











REVIEW

A Roadmap to Problematic Pornography Use: Research, Assessment, and Treatment

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Main Points

- **Conceptualization and measurement:** Problematic pornography use remains positioned at the intersection of addiction, impulse control, and compulsive behavior models. However, no consensus has been reached, and there is a need for standardized diagnostic criteria and culturally valid, psychometrically robust instruments aligned with International Statistical Classification of Diseases, Eleventh Revision.
- **Methodological limitations:** Current research relies heavily on university and online self-selected samples, limiting representativeness and generalizability across national and cultural contexts. More inclusive, longitudinal, and mixed-method studies are needed.
- **Risk and protective factors:** Traits such as impulsivity, insecure attachment, and early exposure often serve as risk factors, while family functioning, social support, and religious or ethical commitments emerge as protective factors. Integrating both risk and resilience into developmental and cultural models is essential.
- **Effects and content differences:** Problematic pornography use is associated with psychological distress, sexual dysfunction, relationship difficulties, and aggressive attitudes. However, these effects are heterogeneous and often shaped by gender, sexual orientation, usage context, and cultural background. Most studies neglect the role of content type (e.g., violent vs. nonviolent, amateur vs. romantic) in shaping outcomes.
- **Interventions and future directions:** Cognitive behavioral therapy, acceptance and commitment therapy, mindfulness-based programs, pharmacological treatments, and online self-help tools show promising results. Yet, evidence is limited by small, male-dominated samples, short follow-up periods, and reliance on self-report. More rigorous, long-term, and diverse intervention studies are required.

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ABSTRACT

Problematic pornography use has gained increasing scholarly and clinical attention over the past decade. Despite this, definitions remain contested, classification models are inconsistent, and measurement approaches vary, creating barriers for cumulative knowledge and evidence-based practice. This review provides an overview of the conceptual, methodological, and clinical landscape of problematic pornography use. The goal is to guide researchers and practitioners by summarizing current knowledge, identifying research gaps, and highlighting future directions. A narrative review of the literature was conducted, synthesizing theoretical models, epidemiological findings, measurement tools, identified risk and protective factors, and available intervention approaches. Special attention was given to cultural variation, usage characteristics, and the role of moral incongruence. Findings indicate that problematic pornography use is situated at the intersection of behavioral addictions, impulse-control difficulties, and compulsive tendencies, with no consensus on a unifying framework. Prevalence estimates vary widely due to sampling bias and definitional inconsistencies. Risk factors include impulsivity, insecure attachment, and early exposure, while protective factors such as family support and ethical disapproval may buffer risk. Excessive pornography use has been linked to psychological distress, relationship difficulties, and aggressive sexual attitudes, though associations are moderated by contextual variables. Measurement remains inconsistent, with few tools aligned with diagnostic criteria. Interventions such as cognitive behavioral therapy, acceptance and commitment therapy, mindfulness, and pharmacological options show promise, but evidence is limited by small samples and short follow-ups. Future research should prioritize standardized definitions, culturally adapted measurement, inclusion of content-type variables, and methodologically rigorous longitudinal designs. Clinical efforts must expand to diverse populations and relational contexts, moving the field toward an empirically grounded and ethically responsible science of problematic pornography use.

Keywords: Addictions to technology, pornography research, Problematic pornography use

Introduction

Pornography is one of the most widely consumed digital media formats, driven by technological advancements and internet accessibility (Peter & Valkenburg, 2016). Beyond entertainment, it operates as a multibillion-dollar industry that shapes sexual norms and expectations (Altman & Watson, 2019; Dines, 2010; Tarrant, 2016). The digital era has expanded on-demand access and user-generated content, transforming production and consumption patterns (Naghdechi et al., 2022).

Emerging technologies, such as virtual reality and artificial intelligence, are further reshaping pornography consumption, making it more personalized and interactive (Marshall & Miller, 2019). This evolution has intensified research on its effects on individuals and society (Sinković et al., 2013; Zatonni et al., 2020).

While these developments deepen users' relationships with pornography, they also trigger problematic usage behavior in some individuals. An increasing number of individuals report compulsive use leading to psychological distress (Camilleri et al., 2021; Maddock et al., 2019), relationship dissatisfaction (Willoughby & Dover, 2024), and cognitive dissonance based on moral incongruence (Lewczuk et al., 2020). Early exposure, especially in adolescence, is associated with unrealistic sexual expectations and risk-taking behaviors (Adarsh & Sahoo, 2023).

Despite growing concerns, problematic pornography use (PPU) is not classified as a distinct disorder in DSM-5 but is recognized under compulsive sexual behavior disorder (CSBD) in the International Classification of Diseases, Eleventh Edition (ICD-11), which defines it as an inability to control sexual urges, causing distress and functional impairment.

In sum, in modern societies—and particularly within Western cultural contexts—pornography has evolved into an ordinary, normalized component of daily life. As technology moves toward an era shaped by artificial intelligence and virtual or augmented reality, pornography occupies

As technology moves toward an era shaped by artificial intelligence and virtual or augmented reality, the topic continues to be a focal point in public health and developmental psychology—particularly regarding young people's perceptions of their bodies, relationships, and sexual scripts—the clinical implications of problematic use extend to both theoretical (e.g., classification systems, research methodologies) and practical (e.g., effects, antecedents and consequences, treatment strategies) levels.

At this point, there is a clear need for a comprehensive and integrative overview of this field. This review aims to serve as a roadmap for researchers and clinicians seeking to understand and address PPU. Specifically, it outlines key issues related to the definition, classification, prevalence, psychological and relational impacts, assessment tools, and intervention strategies associated with PPU, drawing on interdisciplinary perspectives and the most recent empirical findings.

Methods

This narrative review is based on literature searches conducted in PubMed, PsycINFO, Web of Science, Scopus, and Google Scholar between 2018 and 2024. English-language articles published within the past 5 years were prioritized. The main search terms included “problematic pornography use,” “compulsive sexual behavior disorder,” “pornography addiction,” “hypersexual behavior,” “sexual compulsivity,” “sexual addiction,” “sexually explicit material,” and “cybersex addiction.” However, classical or seminal papers were also included when relevant, based on the authors' expertise, to provide a historical perspective on the conceptualization and development of PPU.

Results and Discussion

The results are organized into six main sections: Conceptual framework of PPU, prevalence, measuring PPU, prevalence, risk, and protective factors, effects of PPU, treatment approaches for PPU, and protective and preventive interventions. Each section includes several subtopics that integrate theoretical, empirical, and clinical perspectives from the reviewed literature.

Conceptual Framework of Problematic Pornography Use

Defining Pornography: A Persistent Challenge

Defining pornography remains a key challenge in this research area, with terms such as sexual visual stimuli, erotica, and sexually explicit media used interchangeably (Vaillancourt-Morel et al., 2019). The internet's vast and diverse content makes it difficult to reach a unified consensus on its definitions (De Alarcón et al., 2019; Kohut et al., 2020).

Furthermore, the definition of pornography varies among individuals (Hald et al., 2014; Willoughby & Busby, 2016), and the literature highlights the ongoing definitional difficulties (Busby et al., 2020; Kohut et al., 2020; McKee et al., 2020). In a panel study, social scientists defined pornography as "obscene material intended to arouse sexually," while humanities scholars framed it as a "structure" and "process" shaped by power dynamics (McKee et al., 2020). Recently, Kohut et al. (2020, p. 12) proposed a comprehensive conceptual definition that captures the multifaceted nature of pornography:

"Pornography use is a common but stigmatized behavior, in which one or more people intentionally expose themselves to representations of nudity which may or may not include depictions of sexual behavior, or who seek out, create, modify, exchange, or store such materials."

Classification of Problematic Pornography Use

The classification of PPU remains a subject of debate, with different frameworks suggesting links to hypersexuality (Kafka, 2010; Reid et al., 2011), addiction (Delmonico, 1997; Griffiths, 2012; Kor et al., 2013; Potenza, 2017; Young, 1998, 2004), obsessive-compulsive disorder (Cooper et al., 2004), and impulse control disorders (Kraus et al., 2018). However, although some scholars associated PPU with the notions outlined above, early scholars relied on quantitative studies and associated PPU with the frequency of usage. For example, according to a previous study, individuals spending more than 11 hours per week on pornography (Cooper et al., 1999) or experiencing more than seven orgasms per week (Kafka, 2010) were considered problematic. Despite this finding, later studies have highlighted that the frequency alone may not be a significant indicator of PPU. Instead, the subjective sense of loss of control and its functional impairments have become central to determining PPU, which distinguishes between non-problematic low/high-frequency use and problematic high-frequency use (Böthe et al., 2020).

First classification attempt was made in 2010 by Martin P. Kafka, for the inclusion of out-of-control sexual behavior, named Hypersexual Disorder for DSM-5, emphasizes recurrent and excessive sexual urges or behaviors leading to distress and significant impairments (Kafka, 2010). However, the DSM-5 committee ultimately rejected the proposal, citing concerns over forensic misuse and insufficient empirical support (Reid & Kafka, 2014). Despite ongoing classification efforts, PPU is not currently recognized as an independent disorder in either the DSM or ICD. One of the primary reasons for this is the limited number of empirical studies specifically addressing PPU (Ince et al., 2021). Furthermore, to formalize the classification of compulsive sexual behaviors, the World Health Organization introduced CSBD in

ICD-11. According to ICD-11, CSBD is categorized under impulse control disorders and includes a wide range of behaviors associated with sexual behaviors such as masturbation, cybersex, and pornography use. Nevertheless, CSBD is categorized under impulse control disorders in the ICD-11; some researchers argue that it exhibits more compulsive than impulsive characteristics (Lew-Starowicz & Coleman, 2022). Despite this controversy, according to ICD-11, CSBD is defined by a persistent loss of control, functional impairment, and repeated unsuccessful attempts to reduce the frequency or intensity of compulsive sexual behaviors (Kraus et al., 2018). Given that pornography use is one of the most prevalent symptoms of CSBD, which is observed in approximately 80% of cases (Kafka, 2014; Wordecha et al., 2018), recent studies have conceptualized PPU within the context of CSBD. Based on this classification, PPU can be defined as repetitive and uncontrollable pornography use that leads to unsuccessful attempts to reduce pornography use, resulting in significant functional impairments in various domains, including academic, professional, and interpersonal areas. Furthermore, ongoing debates regarding the classification of CSBD persist, which are also addressed below.

Impulse Control Disorder Model

Impulse control disorders are characterized by a persistent inability to resist urges for short-term gratification, despite long-term negative consequences. Although CSBD is not classified strictly under impulse control disorders in ICD-11, it shares common features, such as impulsivity and diminished capacity to evaluate consequences. For example, excessive pornography consumption that impairs social or physical functioning is often cited as illustrative of such dysregulation (Gola & Potenza, 2018).

Impulsive-Compulsive Spectrum Model

Although CSBD is classified as an impulse control disorder in the ICD-11, its impulsive or compulsive nature remains debated. Impulsive behaviors are reward-driven, whereas compulsive behaviors develop as habitual responses to avoid harm. This distinction highlights the differences in the underlying mechanisms (Böthe et al., 2022). Furthermore, the addiction process has been proposed at the beginning as more impulsive in nature and later to become more compulsive, emphasizing its transitive nature (Brand et al., 2016). However, despite this proposed transition, some researchers have linked CSBD more strongly to impulsivity (Böthe et al., 2019), while others have associated it with compulsivity (Sassover & Weinstein, 2020).

Obsessive-Compulsive Spectrum Model

In the Obsessive-Compulsive Spectrum Model, the compulsivity component refers to repetitive behaviors aimed at avoiding negative consequences, while impulsivity is driven by the pursuit of immediate gratification. This distinction complicates the classification of CSBD and PPU within the spectrum (Kraus et al., 2018). Moreover, according to the ICD-11, such behaviors are more habitual and obligatory than pleasure-driven behaviors. Coleman's Impulsive/Compulsive Sexual Behavior Model suggests that these behaviors often have both impulsive and compulsive components (Coleman, 2018). For PPU to be considered compulsive, it typically involves rigid routines and strict patterns, such as watching pornography at the same time and in the same way, indicating habitual behavior (Antons & Brand, 2021).

Addiction Model

Addiction is traditionally defined as dopaminergic activation in the ventral reward pathways, leading to tolerance and withdrawal. However, research has shown that certain behaviors, independent of substance use, can trigger similar neurobiological changes, leading to the recognition of behavioral addictions (Olsen, 2022). Reflecting this, the DSM-5 classified gambling disorder under the substance-related and addictive disorders section and listed internet gaming disorder as a condition requiring further study to be recognized as a distinct condition (American Psychiatric Association, 2022). In contrast, ICD-11 (2018) classified gaming disorder as a behavioral addiction alongside gambling disorder. In ICD-11, gambling disorder, gaming disorder, and CSBD share several common components, including a loss of control, the continuation of behavior despite negative consequences, centrality in life (salience), and impairment in functionality.

According to this model, emotional distress plays a crucial role in the development of CSBD (Goodman, 1993). Sexual addiction theory further links CSBD to a “wounded sense of self,” suggesting compulsive sexual behaviors serve as coping mechanisms for psychological distress (Bóthe et al., 2022; Goodman, 1993) and regulation for negative emotions (Khantzian, 1997). The theory incorporates elements such as cognitive biases, mind preoccupation, triggers, and rituals into this cycle. Traditionally, this conceptualization has been defined by characteristics such as disorganized attachment styles, concomitant mood disorders, family structure with a history of addiction, and childhood trauma (e.g., abuse, neglect, or sexual abuse) (Bóthe et al., 2022). Recent research supports this framework, emphasizing insecure attachment and emotion regulation difficulties playing a significant role in the development of CSBD. Kotera and Rhodes (2019) found that anxious attachment mediates the link between childhood trauma, narcissism, and sex addiction, suggesting that attachment-related distress is a key factor in the development of CSBD. Similarly, Wizła and Lewczuk (2024) demonstrated that difficulties in emotion regulation mediate the relationship between insecure attachment and both CSBD and PPU, reinforcing the role of emotional dysregulation in compulsive sexual behaviors.

Unlike gambling and gaming, pornography addiction lacks clear empirical foundation. Hilton and Watts (2011) argue that PPU shares neurological and symptomatic similarities with other addictions, particularly affecting the mesolimbic system (responsible for reward, motivation, pleasure, and emotional regulation). Research has also shown increased Δ FosB protein production in pornography users, similar to substance addictions (Hilton & Watts, 2011). Sensitization studies have further indicated that brain regions activated in cocaine users when exposed to drug-related cues are also activated by erotic imagery (Phillips et al., 2015). However, methodological limitations and a lack of comprehensive empirical studies prevent classification of PPU as a behavioral addiction in ICD-11 (Bóthe et al., 2022, World Health Organization, 2018).

Beyond these perspectives, alternative models provide different approaches. For instance, the Dual-Control Model (Janssen & Bancroft, 2007) suggests an imbalance between excitatory and inhibitory systems, which may contribute to sexual dysfunctions and pathological behaviors. On the other hand, the

Non-Pathological Model (Bóthe et al., 2022; Vigorito & Braun-Harvey, 2017) argues that sexual behaviors are part of natural individual differences and excessive sexual activity may not be inherently pathological. These alternative models offer valuable insights that complement and sometimes challenge previously established theories.

Measuring Problematic Pornography Use

Measuring Quantity of Pornography Use

Although the quantitative aspect of pornography use was initially considered the primary indicator of PPU, over time it has become clear that relying solely on usage duration or frequency presents a significant limitation. This is because frequency of use may not necessarily predict PPU (Bóthe, Tóth-Király, et al., 2020). However, the quantitative aspect of use is still being questioned as an important variable in almost every research study. Among these studies, viewing duration was measured as weekly hours or minutes (Baranowski et al., 2019; Gola et al., 2016; Mennig et al., 2022), while recent studies favor session-based duration reporting (Bóthe et al., 2018). Pornography use frequency is frequently categorized as follows: never, once in the past year, 2–6 times, 7–11 times, monthly, 2–3 times a month, weekly, 2–3 times a week, 4–5 times a week, 6–7 times a week, and more than 7 times a week (Bóthe et al., 2020).

Widely Used Problematic Pornography Use Scales Worldwide

Over 20 different scales have been developed to assess PPU, utilizing various theoretical models. Some rely on Griffiths’ addiction model (Griffiths, 2005), others on the DSM-5 obsessive-compulsive disorder criteria (Compulsive Pornography Consumption Scale, Cyberporn Compulsivity Scale; APA, 2022) or Kafka’s hypersexuality criteria (Pornography Consumption Inventory; Kafka, 2010). Additionally, some scales focus on negative effects (Pornography Consumption Effect Scale, PCE-SF, PCE-R) or self-regulation deficits (Deficient Self-Regulation Scale, Habit Strength Scale, Negative Consequences Scale). However, many of these tools lack a strong theoretical grounding (Bóthe et al., 2018).

A systematic review by Fernandez and Griffiths (2021) highlighted that only two scales fully encompass the addiction dimensions (Griffiths, 2005). First, PPU Scale (Kor et al., 2014)—evaluates distress, functional impairment, excessive use, and control difficulties. Moreover, second, Problematic Pornography Consumption Scale (PPCS; Bóthe et al., 2018) includes salience, mood modification, conflict, tolerance, relapse, and withdrawal. Moreover, supporting their assumptions, a meta-analysis of 17 studies on PPCS reported an internal consistency of .91 (Demirgöl et al., 2024). The PPCS is unique in explicitly measuring both quantitative and qualitative tolerance, making it a widely accepted scale to measure PPU (Bóthe et al., 2018, 2023; Fernandez & Griffiths, 2021).

Scales Assessing Perceived Effects, Motivations, and Moral Disapproval

Some instruments do not directly measure PPU but instead focus on related constructs such as perceived effects, motivations, or moral disapproval—each of which represents a widely studied aspect of pornography use. Pornography Consumption Effect Scale (Hald & Malamuth, 2008) measures perceived

positive and negative effects of pornography use. Pornography Use Motivations Scale (Bóthe et al., 2021) measures eight motivations for pornography use, including sexual curiosity, pleasure, stress relief, and self-exploration. Pornography Craving Questionnaire (Kraus & Rosenberg, 2014) assesses craving, control difficulties, psychophysiological reactions, and emotional changes related to pornography consumption.

Moral disapproval is an essential factor that influences perceived PPU. Studies suggest that individuals may subjectively perceive their pornography use as problematic due to moral beliefs rather than actual consumption patterns (Grubbs et al., 2015). Moral Disapproval Scales (Grubbs et al., 2015; Volk et al., 2016) measure moral incongruence in pornography use. The Pornography Moral Disapproval Scale (Dinçer & Eksi, 2024) was developed to assess general moral attitudes toward pornography, particularly in religious populations, while intentionally excluding explicit religious language or framing.

These validated scales provide a multidimensional approach to studying pornography use, helping researchers assess problematic behaviors, motivations, psychological effects, and moral influences comprehensively.

Prevalence, Risk, and Protective Factors

Prevalence of Problematic Pornography Use

The epidemiology of PPU varies across studies due to differences in measurement methods, which range from validated scales to single, researcher-generated item assessments. An additional concern is the limited use of nationally representative samples in PPU research, which limits the generalizability of these findings.

Problematic pornography use has been increasingly recognized in recent literature and is often considered a common behavioral manifestation of CSBD (Kraus et al., 2018). In this context, the lifetime prevalence of CSBD among psychiatric inpatients, estimated at 4% to 5% (Jha & Banerjee, 2022), underscores the clinical significance of PPU. Furthermore, the rates of self-identified pornography addiction have been reported to range from 1% to 11% across studies (Grubbs et al., 2020). Although nationally representative studies are limited, their estimates of PPU prevalence suggest rates between 1% and 3% among women and between 4% and 11% among men (Grubbs et al., 2019; Grubbs et al., 2022; Rissel et al., 2017) indicating greater prevalence among men. Cross-cultural data collected from 42 countries revealed a prevalence of PPU ranging from 3.2% to 16%, with the highest rates reported in Taiwan, China, Malaysia, Türkiye, and Brazil respectively (Bóthe, Nagy et al., 2024).

Risk Factors

Identifying risk and protective factors for PPU informs evidence-based prevention and intervention strategies. A review of systematic reviews, meta-analyses, artificial intelligence (AI)-based studies, and comprehensive theses highlights key PPU risk factors (Bóthe et al., 2024; Chen, 2022; Dinçer, 2022; Grubbs et al., 2020; Seyedzadeh Dalooiy, Aghamohammadian Sharbaaf, et al., 2023)

Particularly, Bóthe et al. (2024) conducted an AI-supported meta-analysis with 112,397 individuals from 74 datasets across 16 countries. Using a random forest imputation algorithm, they

ranked risk factors based on their impact from highest to lowest, providing a structured classification of PPU risk determinants. Results are presented in Table 1.

The literature was reviewed, and the risk factors for PPU were categorized. However, some perspectives suggest that sexual desire is the most significant influence on pornography use and that including it as a variable may render other influences negligible (Binnie & Reavey, 2020). For instance, a recent meta-analysis of 51 studies involving 45,808 individuals identified sexual compulsivity as the most significant correlation of internet pornography use (Akbari et al., 2024). It should be emphasized that this effect is particularly significant when considered within the context of impulse control disorders. Nevertheless, the categorized presentation of the above table is expected to contribute to the literature.

Protective Factors

While most research has focused on the risk factors that cause PPU, protective factors that reduce the likelihood of PPU have also been examined. Religious commitment, spirituality, family functioning, social competence, self-esteem, self-control, social relationships, and school commitment were among the most effective protective factors against PPU. For example, religious practices and spiritual commitment contributed to more conservative attitudes and social norms toward pornography use (Hardy et al., 2013; Ma et al., 2017). Similarly, strong family ties and positive social relationships, characterized by emotional support, were associated with lower levels of PPU (Doornwaard et al., 2015; Mesch, 2009). These findings suggest that the promotion of protective factors may increase the effectiveness of interventions to reduce PPU. Results are presented in Table 2.

Effects of Problematic Pornography Use

Problematic pornography use has been associated with diverse negative outcomes across developmental, relational, and clinical domains. These effects may manifest as aggression, distorted sexual perceptions, relationship difficulties, mental health issues, and neurological changes (Wright et al., 2016; Bóthe et al., 2018). The effects vary depending on the frequency, content type, and socio-cultural context (Chen et al., 2021; Rowland & Uribe, 2020). On the other hand, it has been suggested that the true effects of internet pornography can only be revealed by completely eliminating its use (Wilson, 2016).

Mental Health and Psychological Well-Being

Problematic pornography use is linked to several negative mental health issues, including sexual problems, addiction-like behaviors, depression, anxiety, and social difficulties. A major factor is the loss of control over use, often leading to guilt, shame, or regret, which can worsen psychological distress. (Bóthe et al., 2018, Wéry & Billieux, 2017).

Some individuals use pornography to cope with negative emotions like stress, boredom, or loneliness. Over time, this can lead to compulsive use that disrupts daily life, affecting work, school, and relationships. Frequent engagement may also lower self-esteem, increasing social withdrawal and emotional isolation (Brand et al., 2016, Grubbs et al., 2015).

Table 1.
Categorized Risk Factors for Problematic Pornography Use

Categories	Risk Factors*
Sociodemographic risk factors	Male gender
	Young adults
	Loneliness
	Early onset of pornography use
	Lower religiosity
	Higher socioeconomic status
Personality characteristics	Non-heterosexual sexual orientation
	Impulsivity/lack of perseverance
	High sensation-seeking/novelty-seeking
	Pornography use to relieve distress
	Low self-control
	Low self-esteem
	Maladaptive coping strategies
	High neuroticism
Negative emotions	Proneness to boredom
	Emotional avoidance as pornography uses motivation
	Sexual shame
	Emotional dysregulation (difficulty in managing emotions)
	Stress reduction as pornography use motivation
Associated mental disorders	Guilty
	Stress reduction as pornography use motivation
	Anxiety symptoms
	Depressive symptoms
	ADHD
	Internet addiction
	Problematic gaming behavior
Borderline personality disorders	
Pornography use characteristics	Paraphilic disorders
	Substance use disorders
	More frequent pornography use
Pornography use characteristics	Moral incongruence toward pornography use
	Excessive time spent on pornography (session duration)

*Risk factors are ranked according to the literature, from the highest to the lowest impact value.

However, the link between PPU and mental health is complex and not always straightforward. Research suggests that factors like loneliness, anxiety, and low self-esteem often play a role.

Current studies also have limitations, such as using samples that are mostly male, heterosexual, and from Western cultures. Future research should include more diverse participants to provide a clearer and more sensitive understanding of the issue (Vieira & Griffiths, 2024).

Neurological Effects of Problematic Pornography Use

Problematic pornography use is associated with changes in the brain structures involved in reward processing, impulse control, and self-regulation. These include reduced striatal volume, impaired prefrontal-limbic connectivity, and increased tolerance to sexual stimuli (Kühn & Gallinat, 2014; Schmidt et al., 2017). Attention biases toward erotic stimuli mirror patterns observed in substance addiction (Wang et al., 2022; Golec et al., 2021), with findings pointing to sensitization, hypofrontality, and HPA axis dysregulation (Banca et al., 2016; Simsarian et al., 2023). In women, pornography use has been linked to increased activation in Brodmann area 45, which is potentially related to empathy circuits (Cuesta et al., 2020), while adolescents show heightened vulnerability due to underdeveloped emotional regulation (Faisal et al., 2022). However, causality remains unclear, emphasizing the need for longitudinal studies.

Relational Effects

Problematic pornography use has been consistently associated with a range of adverse relational and sexual outcomes, though these associations are shaped by contextual factors such as frequency, secrecy, and partner alignment. Studies indicate that PPU—particularly when hidden from one’s partner or perceived as excessive—can undermine relational satisfaction by eroding trust and intimacy, often leading to emotional distancing or conflict (Koletic & Vlahov, 2025; Vaillancourt-Morel et al., 2020). Gender-specific patterns have also emerged: while frequent solitary use among men is linked to reduced sexual desire and satisfaction, women’s pornography use tends to be associated with increased sexual interest and partnered activity (Kohut et al., 2021; Wright & Tokunaga, 2025).

On the sexual functioning side, high-frequency use (e.g., 3+ times per week) has been linked to erectile difficulties, dissatisfaction with one’s sex life, and reduced ability to engage in desired sexual behaviors (Malki et al., 2021). Event-level research also shows that solitary use on days of partnered sex may predict heightened sexual distress in partners (Vaillancourt-Morel et al., 2021). While the COVID-19 pandemic saw a spike in pornography consumption, there is no conclusive evidence suggesting that this led to a parallel increase in sexual dysfunction (Fotinos et al., 2024). Overall, the literature suggests that the impact of PPU is not uniform but varies significantly depending on usage patterns, individual differences, and partner dynamics.

Distorted Perceptions and Sexual Scripts

Problematic pornography use significantly shapes an individual’s internal understanding of sex, relationships, and self-worth by presenting exaggerated and unrealistic sexual presentations and scenarios. This exposure can foster misleading sexual scripts, particularly among adolescents and young adults, by cultivating problematic expectations such as rigid dominance-submission dynamics and highly specific gendered sexual roles (Peter & Valkenburg, 2016; Sun et al., 2016). Furthermore, the pervasive display of idealized body images and performance standards in pornography can lead to profound issues with body

Table 2.
Protective Factors against Problematic Pornography Use and Its Strongest Predictors in Adolescents and Adults Participants

Protective Factor	Description/Explanation	Related Studies
Religious devotion and worship	Engaging in religious practices and adherence to religious norms helps to develop more conservative attitudes toward pornography use.	Hardy et al. (2013); Baltazar et al. (2010); Grubbs et al. (2020); Rasmussen et al. (2018)
Spirituality	Adherence to religious or spiritual values was negatively associated with PPU.	Ma et al. (2017)
Family functionality	Providing emotional intimacy and support within the family reduces PPU.	Doornwaard et al. (2015); Greenfield (2004); Ma et al. (2017)
Social competence	Cognitive, emotional, and behavioral skills enable individuals to communicate effectively with others, reducing PPU.	Ma et al. (2017)
Self-esteem	Having a positive perception of oneself reduces the likelihood of PPU.	Li et al. (2023)
Self-control	The ability to control their personal behavior reduces PPU.	Grubbs et al. (2015)
Social relations	Positive social relationships are associated with lower levels of PPU.	Mesch (2009); Shek & Ma (2011); Kalina et al. (2009)
Commitment to school	A strong bond with the school makes them less likely to visit pornographic websites.	Varner et al. (2017)
School type	Religious schools and schools where boys and girls receive separate education reduce the risk of excessive pornography use.	Varner et al. (2017)

Note: PPU = Problematic pornography use.

dissatisfaction (Demirgöl et al., 2025; Gewirtz-Meydan et al., 2024; Gewirtz-Meydan & Spivak-Lavi, 2023), increased anxiety about sexual performance (Goldsmith et al., 2017; Wright et al., 2023). Consistent with these findings, Engelhardt et al., (2025) provided further evidence that PPU is significantly associated with elevated body dissatisfaction and broader psychopathological symptoms, underscoring the interplay between PPU and self-perception-related distress. Women, in particular, often report feeling inadequate when comparing themselves to performers shown in pornography, which negatively affects their self-esteem and broader relationship dynamics (Ashton et al., 2018; Fernández-Ruiz et al., 2023). These internalized distortions in perception and expectation can profoundly interfere with healthy interpersonal relationships and overall sexual satisfaction, especially when exposure begins at an early age (Owens et al., 2012). Such fundamental shifts in individual worldview can carry significant implications for how individuals navigate their social and intimate lives.

Aggression, Hostile Attitudes, and Digital Sexual Violence

Consumption of violent or misogynistic pornography has been shown to normalize sexual violence and increase the acceptance of rape myths, particularly against women (Rodríguez-Castro et al., 2021; Wright et al., 2016; Zhang et al., 2024). Problematic pornography use has also been linked to cyber dating violence, especially among adolescents, with hostile sexism moderating this association (Morelli et al., 2024). Moreover, pornography use frequency correlates with stronger endorsement of traditional gender roles, rape myths, and acceptance of dating violence (Evans-Paulson et al., 2023), while longer use was associated with increased hostile sexism and acceptance of sexual violence myths (Borgogna et al., 2022). Objectification and dehumanization of women in pornography (Bridges et al., 2024; Neufeld, 2020) may reinforce these attitudes. Recent studies have emphasized the

connections between pornographic language and misogynistic online communities such as Incels, suggesting broader societal implications (Hart & Huber, 2023; Tranchese & Sugiura, 2021).

The association between pornography use and acceptance of non-consensual behaviors underlines the urgency of prevention strategies targeting digital sexual violence (Hearn & Hall, 2022; Peter & Valkenburg, 2016; Wright et al., 2016).

Treatment Approaches for Problematic Pornography Use

Problematic pornography use involves loss of control, excessive use despite negative consequences, and impaired functioning (Antons et al., 2022; Bóthe et al., 2021). Treatment options include pharmacological, psychological, and neuromodulatory approaches, often combined and tailored to individual needs. However, small sample sizes and lack of standardization limit the consistency of findings (Sniewski et al., 2018). Digital and group-based interventions offer accessible treatment options.

Pharmacological Interventions

Pharmacological approaches target compulsive behaviors and cravings in PPU, primarily through μ -opioid receptor antagonists, such as naltrexone and nalmefene, which modulate reward system activity and reduce pornography use (Gola & Potenza, 2016; Kraus et al., 2015). Case reports have documented reduced viewing frequency with these agents (Capurso, 2017; Yazdi et al., 2020), and naltrexone has been found to be effective in managing CSBD (Savard et al., 2020).

SSRIs and SNRIs may also alleviate PPU symptoms, as serotonergic dysfunction is linked to impulsivity and compulsivity (Roza et al., 2024). Sertraline, alone or in combination with naltrexone,

has shown potential in reducing sexual urges and pornography use (Wainberg et al., 2006), although randomized trials remain scarce. These medications may also help manage co-occurring anxiety and depression (Roza et al., 2024).

Combination treatments, such as cognitive behavioral therapy (CBT) with naltrexone, have demonstrated further reduction in pornography use, suggesting that integrative approaches may enhance outcomes (Crosby & Twohig, 2016; Sharma et al., 2022). Overall, pharmacological interventions can help manage compulsive behaviors, but their effectiveness improves when combined with psychological therapy. Tailoring treatments to individual psychological and social factors is crucial for optimizing outcomes (Lewczuk et al., 2017).

Neuromodulation-Based Interventions

Emerging treatments include neuromodulatory approaches, though research remains limited. High-frequency repetitive transcranial magnetic stimulation has been associated with reductions in pornography cravings and anxiety (Cuppone et al., 2021). Similarly, combining transcranial direct current stimulation with acceptance and commitment therapy (ACT) has demonstrated stronger treatment effects (Seyedzadeh Dalooiyi, Sharbaaf, et al., 2023).

Psychological Interventions

Various psychological treatments have been developed to treat PPU, including CBT, ACT, and mindfulness-based interventions, all of which have shown promising outcomes (Bóthe et al., 2020; Minarcik, 2016). Despite the development of multiple approaches, only a few studies have systematically evaluated their effectiveness.

Cognitive behavioral therapy, through techniques such as psychoeducation, cognitive restructuring, exposure, and relapse prevention, has demonstrated efficacy in reducing pornography consumption and related compulsive behaviors (McGahan & Bridges, 2010; Minarcik, 2016; Ortega et al., 2020; Stark et al., 2024). In one study, CBT led to a 94% reduction in pornography use, along with significant decreases in hypersexual behavior and urges (Minarcik, 2016).

Acceptance and commitment therapy emphasizes the acceptance of distressing thoughts and engagement in value-driven actions. Interventions have resulted in notable decreases in pornography use and sexual compulsivity, both in therapist-led and self-help formats (Crosby & Twohig, 2016; Levin et al., 2017).

Mindfulness-based interventions have been effective in enhancing self-regulation and reducing pornography consumption. Studies using guided meditation and mindfulness relapse prevention protocols have shown significant improvements in PPU symptoms (Holas et al., 2020; Sniewski & Farvid, 2019; Sniewski et al., 2022). Likewise, cognitive analytic therapy has led to reduce their daily masturbation and improved mental health outcomes (Kellett et al., 2017).

Motivational Interviewing (MI) offers a non-judgmental environment for individuals to explore behaviors, promoting readiness to change. Integrating MI with CBT enhanced treatment outcomes, with reductions in compulsive pornography use and associated distress (Bricker & Tollison, 2011; Moyers, 2014).

Group interventions combining MI and CBT improved quality of life and reduced depressive symptoms, although effects on problematic internet use remained inconclusive (Bahner & Stenqvist, 2019; Bassett et al., 2022; Lundahl et al., 2010).

Integrative therapies combining cognitive, behavioral, and psychodynamic elements also yielded positive outcomes (Shorrock, 2012; Wéry et al., 2019). Psychodynamic therapy, along with family and couple therapy, addresses underlying shame and guilt, improves interpersonal relationships and reduces pornography reliance (De Alarcón et al., 2019; Ford et al., 2012; Kraus & Sweeney, 2019).

Group-Based Treatments and Self-Help Platforms

Group interventions offer support and psychoeducation, helping individuals cope with feelings of isolation and build social connections. Programs such as Recovering Couples Anonymous, Sex Addicts Anonymous, Sex and Love Addicts Anonymous, and Sexual Compulsives Anonymous follow 12-step models and have been used in PPU treatment, with participants reporting symptom improvements (Fernandez et al., 2021).

Non-governmental organizations have also developed self-help platforms to support individuals struggling with pornography use. In China, Reyboys aids adolescents facing pornography-related difficulties (Chen, 2022).

Web-Based Interventions

Digital interventions have been gaining traction. For instance, the Hands-off program, a 6-week online CBT, mindfulness, and MI-based intervention, resulted in reduced pornography consumption along with its negative consequences (Bóthe, Baumgartner, et al., 2020, 2021). Other self-help programs integrating motivational, mindfulness, and social psychology techniques demonstrated reductions in perceived addiction and pornography cravings (Bóthe et al., 2021). However, newer programs such as PornLoS have yet to undergo rigorous effectiveness studies (Stark et al., 2024). While these approaches hold potential, more research is needed to validate their long-term efficacy, as suppression-based strategies may be ineffective (Fraumeni-McBride, 2019).

A recent self-help intervention, imaginal retraining, which is based on approach bias modification, has also been explored as a low-threshold, web-based tool for PPU. Baumeister et al. (2024) found that, despite low adherence, participants who engaged regularly in retraining showed significant reductions in PPU, with high satisfaction reported. While these findings are preliminary, imaginal retraining offers the potential for individuals reluctant to seek formal treatment, warranting further study.

Web-based interventions offer accessible support for PPU, yet their impact relies on sustained engagement, highlighting the need for improved adherence and long-term evaluation.

Limitations of Existing Interventions

Previous intervention studies exhibited several limitations. First, the high attrition rate between pre-and post-test and follow-up assessments was an issue. It has been suggested to include romantic partners (i.e., couples) (Hatch et al., 2023) and broader measures assessing sexual well-being or other mental health

conditions to enhance adherence (Bóthe et al., 2021). Second, reliance on participants' self-reported data to determine the presence of PPU may limit the ability to accurately identify individuals with PPU symptoms. Therefore, using more objective measurements rather than relying solely on participants' subjective feelings regarding their pornography use behavior may increase the ability to capture PPU. This approach could facilitate reaching individuals who genuinely require intervention, potentially reducing dropout rates (Bóthe et al., 2021) and minimizing bias (Seyedzadeh Daloooyia et al., 2023). Third, the small sample size and predominance of male participants (84%) (Crosby & Twohig, 2016; López-Pinar et al., 2025; Seyedzadeh Daloooyia et al., 2023) may lead to less effective treatments for women, despite reports of PPU among women (Lewczuk et al., 2017). Fourth, excluding gender-diverse individuals by restricting options to male or female may limit understanding of treatment effectiveness in gender-diverse populations (Hatch et al., 2023).

Fifth, previous interventions were mostly conducted using CBT and ACT, suggesting the potential inclusion of additional behavioral therapy approaches/techniques focusing on reducing impulsive symptoms (Crosby & Twohig, 2016). Sixth, the absence of a control group in some studies may limit understanding of the causality and effectiveness of the intervention program (Hatch et al., 2023; Holas et al., 2020). Seventh, the use of short follow-up assessment durations or the complete omission of follow-up measurements (Holas et al., 2020) was noted, suggesting the inclusion of a longer duration for follow-up assessments. Lastly, conducting therapy sessions with a single therapist may adversely affect the efficiency of the intervention; therefore, using multiple therapists may increase the generalization of the therapy outcomes.

Protective and Preventive Interventions

Preventive strategies addressing pornography use and PPU focus on education, early intervention, and social awareness. Many young males report first encountering sexual content through pornography rather than formal education or parental guidance, contributing to distorted sexual beliefs and behaviors (Allen & Lavender-Stott, 2015). Family-based interventions that promote media literacy and open communication have been associated with healthier media habits and reduced behavioral risks (Fagan, 2009; Blaszczyński, 2016). Community-level programs, including school-based sexual education and digital literacy initiatives, support critical thinking and help mitigate negative influences of media exposure (Callak et al., 2024; Todorovic, Huisman, & Ostafin, 2024).

Porn literacy programs, which emphasize critical engagement with sexual media, have been implemented in various formats, including educator training, online modules for youth, and multi-session curricula for adolescents (Crabbe & Flood, 2021; Maas et al., 2022). Although randomized controlled trials are limited, such interventions have shown potential in shifting attitudes and behaviors, particularly when peer-supported (Rothman et al., 2020; Winarti et al., 2020). Additionally, harm reduction models that aim to minimize problematic outcomes rather than entirely eliminate their use are gaining relevance in public health strategies targeting pornography-related concerns (Rothman, 2021).

Current Issues and Challenges in Pornography Research

Conceptual Inconsistencies

One of the primary obstacles in pornography research is the lack of a standardized definition. Terms like “uncensored sexual content,” “sexual visual stimuli,” “erotica,” and “sexually explicit media” are used interchangeably, complicating research on pornography even further (Vaillancourt-Morel et al., 2019). The expansion of digital pornography and diversity in content have made it even more challenging to establish a clear and universally accepted definition (De Alarcón et al., 2019; Kohut et al., 2020).

This lack of conceptual clarity limits cross-study comparisons and weakens the consistency in the existing findings (Willoughby & Busby, 2016). While progress has been made in recent years, distinguishing between perceived addiction and actual PPU remains a challenge. Perceived addiction is subjectively reported as distress over pornography use, whereas PPU is measured through objective indicators, associated with frequency and dysregulation of use (Brand et al., 2019; Lewczuk et al., 2020). Developing reliable and valid assessment tools is essential for clarifying these distinctions (Lewczuk et al., 2020).

Social Desirability

Social desirability bias poses a significant challenge in research on PPU, as individuals often underreport their consumption due to moral, religious, or societal norms, particularly in highly religious populations (Rasmussen et al., 2018). Despite anonymity in surveys, the private and stigmatized nature of pornography contributes to frequent misreporting, which distorts prevalence estimates and limits accurate understanding of the phenomenon (King, 2022). While researchers are encouraged to use techniques such as anonymous surveys, indirect questioning, and neutral framing to mitigate this bias, its complete elimination remains difficult (Ried et al., 2022).

Sampling Bias

Sampling bias significantly limits the generalizability of findings in PPU research. Many studies rely on small, homogeneous, or convenience samples—often university students or online participants—which fail to reflect broader demographic variability (Bóthe et al., 2024). This issue is compounded by self-selected samples from online self-help communities such as NoFap or PornFree, where individuals often report more severe or morally conflicted experiences (Chasioti & Binnie, 2021). Platforms like MTurk further contribute to non-representative sampling, and a predominant focus on narrow age groups (e.g., adolescents or college students) neglects the wider population affected by PPU (Bóthe, Vaillancourt-Morel, et al., 2021; Esplin et al., 2020). To enhance validity and applicability, future research must adopt more inclusive sampling strategies encompassing diverse socioeconomic, age, and cultural groups (Bóthe et al., 2024; Chen et al., 2021).

Control Variables

Another key issue is the lack of appropriate control variables. Factors such as gender, age, relationship status, and sexual orientation significantly influence pornography use. Research indicates that men (Willis et al., 2022), LGBTQ individuals (Borgogna et al., 2022), and young adults (Solano et al., 2020)

report higher pornography consumption. Additionally, masturbation frequency is often overlooked as a control variable despite its close relationship with pornography use (Perry, 2020). Moreover, another issue is the design of the existing studies given that most PPU research relies on cross-sectional studies, which limits the ability to establish causal relationships. Therefore, longitudinal and experimental studies are needed to measure the long-term effects of pornography consumption (Grubbs & Kraus, 2021).

Ethical, Cultural, and Legal Constraints

Pornography research is hindered by ethical concerns, cultural stigmas, and legal restrictions. In some societies, pornography use is considered morally unacceptable, leading to participant reluctance and data collection challenges (Prochner, 2022). To address these concerns, ethical guidelines must ensure anonymity and confidentiality to encourage honest responses (Kang & Hwang, 2023). Non-judgmental and empathetic research environments (Sipes et al., 2022). Clear and accessible participant information, avoiding technical jargon.

Scarcity of Qualitative Studies

Furthermore, PPU research is predominantly quantitative, with underrepresented qualitative studies being underrepresented (Binnie & Reavey, 2020; Ince et al., 2023). This imbalance limits the understanding of PPU as a lived experience, making it difficult to capture the nuanced and subjective aspects of compulsive pornography use. More qualitative research is needed to explore the personal, relational, and contextual dimensions of PPU in depth.

Despite its increasing relevance, pornography research continues to face conceptual, methodological, ideological, and ethical challenges. Addressing these issues requires more precise definitions, improved sampling techniques, rigorous methodologies, and ethical sensitivity to ensure scientifically valid and socially relevant findings.

Conclusion

Problematic pornography use continues to be a complex and multidimensional phenomenon, situated at the intersection of behavioral addictions, impulse-control difficulties, and compulsive tendencies. Despite the variety of theoretical frameworks proposed in recent years, none has achieved broad scientific consensus. Likewise, a standardized diagnostic instrument that aligns directly with criteria for CSBD or with established ICD categories such as gambling and gaming disorders is still lacking. Existing scales provide useful insights but often measure dimensions of pornography use that do not map onto diagnostic systems, leaving a significant gap between assessment tools and clinical classification.

Methodological limitations also remain a major obstacle. Research is still dominated by convenience samples—typically university students or online self-selected participants—resulting in limited generalizability. This is especially problematic for national or cross-cultural prevalence studies. Understanding why some groups decline participation, and creating strategies to reach them, will be essential for building more representative datasets.

Evidence also highlights substantial heterogeneity in vulnerability. Traits such as impulsivity, insecure attachment, early exposure, and moral incongruence frequently emerge as risk factors, while social support, family functioning, and ethical or religious commitments often act as protective buffers. These findings point toward the importance of models that examine risk and resilience together, in cultural as well as developmental contexts.

The effects of PPU are similarly multifaceted. Excessive or dysregulated use has been associated with psychological distress, relational difficulties, sexual dysfunctions, and even aggressive attitudes. Yet these associations are rarely uniform; they are shaped by variables such as gender, sexual orientation, whether use is solitary or partnered, and cultural background. One critical gap is that most studies fail to account for the type of pornography consumed. Content characteristics—such as violent versus nonviolent material, amateur versus professional production, or fetish-focused versus romantic scenarios—likely exert distinct influences on sexual scripts, relational dynamics, and aggression. Systematically examining these dimensions will be vital to a fuller understanding of PPU.

Measurement challenges further complicate the field. Existing instruments differ widely in their theoretical basis, psychometric strength, and cultural validity. Moreover, the distinction between perceived addiction—often shaped by guilt or moral conflict—and clinically significant dysregulation remains blurred. Future work must prioritize the development of culturally adapted, psychometrically robust instruments that can reliably separate subjective distress from diagnosable impairment.

On the intervention side, CBT, ACT, mindfulness-based programs, pharmacological treatments, and emerging neuromodulation approaches have shown encouraging results. Online self-help platforms and group-based interventions are also gaining attention as accessible options. However, most available studies rely on small, male-dominated samples, short follow-up periods, and self-report measures, all of which limit their strength. Moreover, very few interventions involve couples, women, or gender-diverse individuals, leaving major gaps in applicability.

Limitations and Directions/Suggestions for Future Research

Looking ahead, several priorities emerge. Research should:

- Develop standardized diagnostic criteria and culturally sensitive measurement tools aligned with established psychiatric frameworks.
- Employ longitudinal and mixed-method designs to clarify causal pathways and capture lived experiences.
- Systematically investigate usage characteristics, including frequency, duration, and—crucially—the type of pornography consumed, as well as whether viewing is solitary or partnered.
- Explore reasons for non-participation to overcome sampling bias and strengthen representativeness in national and cross-cultural studies.
- Broaden intervention research to include diverse populations, integrate partners, and conduct longer follow-up assessments.

Current limitations and the future directions addressing those limitations are presented in Table 3.

Table 3.
Current Limitations and Future Directions

Area	Current Limitations	Future Directions
Conceptualization and classification	Competing models (addiction, impulse control, compulsive) without consensus; absence of diagnostic alignment	Develop standardized criteria; integrate theoretical models with ICD/DSM frameworks
Measurement	Existing scales lack diagnostic correspondence; variability in psychometric quality and cultural validity	Create culturally adapted, psychometrically robust instruments distinguishing perceived vs. clinical PPU
Sampling	Heavy reliance on convenience and online self-selected samples; underrepresentation of non-participants	Use nationally representative and cross-cultural samples; examine reasons for non-participation
Risk and protective factors	Impulsivity, insecure attachment, early exposure identified; protective roles of family/social support underexplored	Test integrative models of risk – resilience; conduct longitudinal cross-cultural analyses
Pornography content types	Most studies ignore the type of material consumed (violent vs. nonviolent, amateur vs. professional, fetish vs. romantic)	Systematically code and analyze content types; evaluate their differential effects on attitudes and relationships
Effects	Associations with mental health, relational functioning, aggression observed but causality unclear	Employ longitudinal and experimental designs; assess moderators (gender, orientation, usage context)
Treatment	Evidence for CBT, ACT, mindfulness, pharmacological, and neuromodulation approaches limited by small, male-dominated samples, and short follow-ups	Expand interventions to diverse populations, include couples/gender-diverse groups; use longer follow-up and controlled trials

Note: ACT = Acceptance and commitment therapy; CBT = Cognitive behavioral therapy; ICD = International Classification of Diseases; PPU = Problematic pornography use.

As a narrative review, this article has some inherent limitations. First, primarily peer-reviewed studies published in English were synthesized, which may have excluded relevant findings in other languages or in gray literature. Second, the review did not follow formal systematic protocols; therefore, the selection and interpretation of studies may reflect some degree of subjectivity. Third, given the rapid growth of publications on PPU, some of the most recent contributions may not have been included at the time of writing.

In addition, the literature itself is characterized by methodological weaknesses—most notably the predominance of convenience samples, reliance on self-report data, and the absence of standardized definitions and measurement instruments. These limitations are also reflected in the present synthesis. Finally, as a review, these conclusions cannot establish causality or assess intervention efficacy directly but only summarize the current evidence.

Future reviews should address these shortcomings by adopting systematic procedures, integrating studies from multiple languages and cultural contexts, and critically evaluating intervention trials using rigorous and diverse methodologies.

Advancing the science of PPU will require moving beyond ideological debates and building an empirically grounded, ethically responsible framework. Problematic pornography use can be situated within the wider context of digital sexual behaviors, mental health, and human development only through multidisciplinary collaboration.

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