightened ventral-striatal responses to erotic cues (Golec, Draps, Stark, Pluta, & Gola, 2021; Lichte et al., 2025; Stark & Klucken, 2017), persistent appetitive memory toward pornographic cues (Kampa et al., *in press*), prioritization of erotic cues across behavioral and electrophysiological tasks (Kowalewska et al., 2018; J. Wang et al., 2024a; Y. Wang et al., 2024b), and amygdala dynamics consistent with salience-network hyperreactivity (Adamus, Bielski, Szatkowska, Gola, & Draps, 2025). Sensitization-like patterns also appear in anticipatory ventral-striatal activity (Liberg et al., 2022), orbitofrontal reward-probability modulation (Golec et al., 2021), and conditioning abnormalities (Stark et al., 2018; Wojciechowski et al., 2025). Functional neuroimaging studies also link CSBD/PPU to altered mesolimbic and salience-network activation (including ventral striatum, dorsal anterior cingulate, orbitofrontal cortex, thalamus, and amygdala) during expectation toward or exposure to sexual cues (Antons, Brand, & Potenza, 2020; Gola et al., 2017; Love et al., 2015; Stark et al., 2018; Voon et al., 2014). Emotional-interference paradigms also demonstrate heightened striatal and thalamic reactivity to sex-related cues (Draps et al., 2024), while sexual-cue distraction may impair working memory (Sinke et al., 2020; Stark & Klucken, 2017). Electrophysiological and magnetoencephalographic studies report amplified early attentional capture, novelty-sensitive late potentials, and altered frontal and parietal activity (Love et al., 2015; Prantner et al., 2024; Wang et al., 2021, 2022). Behavioral studies document attentional biases, inhibitory-control deficits, approach-avoidance asymmetries (Antons et al., 2020; Kowalewska et al., 2018; Sinke et al., 2020; Wang & Huang, 2022), associative-learning and extinction disturbances (Klucken et al., 2016; Stark et al., 2018; Wojciechowski et al., 2025), and reduced spontaneous regulation despite intact instructed reappraisal (Wang, Tang, et al., 2024b).

Structural and connectivity studies also converge on disruptions within salience and control networks (Kowalewska et al., 2018; Seok & Sohn, 2020), including reduced orbitofrontal volume (Draps et al., 2020), alterations in posterior cingulate and limbic regions (Adamus et al., 2025;

Engel et al., 2023; Görts et al., 2023; Seok & Sohn, 2018a; Stark et al., 2018), preliminary evidence of disrupted white-matter integrity, and altered fronto-striatal or amygdala-network coupling (Adamus et al., 2025; Kühn & Gallinat, 2014; Schmidt et al., 2017; Stark & Klucken, 2017). Preliminary findings from functional near-infrared spectroscopy also suggest hyperactive prefrontal connectivity during pornography exposure, followed by elevated cognitive interference (Shu et al., 2025).

Meanwhile, other findings highlight divergences from canonical addiction models and instead suggest partially overlapping but non-identical mechanisms. Molecular evidence indicates serotonergic rather than dopaminergic epigenetic dysregulation in CSBD (Androvičová et al., 2025). Several studies report no broad impairments in executive control or decision-making among men with CSBD (Engel et al., 2025b; Messina et al., 2017; Reid et al., 2011). Additional data show absent dopaminergic downregulation (Stormezand et al., 2021), atypical white-matter hyper-integrity (Miner et al., 2009), weak craving-mood coupling and transient withdrawal (Sassover et al., 2024), and inconsistent Pavlovian-to-instrumental transfer effects (Wells, Krejčová, Binter, Pfaus, & Horsley, 2022). Neuroendocrine findings further indicate distinct patterns, including hypothalamic-pituitary-adrenal dysregulation (Chatzittofis et al., 2022; Jokinen et al., 2017), peripheral stress-hormonal and inflammatory alterations (Ferreira, Teixeira, Talib, & Scanavino, 2025), absence of epigenetic-age acceleration (Boström et al., 2022), and oxytocin/vasopressin differences (Flanagan et al., 2022; Kor, Djalovski, Potenza, Zagoory-Sharon, & Feldman, 2022). Finally, some studies report null associations between cue-reactivity and PPU severity (Markert et al., 2021).

Alternative conceptual frameworks have also received empirical support, particularly those emphasising impulsivity, compulsivity, and emotional dysregulation (Gaudet et al., 2025; Lew-Starowicz et al., 2020; Miner et al., 2019; Testa et al., 2024). However, interpretations are complex given that emotional dysregulation is a transdiagnostic feature across addictive, impulsive, and compulsive conditions (Brand, Young, et al., 2016b; Brand, Snagowski, et al., 2016a, 2025b), and transitions from impulsive to compulsive patterns may reflect a broader addiction trajectory (Wegmann, Knorr, Antons, & Brand, 2025). Common features are also noted across CSBD, obsessive-compulsive disorder, and addictions (Draps et al., 2021).

Phenomenological dimensions related to addiction models also warrant deeper investigation, particularly tolerance-like (e.g., intensified sexual behavior to offset diminished responsivity) and withdrawal-like (e.g., adverse psychological or emotional states following cessation of sexual activity) symptoms, craving, and relative outcome utility (Ince, Gaudet, & Böthe, 2025a). Although data on these domains were limited until recent years, evidence for tolerance-like and withdrawal-like features has gradually accumulated, especially for PPU (Fernandez, Kuss, Justice, Fernandez, & Griffiths, 2023; Ince et al., 2021, 2023, 2024; Lewczuk et al., 2022a; Pistre, Schreck, Grall-Bronnec, & Fatseas, 2023; Roza, Noronha, Shintani, Massuda, Kessler, et al., 2024a), although

important methodological challenges remain. For instance, behavioral escalation has historically been used as a proxy for tolerance; however, escalating use may equally reflect non-pathological motivations (e.g., novelty seeking or sexual curiosity; Kardefelt-Winther, 2015; Sassover & Weinstein, 2022; Starcevic, 2016). Nevertheless, recent self-report studies increasingly support the relevance of habituation-driven escalation, which better may particularly align with addiction frameworks (Böthe et al., 2018; Ince et al., 2023, 2024; Lewczuk, Wizła, et al., 2022b). The interpretation of withdrawal-like symptoms is similarly complex, given potential contributions from neuroadaptation, deprivation, and co-occurring psychopathology, which have not yet been systematically disentangled (Pistre et al., 2023; Roza, Noronha, Shintani, Massuda, Kessler, et al., 2024a; Sassover & Weinstein, 2022; Starcevic, 2016). Table 3 outlines key directions for advancing research in these areas.

The construct of “sexual craving” in CSBD/PPU also remains unsettled, especially whether it reflects heightened sexual desire or a distinct addiction-like motivational drive (Hormes, 2017; Miele et al., 2023). Craving-related mechanisms such as relative outcome utility (a narrowed motivational focus that prioritizes addictive activity over alternative options) are well established in substance-use research but remain underexamined in CSBD/PPU (Hogarth & Field, 2020). If reward narrowing is present, urges may be marked by intensified sexual compulsivity and diminished perceived utility of competing behaviors (Gola, 2016; Perales et al., 2020). Conversely, elevated sexual desire in the absence of such narrowing may challenge the applicability of addiction frameworks (see Table 3).

11.2.2. Course and sub-types. Although CSBD/PPU might constitute a heterogeneous condition with distinct etiological trajectories (Derbyshire & Grant, 2015; Golder et al., 2023; Knight & Graham, 2017; Lew-Starowicz & Coleman, 2022; Riemersma & Sytsma, 2013; Sassover & Weinstein, 2022), heated debates typically centre on a one-size-fits-all conceptualization. Potential subtypes (e.g., based on behavioral patterns, symptom configurations, mechanistic profiles, sex/gender, or sexual-orientation differences) remain conceptually diffuse and empirically underdeveloped (Cantor et al., 2013; Coleman, 1992; Ince, Gaudet, & Böthe, 2025a; Riemersma & Sytsma, 2013; Snaychuk et al., 2025; Sutton, Stratton, Pytyck, Kolla, & Cantor, 2015). Although the ICD-11 lists several behavioral manifestations for CSBD, the absence of validated subtypes continues to impede theoretical, empirical, and clinical progress (Cantor et al., 2013; Knight & Graham, 2017; Riemersma & Sytsma, 2013).

A central question concerns whether CSBD reflects generalized or specific behavioral patterns of sexual dysregulation. According to some accounts, PPU may represent an online-specific phenotype that converges mechanistically with other digitally engineered, potentially addictive behaviors (e.g., compulsive buying-shopping, problematic social media use), supporting consideration under Other Specified Disorders Due to Addictive behaviors in the ICD-11 (Brand, Blycker, & Potenza, 2019b, 2022, 2025a). Taxonomies of

potentially addictive online behaviors, extrapolated largely from gambling and gaming disorders, highlight engineered features such as high-density novelty, rapid reinforcement cycles, algorithmic curation, and reward variability, all of which may potentiate appetitive responding, conditioning, and habit formation (Clark & Zack, 2023; Flayelle et al., 2023; Yücel, Carter, Harrigan, Van Holst, & Livingstone, 2018). In particular, reward uncertainty and high-frequency reinforcement have recently been proposed as prerequisite features for behavioral addictions (Clark & Zack, 2023), although data pertaining to CSBD/PPU is currently insufficient.

Speculatively, the convergence of online design features, behavioral intensification, and individual vulnerabilities may promote a greater addictive potential for online sexual behaviors (e.g., PPU) than offline alternatives (relating to ‘generalized’ forms of CSBD), especially for men. At the population level, sexual stimuli often exert stronger attentional capture in men than women (Strahler, Baranowski, Walter, Huebner, & Stark, 2019), while recent neuroimaging work (all-male community sample) reported stronger brain reward circuit responses to sexual relative to monetary or gaming stimuli (Krikova et al., 2024). Moreover, men tend to respond more strongly toward novel visual sexual stimuli than women (Little, DeBruine, & Jones, 2014; Rupp & Wallen, 2008; Sculley & Watkins, 2022) and may be more prone to sexual conditioning toward visual sexual arousal (Klucken et al., 2009).

CSBD/PPU research among primarily male samples indeed point to enhanced attentional capture by erotic cues (Mechelmans et al., 2014; Wang, Chen, & Zhang, 2022), heightened salience attribution and conditioning to novel visual sexual stimuli (Castro-Calvo, Cervigón-Carrasco, et al., 2021a; Stark & Klucken, 2017; Wang et al., 2022), correlations between PPU severity and stronger coupling between subjective arousal and striatal activity (Klein et al., 2020), and novelty-driven pornography consumption patterns such as genre escalation, rapid tab-shifting, and binge-like sequences (Ince et al., 2021, 2023, 2024; Lewczuk, Lesniak, Lew-Starowicz, & Gola, 2021; Wordecha et al., 2018). Notwithstanding currently insufficient data (especially among women), these observations might partly explain why PPU is the predominant CSBD among men (Grubbs et al., 2024).

More high quality data in these areas may eventually reframe the debate away from whether sexual behavior is inherently addictive and toward how structural affordances may interact with individual-level risk factors in similar ways to gambling and other potentially addictive behaviors (e.g., Yücel et al., 2018). Such knowledge may also help to distinguish individuals at risk for CSBD/PPU from those whose sexual activity (including pornography use) remains healthy and adaptive (Kohut et al., 2017; Sommet & Berent, 2023). Another important yet largely untested avenue is to examine whether individuals with a ‘PPU-only’ presentation (i.e., whose dysregulated sexual behavior is specific to pornography use) differ from those with other expressions of CSBD (which may or may not include PPU; Brand et al., 2019b), such as through differential features (including those beyond diagnostic criteria), psychological and behavioral mechanisms, or treatment responses.

Similarly, refined phenotyping may also need to capture distinct etiological pathways involving impulsivity, compulsivity, impaired decision-making, emotional dysregulation, or moral incongruence (Antons & Brand, 2021; Grubbs & Boness, 2025; Ince, Gaudet, & Bőthe, 2025a). Clinically, recognising multi-level heterogeneity may prevent misclassification, support tailored interventions, and guide mechanism-driven research (Ince, Gaudet, & Bőthe, 2025a; Snaychuk et al., 2025). In turn, etiologically-informed models may clarify whether CSBD/PPU subtypes follow stable trajectories, shift over time, interact with specific risks, transition between forms, or differ as a function of sex/gender, sexual orientation, or other dimensions (Castro-Calvo et al., 2023; Engelhardt et al., 2025; Gola, 2016; Gomez et al., 2024; Grubbs & Boness, 2025; Horváth et al., in press).

11.3. Appetitive-consummatory cycles and potential alterations

Establishing the appetitive (i.e., motivational) and consummatory (i.e., reward attainment) processes underpinning CSBD/PPU remains a complex challenge (Gola, Wordecha, Marchewka, & Sescousse, 2016b; James & Tunney, 2017; Tunney & James, 2017). While appetitive mechanisms (e.g., craving, cue-reactivity) have received growing attention, the consummatory phase of the sexual response (broadly analogous to substance ingestion) remains comparatively underexplored (Koob & Volkow, 2010).

Preliminary qualitative data from individuals with severe PPU describe altered consummatory experiences that warrant further investigation (Ince et al., 2023). Here, respondents described an altered state of sexual arousal characterized by heightened mental arousal alongside diminished physical sensation, especially during intensified patterns of pornography-assisted masturbation (Ince et al., 2023). Such experiences were often linked to particular behavioral dimensions, including rapid tab-switching, prolonged sessions, and escalating novelty aimed at counteracting desensitization (Ince et al., 2023; see Table 4 and Supplementary Materials). Intriguingly, participants also attributed such experiences with with unexpected cognitive and physiological aftereffects (e.g., “brain fog,” lethargy, and heightened anxiety), tentatively pointing to potentially downstream impacts from chronic and intensified pornography use (Ince et al., 2023; Palazzolo & Bettman, 2020).

Parallels may be drawn with trance-like absorption states observed in gambling and gaming disorders, where immersive design features strongly capture and sustain attention in “dark flow” states (Dixon et al., 2018; Guglielmi et al., 2019; Schimmenti & Caretti, 2017; Schluter & Hodgins, 2019; Yücel et al., 2019). These phenomena also align with neurobiological evidence implicating compulsive novelty-seeking, accelerated habituation effects, impaired sexual delay discounting, attentional biases toward sexual cues, and stronger preferences for novelty over familiarity (Banca et al., 2016; Finkenstaedt et al., 2025; Schmidt et al., 2017; Voon et al., 2014; Wang et al., 2022).

These preliminary observations may suggest alterations during appetitive and consummatory phases in CSBD/PPU, reflected in cognitive, emotional, and physiological responses relative to baseline. Future research might explore these observations through established models of sexual response (e.g., the human sexual response cycle and the neurophenomenological model of sexual behavior; Georgiadis & Kringelbach, 2012; Levin & Riley, 2007; Stoléru, Fonteille, Cornélis, Joyal, & Moulier, 2012). Longitudinal, neurocognitive, and mixed-method approaches may clarify their clinical relevance and underlying mechanisms.

11.4. Assessment and methodological considerations

Moving beyond cross-sectional surveys with prospective longitudinal (Demirgöl et al., 2025; Engelhardt et al., 2025) and time intensive designs (e.g., ecological momentary assessment; Borgogna et al., 2025; Henry et al., 2022, 2023; Miner et al., 2019) are of high priority. Variability in prevalence estimates highlights the need for methodological refinement in CSBD/PPU research, particularly regarding measurement validity, construct differentiation, and contextualized assessments of sexual behavior (Table 5). Efforts should also focus on improving conceptual and methodological precision (such as more precisely differentiating CSBD from potentially specific patterns like PPU, as described in Table 5 under theoretical specificity; Brand et al., 2022; Ince et al., 2023), and evaluating sexual well-being across diverse sexual behaviors, including partnered sex and pornography use (Ince et al., 2021, 2023; Voon et al., 2014). Masturbation-related variables also warrant closer attention, especially distinctions between pornography-assisted and pornography-free masturbation (see Table 5 and Supplementary Materials), which may hold implications for clinical assessment and theory development.

There is also a pressing need for qualitative research (Kowalewska et al., 2018) to explore under-recognized facets of CSBD/PPU (e.g., altered states of arousal or unexpected areas of negative consequences; see Section 11.6 *Additional Under-Researched Phenomena* and Table 4). Such approaches may also deepen understanding of established constructs and use trajectories (Blinka et al., 2022; Fernandez, Kuss, & Griffiths, 2021a, 2021b; Fernandez, Tee, & Fernandez, 2017; Fraumeni-McBride, 2023; Hanseder & Dantas, 2023; Ince et al., 2023; Mead & Sharpe, 2020; Palazzolo & Bettman, 2020; Sniewski & Farvid, 2020; Ševčíková, Blinka, & Soukalová, 2018).

11.5. Risk and protective factors

Despite accumulating knowledge of potential risk and protective factors for CSBD/PPU (e.g., de Alarcón et al., 2019; Vieira & Griffiths, 2024), more information is needed on areas relating to environmental influences (e.g., socioeconomic factors, González-Bueso et al., 2022; Hernandez-Mora & Varescon, 2022; Zarei, Alidost, Damghanian, Bőthe, & Farnam, 2025), neurobiological vulnerability (e.g., genetics; Brand, Wegmann, et al., 2019c; Brand, Snagowski, et al., 2016), psychological factors (e.g., heightened preference for specific genres of pornography; de Alarcón et al., 2019),

sexual dimensions (e.g., sexual or pornographic binges; Ince et al., 2023, 2024; Lewczuk et al., 2021; Wordecha et al., 2018) and age of first pornography use relative to first contact with sexual partners (Crabbe, Flood, & Adams, 2024; Riemersma & Sytsma, 2013). Future work should also prioritize theoretically grounded models of risk, avoiding statistical over-control of meaningful predictors (Wright, 2021a, 2021b), and ensuring measurement tools are conceptually and psychometrically robust (Wright & Tokunaga, 2025).

11.6. Additional under-researched phenomena

Several clinically relevant phenomena in CSBD/PPU remain insufficiently explored, particularly qualitative aspects of sexual behavior and under-examined domains of negative consequences.

11.6.1. Qualitative dimensions of sexual behavior. To move beyond frequency or duration of sexual behaviors (Chen et al., 2021c; Gola et al., 2016), recent work has operationalized “intensity indicators” of pornography use (Ince et al., 2021, 2023, 2024), including tolerance-like effects (e.g., escalating content to offset desensitization), frequent switching between stimuli (“tab-jumping”), delaying orgasm to prolong sessions (“edging”), and binge consumption (Blinka et al., 2022; Hanseder & Dantas, 2023, 2023, 2024; Lewczuk et al., 2021; Wordecha et al., 2018). Although binge behaviors are increasingly recognized in other potentially addictive behaviors (Flayelle et al., 2023; Flayelle & Lannoy, 2021), they remain under-examined in CSBD/PPU (Ince et al., 2023, 2024; Lewczuk et al., 2021; Wordecha et al., 2018). Although standardized, interview-derived measures are still lacking, recent network analyses show interrelatedness between tab-jumping, edging, binge use, and tolerance-like patterns in PPU (Ince et al., 2024). Further research into behavioral intensity markers, alongside potential moderators, mediators, and links to novelty-seeking, is therefore warranted.

11.6.2. Negative consequences. While negative outcomes of CSBD/PPU are documented (see Section 7 *Potential Negative Consequences*), certain areas require deeper investigation. Associations with sexual well-being (encompassing satisfaction, function, and distress) remain debated, particularly in dyadic contexts (Dwulit & Rzymiski, 2019; Hoagland & Grubbs, 2021; Rowland & Cooper, 2024). Non-sexual impacts also remain unclear, including acute cognitive, emotional, and physical concerns following heavy pornography use (see *Appetitive-Consummatory Cycles and Potential Alterations*, and Table 3). Some individuals recovering from PPU report a prolonged suppression of libido during abstinence from pornography (a phenomenon referred to as “flatlining”; Fernandez et al., 2021a; Mead & Sharpe, 2020). Whether such outcomes are confined to clinical cases or appear across broader populations remains uncertain. Longitudinal studies (especially with clinical samples) could clarify the prevalence, nature, and course of these domains. Finally, more granular information on the patterns of experienced consequences across different domains (e.g., occupational, educational, interpersonal, financial; Koós

et al., 2021) is currently lacking but may be important for clinical characterization, prevention, and treatment.

11.7. Co-occurring concerns/comorbidities

Most research on psychiatric comorbidities in CSBD/PPU predates contemporary conceptualizations (Kafka, 2010; Reid et al., 2012), underscoring the need for rigorous epidemiological studies aligned with current conceptual frameworks (see Section 4 *Epidemiology*). Examining psychiatric and psychological comorbidities within contemporary CSBD/PPU frameworks may refine our understanding of co-occurring mental health and sexual problems. Associations between CSBD/PPU, substance use disorders, and other potentially addictive behaviors remain unclear (e.g., whether CSBD/PPU emerge secondarily as maladaptive coping mechanisms for other addictions; Gomez et al., 2023; Konkoly Thege et al., 2016; Shmulewitz et al., 2024; Zarate, Ball, Montag, Prokofieva, & Stavropoulos, 2022). Further research should examine the links between CSBD/PPU and paraphilic interests/disorders (Castellini et al., 2018), including whether compulsive pornography use escalates engagement with paraphilic content over time (Seigfried-Spellar & Rogers, 2013) and whether CSBD/PPU is more prevalent among individuals with specific paraphilias or vice versa.

11.8. Interventions: prevention and treatment

Significant gaps remain in prevention efforts, treatment accessibility, and evidence on long-term efficacy. Future research should examine global trends in treatment demand for CSBD/PPU, identify factors shaping help-seeking behavior, and refine model-informed interventions based on known mechanisms of CSBD/PPU (Brand, Antons, et al., 2025a; Bóthe et al., 2023, 2024a; Markert et al., 2023; Stark et al., 2024; van Tuijl et al., 2020). Broadening the range of treatment options (such as online interventions, psychedelic-assisted therapies, and neuromodulation approaches) may improve reach and effectiveness (Abulizi et al., 2025; Bóthe et al., 2021a; Cuppone et al., 2021; Richard & Garcia-Romeu, 2025; Ullisse et al., 2025; Wizła, Kraus, & Lewczuk, 2022; Yang et al., 2025). However, long-term outcomes remain underexplored, highlighting the need for extended follow-up in randomized controlled trials (Antons et al., 2022; Borgogna et al., 2022, 2024). Other treatment paradigms emphasizing mindfulness and interoception also warrant empirical examination (Blycker & Potenza, 2018; Hermann, 2023); Finally, culturally sensitive, stigma-reducing approaches will also be essential to ensure equitable access and relevance across diverse populations (Bóthe et al., 2023, 2024a).

11.9. Broader implications and ethical considerations

Interdisciplinary collaboration and open science practices can strengthen theoretical integration, methodological rigor, and transparency in CSBD/PPU research (Briken et al., 2024; Bóthe et al., 2024b; Eben et al., 2023). Ethical concerns such as age verification and restricted access to explicit materials

should be addressed through informed policy development (Stardust et al., 2024; Woodley & Green, 2025). Promoting diversity in study populations will improve generalizability and support culturally sensitive interventions.

The growing influence of virtual reality (Dekker, Wenzlaff, Biedermann, Briken, & Fuss, 2021; Else, van Andel, Kater, Reints, & Spiering, 2019; Evans, 2022; Milani et al., 2022), artificial intelligence (Lapointe, Dubé, Rukhlyadyev, Kessai, & Lafortune, 2025) and artificial sexual partners (Desbuleux & Fuss, 2024b) in sexual contexts warrants consideration. These technologies may inform novel interventions and research methods (e.g., AI-based analytics; Ben Brahim, Courtois, Vera Cruz, & Khazaal, 2024; Bóthe et al., 2024c) but also introduce ethical and regulatory challenges (Desbuleux & Fuss, 2024a; Döring, Le, Vowels, Vowels, & Marcantonio, 2024; Lapointe et al., 2025).

Finally, integrating perspectives from sexology and sexual medicine is essential, given the inherently sexual nature of these behaviors (Briken, 2020; Briken et al., 2024). Inclusion of qualitative approaches and perspectives of people with lived or clinical experience will enhance the relevance of findings (Blinka et al., 2022; Ince et al., 2023; Kowalewska et al., 2018; Palazzolo & Bettman, 2020), ideally followed by quantitative examination to capitalize on such insights (i.e., following principles of sequential exploratory mixed methods research; Creswell, 2021; Creswell & Plano Clark, 2018). Stronger cross-disciplinary communication will facilitate knowledge transfer and support expanded funding for CSBD/PPU research (Briken et al., 2024; Bóthe et al., 2024b).

11.10. Limitations and conclusion

The current narrative review provides the first large-scale interdisciplinary summary of current knowledge pertaining to CSBD and PPU. While we have endeavored for a comprehensive summary of current knowledge across clinical and research contexts, we recognize that this review was not conducted systematically and that the presented results were not always clearly separated across clinical and community samples. We also reiterate that many of the ideas presented (especially in Section 11 and the [Supplementary materials](#)) are speculative and intended to promote ongoing dialogues and future research.

Nevertheless, research on CSBD/PPU continues to accelerate rapidly (De Luca et al., 2025; Zhang et al., 2025), and these issues are experienced globally with substantial burden for those affected. However, many important knowledge gaps remain. We anticipate that high-quality investigations (especially with diverse methods, longitudinal designs, and clinical samples) may yield critical insights into the mechanistic, symptom-related, and potentially heterogeneous facets of CSBD/PPU.

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