





The dual effects of pornography addiction: a comprehensive review of its effects on psychological well-being, interpersonal relationships, and management strategies

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Abstract

Introduction: This paper explores the psychological and interpersonal consequences of pornography addiction and management strategies, highlighting its growing prevalence due to advancements in technology and internet accessibility. With an estimated 12% of the internet comprising pornographic material, individuals increasingly engage with such content, contributing to significant behavioral patterns.

Material and methods: We performed a traditional narrative review of articles published in the last 10 years, and some papers of particular interest were also included in the review.

Results: Pornography addiction is linked to emotional distress, mood disorders, and diminished emotional connection in personal relationships, often leading to social isolation. Additionally, it is associated with heightened sexual aggression and risky behaviors, affecting psychological well-being. The paper also acknowledges pornography's paradoxical role, whereby it may induce both anxiety and inspiration. It also emphasizes the need for structured treatment interventions to help individuals regain control, restore psychological balance, and build healthier coping strategies.

Conclusions: Examining these dual effects, the study aims to provide a comprehensive understanding of how pornography addiction impacts mental health and interpersonal dynamics.

Keywords: pornography; internet; sexual offenses; mental health; addiction; societal impact; sexual dysfunction
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Lay summary

This study examines the psychological and social effects of pornography addiction, driven by increased internet access. It highlights links to emotional distress, relationship challenges, mood disorders, and risky behaviors. While often harmful, pornography's complex influence can also evoke conflicting emotions like anxiety and inspiration. Promoting open conversations

about pornography use within relationships and providing accessible mental health support may help individuals manage problematic use and reduce its impact on emotional well-being and relationships.

Introduction

The term "pornography" is derived from the Greek word *pornographos*, which directly translates to "the writing of harlots". The term was first used to delineate the experiences and circumstances of a sex worker [1]. The progression from the earliest cave paintings to contemporary virtual content has been extensive

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and marked by controversy. Historically, pornography was seen as a social taboo, although this perception has now changed. This is partly because it is often discussed and debated publicly in a variety of settings and media, even in informal chats on mobile phones [2]. Engaging in internet pornography is a form of sexual behavior. It encompasses a range of sexual activities conducted online, such as viewing pornography, exchanging pornographic content, participating in sexual conversations, using sex webcams, seeking sexual partners, and engaging in sexual role-playing. Among these activities, watching pornography is the most widely practiced [3]. The amount of sexually explicit content consumed has increased over time, especially in locations where it is prohibited [4, 5]. The objective of this paper was to comprehensively explore the psychological and relational effects of pornography consumption and discuss emerging management strategies for problematic pornography use. This paper adopted a narrative review approach to synthesize the available literature on pornography, its mental health and interpersonal effects, and available intervention strategies. The major rationale for choosing a narrative review was to provide a broad thematic understanding of this topic rather than systematically aggregating data.

We selectively identified relevant research articles related to the major themes of psychological well-being, interpersonal relationships, and treatment interventions published over the last 10 years (Tab. 1). Adopting this

method allowed the authors to integrate diverse perspectives, note evolving debates, and suggest recommendations for future research avenues [6].

Pornography-related problems have been conceptualized in the literature using a variety of overlapping but distinct terms, such as pornography addiction, problematic pornography use (PPU), hypersexuality, and compulsive sexual behavior disorder (CSBD). These constructs have their roots in different theoretical frameworks and should not be conflated with one another. Problematic pornography use is considered to be a pattern of pornography use that is accompanied by subjective distress, perceived loss of control, or functional interference, without necessarily meeting the criteria for a diagnosis [7]. Hypersexuality is a more general construct that refers to high levels of sexual drive or behavior and does not in itself imply pathology. In contrast, CSBD, as defined by the ICD-11, is an impulse-control disorder and is defined as a persistent failure to control intense sexual impulses or behaviors that cause marked distress or impairment, regardless of moral disapproval [8].

Although the concept of pornography addiction has been widely adopted in clinical, lay, and some scientific literature, it remains controversial and has not been formally recognized as a diagnosis. Addiction-based models focus on the concepts of reward sensitivity, tolerance, and compulsive behavior, whereas other models may consider compulsivity, impulse dysregulation, or

Table 1. Empirical evidence for psychotherapeutic interventions addressing pornography-related problems

Intervention	Target population	Sample size	Study design	Pornography-specific evidence	Key findings	Key references
CBT	Individuals with PPU	n ≈ 20–125	RCTs; pilot trials; web-based interventions	Yes (direct)	Reduced use frequency; improved self-control; reduced distress	[78, 79, 81]
ACT	Individuals with PPU	n ≈ 30–70	Randomized and non-randomized trials	Yes (direct)	Improved psychological flexibility; reduced shame and avoidance	[80–82]
Mindfulness-based interventions	Individuals with CSBD or PPU	Small samples	Single-case studies; pilot trials	Partial	Reduced cravings; improved urge regulation	[93, 94]
Psychodynamic therapy	Individuals with hypersexuality/CSBD	Clinical samples	Case reports; theoretical analyses	No (indirect)	Improved insight into relational and emotional conflicts	[77, 84, 104]
Integrated CBT + ACT	CSBD and problematic sexual behaviors	Mixed samples	Conceptual models; clinical reports	Partial	Enhanced emotional regulation and relapse prevention	[86, 88]
Family/couple-based interventions	Couples with pornography-related distress	Small samples	Observational studies; clinical reports	Partial	Improved communication and reduced conflict	[42, 95, 101]

ACT — acceptance and commitment therapy; CBT — cognitive-behavioral therapy; CSBD — compulsive sexual behavior disorder; PPU — problematic pornography use; RCTs — randomized controlled trials

maladaptive coping. It is essential to note that high-frequency pornography use does not necessarily imply pathology in the absence of clear evidence of impairment, loss of control, or significant distress [7].

Statistics and trends in internet pornography consumption and industry

With 81 million hits daily, Pornhub stands as the world's largest provider of online pornography; despite the site's intended adult audience, 1.4 million children from the UK visited it in May 2015 [9]. Pizzol et al. [10] conducted a study that revealed that 78% of the high school students in their sample had consumed online pornography, with 8% doing so regularly. The internet pornography industry had an estimated value ranging from 1 to 97 billion USD. However, it is important to approach the higher revenue estimates with considerable caution, as they may not be entirely reliable. The industry generates revenue through subscriptions, advertising, and deceptive techniques used to trick website visitors [11]. Although there is a wide range of pornography accessible on the internet, from standard hardcore material to bizarre and sometimes illegal content, research suggests that 80% of sexual preferences revolve around a core set of 20 different desires, such as teen (18+), homosexual, oral, and anal [12]. Regarding gender disparities, males often frequent websites with highly objectified sexual material, whereas women prefer sites that provide at least some suggestion of romance or story [12]. Based on several studies on the frequency of pornography use, Hald [13] proposed that around 86–98% of males and 54–85% of women engage in pornography use. More recent research, such as the study by Rissel et al. [14], further substantiates these findings. However, these figures vary due to differences in the definitions of pornography across studies, as well as variations in frequency measures and the demographics of the populations under investigation. Regnerus et al. [15] examined individuals aged 18 to 39 years and measured the frequency of use over the previous week, finding that 46% of males and 16% of women had engaged in this behavior. Grubbs et al. [16] conducted a study using a sample that represented the whole United States population, finding that 69% of men and 33% of women acknowledged using pornography over the last year. Among males, 47% reported using it monthly, whereas 33% reported using it weekly. Among women, 16% reported using it monthly, and 8% reported using it weekly.

Material and methods

The study used a narrative (critical) review method to integrate the existing literature on pornography use and problematic pornography consumption, specifically with regard to psychological well-being, interpersonal relationships, and management approaches. The narrative review method was preferred for its ability to provide a broad, integrative, and theory-informed analysis of a diverse body of literature spanning the clinical, psychological, neuroscientific, and sociocultural levels of analysis, rather than a systematic or comprehensive aggregation of the evidence.

Literature search strategy

A structured but non-systematic search of the literature was conducted through several electronic databases, including PubMed, Scopus, PsycINFO, and Google Scholar. The search focused primarily on peer-reviewed articles published in the last 10 years (2014–2025). To provide conceptual completeness, a few seminal or highly cited earlier studies were also included if they were pivotal to the theoretical or empirical understanding of the literature.

Search terms

The search terms were combined in different ways and included: "pornography use", "problematic pornography use", "pornography addiction", "compulsive sexual behavior", "psychological effects", "mental health", "interpersonal relationships", "sexual dysfunction", "neurobiology", "treatment", "psychotherapy", "CBT", "ACT", and "family interventions". The reference lists of key articles were manually searched for other relevant publications.

The selection of studies for this review was based on their relevance to the major themes of the review, rather than on predefined inclusion or exclusion criteria. The major themes of the review were related to: a) psychological and neurobiological correlates of pornography use, b) interpersonal and relational consequences, c) conceptualization of problematic pornography use and compulsive sexual behavior, and (iv) psychotherapeutic and psychosocial intervention strategies.

Proliferation of online pornography: access, affordability, and anonymity

Pornography is widely available on the World Wide Web. Approximately 12% of the internet consists of pornography, amounting to over 24.6 million websites [17], or 156 billion gigabytes. Pornographic

searches account for around 25% of all online searches [18]. A 2019 report by Business Insider projected the total annual earnings of all pornographic websites to be close to 100 billion dollars globally [19]. Cooper [20] identifies three key factors, known as the Triple-A engine, that influence the widespread use of internet pornography: access, affordability, and anonymity. Prior to the inception of the World Wide Web in 1991, there were significant restrictions on the transmission of pornography over computer networks or through peer-to-peer file sharing. Printed materials and videos distributed the vast majority of pornography to the general population. Previously, obtaining pornography required an actual purchase from an adult shop or cinema, establishments that were often associated with a negative image and reputation. Since the advent of the World Wide Web and the subsequent proliferation of pornographic websites, consumption of pornography by the general population has increased significantly. The availability of pornography has further increased with the advent of smartphones, which provide access to the internet from any location worldwide [21]. Users can access most pornography on the internet for free, without needing to identify themselves or leave their homes.

Gender and sociocultural predictors of pornography use

Gender seems to be the strongest predictor of pornography use, with men significantly more likely to use it than women [22]. However, a 2006 study by Peter and Valkenburg [23] found that 50% of female adolescents reported consuming pornography in the previous 6 months, indicating an increase in pornography use among females. Research has shown an increase in online pornography use among women, particularly across different age groups. Specifically, women between the ages of 50 and 65 report accessing internet pornography at a rate of 4%, whereas women aged 18 to 34 report a higher percentage of 25% [24]. One proposition suggests that there are distinct patterns of pornography consumption based on gender. According to Månsson [25], women are more likely to watch pornography with a partner, whereas males, as stated by Seidman [26], prefer to watch it alone. Additional determinants that strongly indicate pornography use include heightened sexual drive, a greater number of sexual partners, and engaging in sexual activities at an early age [27]. Religious

affiliation and being in a committed romantic relationship are significant factors that strongly predict abstention from pornography use [27, 28].

Research indicates that Black males have a higher likelihood of consuming pornography compared with White men, and religious beliefs do not play a role in predicting non-use among Black men [29]. Social causes are responsible for these disparities. Men who have sex with men have a higher prevalence of pornography use than heterosexual individuals [30]. The desire of marginalized individuals to find a safe and confidential environment in which to explore their sexual desires is believed to drive the rise in pornography consumption among men who have sex with men. This is particularly relevant during the process of coming out and forming a sexual identity [31]. Pornography may also be a particular aspect of gay culture, or it may simply be the case that men watch more pornography than women, which explains its increasing use [31].

Multifaceted role of pornography: from sexual arousal to relationship dynamics

One of the primary reasons individuals use pornography is that it elicits sexual stimulation and excitement, sometimes accompanied by masturbation. Reid et al. [32] conducted research that revealed that 83% of men and 55% of women engaged in masturbation when consuming pornography [33]. Effective masturbation results in orgasm. During orgasm, brain regions involved in emotional processing decrease in activity, leading to a temporary trance-like condition that both males and females typically experience. Georgiadis et al. [34] accurately refer to this phenomenon as *la petite mort* (the little death) in French. Afterwards, the brain releases pleasure-related chemicals such as norepinephrine, dopamine, and serotonin [35]. The brain's reward circuits link these hormones to a desire for orgasm. Both negative and positive reinforcement relate to orgasm in behavioral terms. The positive reinforcement is clear and self-explanatory. However, the topic of negative reinforcement requires more examination. People may use artificial substances such as illicit drugs, activities such as exercise, or intentional biological processes such as orgasm to mitigate the impact of unpleasant emotions. Research has shown that negative emotions are indicative of the likelihood of engaging in online pornography [3]. Butler et al. [36] identified feelings of loneliness as a significant

predictor. Consuming explicit sexual material and masturbating may function as a means of diverting attention from challenging emotions. Although distraction may not be as potent as other techniques, there is still evidence suggesting its usefulness in diminishing unpleasant feelings [37]. According to operant learning theory, individuals are more likely to repeat this activity if it effectively reduces or eliminates an unpleasant experience, such as a negative mood [37].

The literature discusses various other purposes of pornography, including the exploration of sexuality [38] and its potential educational role [39]. Hesse and Pedersen [40] found that regular consumption of pornography leads to a better understanding of sexual anatomy, physiology, and behavior. However, beyond sexual stimulation, arousal, masturbation, and orgasm, one of the most frequently reported uses of pornography occurs within intimate partnerships. While men often use pornography more frequently than women, particularly when masturbating alone, 50% of both men and women admit to sometimes watching pornography with their partners [41]. Watching sexual content with a partner often serves as a first step before engaging in sexual activity. In addition, several sex and relationship therapists [42] support the idea of viewing pornography with a partner. They argue that watching pornography together fosters intimacy, whereas watching it alone may create a barrier between lovers. However, studies examining the effects of pornography on relationships have produced more diverse results. Individuals who engage in solitary pornography consumption have lower levels of relationship satisfaction than those who abstain from it or only engage in it with a spouse [41]. There is a lack of empirical evidence supporting the notion that watching pornography in isolation has a beneficial impact on relationship dynamics or men's perceptions of their spouses [41]. In contrast, research indicates that exposure to pornography tends to make men perceive their partners as less physically appealing. However, the same effect has not been observed among women exposed to pornography [43].

Both men and women report a wide range of reasons for viewing pornographic content [44]. Cooper et al. [44] identified two main reasons for pornography use in a group of men who acknowledged having online sexual problems. Initially, several participants used the internet to enhance their in-person sexual encounters. Furthermore, several participants resorted to using the internet as a replacement for physical

sexual encounters in real life. While the study focused only on men who reported experiencing sexual difficulties, the two identified behavioral patterns may also be applicable to other individuals. Presumably, the effects would differ, both on an individual level and on a romantic partner, depending on whether the purpose of pornography use was to improve a sexual connection with a partner or to substitute for a sexual relationship with a spouse. Some people, particularly women, consider pornography to be a regular part of their sexual activities [45]. They believe that it can enhance sexual experiences with a current partner by introducing novelty, facilitating communication about sexual desires, and increasing arousal during real-life sexual encounters [46]. Other individuals, particularly a larger number of men, consume pornography as a means of enhancing their sexual experiences, either on their own or as part of a broader personal sexual experience [45, 46]. Some individuals who use pornography have said that it may function as a diversion, a method of dealing with stress, and a means of learning about sex [44].

Problematic pornography use: compulsive sexual behavior, and psychosocial effects

Problematic pornography use can manifest on a continuum from non-pathological, high-frequency use to clinically significant CSBD. The ICD-11 clearly warns against diagnosing CSBD when distress is mainly due to incongruence with moral, cultural, or religious values, rather than dysregulation *per se* [8]. Empirical studies have found that self-perceived pornography addiction is often strongly linked to moral conflict and negative self-evaluation, even in the absence of objective signs of behavioral dyscontrol. Failure to make such a distinction may lead to the overpathologization of normal sexual behavior and the conflation of subjective moral distress with mental illness [16, 47].

In the interest of avoiding conceptual overgeneralization, the present review seeks to distinguish between pornography use related to moral incongruence, pornography use as a maladaptive coping mechanism, and CSBD as a condition of persistent loss of control and functional impairment. The reviewed evidence is considered in the context of these distinctions.

To understand problematic pornography use, we can look at behavioral addiction, which has six

main components [48]: salience (when an activity becomes the most important thing in someone's life), mood modification (using behavior to change one's emotional state), withdrawal (feeling bad when the behavior stops), tolerance (needing to engage in the behavior more often to achieve the same effects), relapse (going back to old behavior patterns after a period of abstinence), and conflict (negative consequences that occur because of the addictive behavior) [49]. Problematic pornography use is also associated with other addictive behaviors, namely hypersexuality, gambling, internet use, and gaming [50]. Problematic pornography consumption is associated with adverse effects, similar to those seen in other addictive behaviors. The International Classification of Diseases, 11th Revision [51] classifies problematic pornography use as a component of compulsive sexual behavior disorder under the category of impulse-control disorders. In recent years, there has been significant focus on researching this issue. Although not specifically included in the diagnosis, additional sexual behaviors that might be classified as compulsive sexual behavior may involve activities such as masturbation, telephone sex, cybersex, visiting strip clubs, and engaging in sexual acts with consenting adults [52].

Sexual behaviors may be classified into two distinct categories: individual-based, which can be performed without the need for a partner (e.g., masturbation), and partner-based, which require the participation of a partner (e.g., recurrent adultery) [53]. Efrati and Dannon [53] categorized problematic pornography use as an individual-centered sexual behavior. Furthermore, persons seeking therapy for hypersexuality often indicated problematic pornography use as their primary behavior [32]. Grubbs et al. [54] conducted research that demonstrated a correlation between problematic pornography consumption and the presence of general psychopathological symptoms. Additionally, Harper and Hodgins [55] linked it to impaired psychosocial functioning, which includes diminished life satisfaction and poorer interpersonal connections. Individuals who reported excessive and problematic pornography use frequently also reported elevated levels of hypersexuality and depression. Pornography use, particularly when perceived as problematic, has been consistently associated with higher levels of depression, anxiety, and emotional distress [56].

Pornography can serve different purposes for different people. For some groups that have been

traditionally disadvantaged (e.g., LGBTQIA individuals), pornography may act as a safer way to explore and form identity, find validation for sexual identities, and learn about sexuality in a climate in which they typically do not have access to the same type of information in their day-to-day lives. Pornography use is influenced by gender differences and expectations about sex that shape how individuals engage in and understand these behaviors. Men tend to report using pornography more often than women because of strong masculine norms related to sexual behavior and activity. On the other hand, strong feminine norms may discourage women from viewing pornography, which can cause them to downplay their pornography use due to shame or stigma associated with viewing it [57]. The meanings and experiences attached to pornography use vary depending on cultural norms, religious beliefs, and moral attitudes, which influence whether such use is deemed problematic or appropriate within a given population. These influences should be considered to develop an accurate understanding of differences across populations regarding how pornography use may lead either to subjective distress or to clinically relevant symptoms related to behavioral dysregulation as a result of moral dissonance [58].

Determinants of pornography use: individual, interpersonal, and social factors

A variety of circumstances, classified as individual, interpersonal, and societal factors, may influence pornography consumption. Individual characteristics that might influence a person's behavior and experiences include age, gender, religious beliefs, marital status, level of engagement in online activities, level of education, and the presence of depression and anxiety [59–62]. Interpersonal factors contributing to pornography use include familial discord, sexual discontentment, and diminished marital satisfaction [62, 63]. When considering social factors, it is important to note social desirability, culture, ethnicity, and loneliness [59, 63].

Specific demographics show a greater preference for pornography. Due to their increased use of the internet and social media platforms, along with heightened sexual curiosity, adolescents are considered a significant demographic in pornography consumption [64]. Moreover, gender has emerged as a reliable determinant of pornography use, with

a substantial majority of users being male, as shown by several research studies [15, 61]. From an evolutionary standpoint, this gender disparity may be explained by the proposition that men and women possess distinct short-term and long-term sexual strategies, with males generally displaying a higher propensity for short-term tactics. Buss and Schmitt [65] distinguish these strategies by a heightened inclination to participate in casual sexual encounters, less commitment to emotional relationships, and a greater number of sexual partners. Pornography might potentially affect individuals' personal and social lives in many ways [66].

The literature shows that pornography use within relationships can produce different outcomes, depending on how it is used and on the circumstances surrounding the relationship. When couples use pornography together, with mutual consent and the ability to discuss it openly, they often report better sexual communication, greater excitement during sexual activity, and a deeper level of connection. Conversely, pornography use alone or in secret (especially when partners do not agree about it) tends to lead to more conflict and dissatisfaction in the relationship. Based on these findings, it is clear that pornography use does not necessarily have to be harmful to a relationship; rather, its effects depend on the level of openness, consent from both partners, and the overall quality of the relationship [59].

Pornography's effect on the brain: addiction, neural response, and structural changes

Neuroimaging studies have identified associations between pornography use and differences in brain structure or functional connectivity, although it remains unclear whether these differences reflect preexisting vulnerabilities or consequences of repeated exposure.

Neuroimaging research has explored the neural correlates of pornography use, especially among those who report problems with control. The current evidence base is composed almost exclusively of cross-sectional fMRI and structural MRI studies, which seek to identify correlations rather than causal relationships.

Functional neuroimaging research has found that sexually explicit stimuli activate regions of the brain associated with reward processing, motivation, and salience, including the ventral striatum, amygdala,

and prefrontal cortex [67]. Some studies have found that individuals reporting problematic pornography use show increased activation of these regions in response to sexual stimuli. However, these patterns are not unique to addiction and may also be observed in individuals reporting high levels of sexual interest, novelty seeking, or reward seeking in general [68].

Structural neuroimaging research has found associations between pornography use and differences in gray matter volume or functional connectivity in reward-related areas [69]. These results do not indicate whether the neural differences are preexisting or post-use phenomena. Therefore, suggestions that pornography use "downregulates" brain structure or leads to neurodegenerative changes are not supported by the current literature.

Theoretical models of tolerance or escalation to increasingly novel material remain theoretical. The current neuroimaging literature does not support a necessary or universal progression, nor does it support models similar to substance-related tolerance.

However, interpretation of this literature is hindered by small and selective samples, the use of heterogeneous measures of pornography use, reliance on self-report, and a lack of replication. The current state of neuroscientific evidence suggests the involvement of reward and motivational pathways but does not offer conclusive support for an addiction-specific neurobiological model [70, 71]. Longitudinal and experimental research is needed to elucidate the mechanisms underlying this phenomenon.

Additionally, these individuals expressed a desire to consume more pornography when they were not already doing so, but paradoxically, they reported not deriving pleasure from the experience when they actually engaged in it. The difference between the states of "liking" and "wanting" aligns with theories of incentive motivation in addiction research [68]. Regular pornography use might potentially be associated with alterations in brain biology [72]. Magnetic resonance imaging findings have shown a negative correlation between the amount of gray matter in the right caudate of the striatum and self-reported pornography use. The left putamen showed functional activity, whereas the right caudate showed functional connectivity with the left dorsolateral prefrontal cortex, both of which exhibited a negative correlation. This indicates that regular exposure to pornography may be associated with underlying brain structural changes. Subsequently, the person may actively pursue a more potent external stimulus, which may

prompt a search for unconventional and more intense pornographic content. This behavior bears some resemblance to the tolerance and habituation effects often seen in addiction. Kühn and Gallinat [72] observed that the correlation between pornography use and the size and connectivity of gray matter in the brain could suggest a preexisting problem rather than being a result of regular pornography use.

Pornography and its links to sexual dysfunction

Frequent pornography use has been associated with erectile difficulties and reduced sexual desire in some samples, particularly among younger men, although causal mechanisms have not been conclusively established. The most commonly reported sexual dysfunctions in the general population are premature ejaculation, erectile dysfunction, decreased libido, and arousal dysfunction. Some research links greater consumption of pornographic material to symptoms such as prolonged masturbation, delayed ejaculation, elevated anxiety, and sexual dysfunction. Carvalheira et al. [73] conducted research to explore the effects of masturbation and pornography consumption on sexual desire in European heterosexual men experiencing decreased libido. The study's results revealed that over 50% of the individuals who experienced a significant decrease in sexual desire in the previous 6 months had engaged in pornography consumption at least once a week [66]. There is a link between regular pornography use and low levels of sexual desire [74].

Psychological and social consequences of pornography addiction

Most research has focused on the psychological impacts of pornography, including symptoms such as sadness, depression, reduced self-worth, and diminished appetite. Individuals with pornography addiction exhibit elevated rates of general anxiety, psychological distress, and reduced emotional attachment to family members [75, 76]. Most investigations have classified pornography addiction as a type of drug addiction. Several studies have indicated that common motivations for watching pornography include boredom, curiosity about new trends and behaviors, and the desire for sexual pleasure. These findings align with other articles suggesting that individuals use pornography as a means of achieving sexual

gratification during masturbation. Additionally, people recognize pornography consumption as a tool for mood management and stress relief. Increased pornography use has been associated with a range of emotional impacts, as shown in previous research. Several studies report a significant association between problematic pornography use and social isolation or loneliness, although the direction of this relationship remains unclear.

Additionally, some people use pornography to enhance sexual performance and heighten desire [5]. George et al. [76] conducted research that clearly links pornography addiction to significant psychological and sociofunctional impairment. Prolonged internet pornography use has a direct and proportionate correlation with the manifestation of maladaptive behavior. Research has linked pornography use to feelings of sexual dissatisfaction, which in turn may result in individuals seeking additional sexual partners and participating in paid sexual activities. de Alarcón et al. [75] often observed this phenomenon in unbalanced partnerships. Another factor contributing to the rise in pornography use may be the use of sexual activity as a coping method for symptoms of depression, feelings of isolation, and even fear of death. According to George et al. [75], those who often consume sexually explicit content tend to have a more permissive or favorable attitude toward it and feel that it may enhance their sexual experiences. Most research suggests that common social consequences include difficulties in forming close relationships with male friends, spending more time on websites, and facing difficulty self-regulating the use of pornographic sites. The social ramifications of pornography include social discomfort, impaired job focus, less familial engagement, and heightened incidences of online offenses, such as cyberstalking and pedophilia.

Application of different psychotherapeutic approaches to pornography addiction

Psychotherapy in treating pornography addiction

Pornography addiction is an evolving area of clinical research and practice, with various psychosocial and psychotherapeutic interventions showing promise. This review explores the application of different psychotherapeutic approaches to pornography addiction, focusing on cognitive-behavioral

therapy (CBT), acceptance and commitment therapy (ACT), and psychodynamic therapy. Each method addresses distinct aspects of addiction, ranging from behavioral and cognitive patterns to deep-seated emotional and relational issues [77].

Cognitive-behavioral therapy

Cognitive-behavioral therapy is a widely utilized approach for treating various forms of addiction, including pornography addiction [78]. Research has documented the effectiveness of CBT in treating pornography addiction. The principle that maladaptive thoughts and behaviors contribute to and maintain addiction forms the foundation of CBT. By identifying and altering these thought patterns and behaviors, CBT aims to reduce addictive behavior and improve overall functioning. CBT involves helping clients recognize and challenge distorted beliefs about pornography. These beliefs may include misconceptions, such as the idea that pornography is harmless, necessary for sexual satisfaction, or a normal part of sexual exploration. Through cognitive restructuring, clients develop healthier, more accurate perceptions of and attitudes toward pornography and sexuality. CBT addresses the behavioral aspects of addiction through techniques such as exposure therapy and behavioral activation.

Pornography use is often reported as a coping strategy in the context of stress, loneliness, or negative affect, suggesting a potentially bidirectional relationship between emotional distress and use. Exposure therapy involves gradually exposing clients to pornography-related triggers in a controlled manner, helping them develop coping strategies to manage urges without resorting to pornography. Behavioral activation focuses on increasing engagement in alternative, healthy activities that fulfill the emotional or psychological needs previously met by pornography. CBT includes training in skills such as emotional regulation, stress management, and interpersonal communication. These skills help clients manage the emotional and situational triggers that contribute to pornography use, thereby reducing reliance on pornography as a coping mechanism. Research demonstrates that CBT is effective in reducing problematic pornography use. Studies have shown that CBT leads to significant reductions in pornography consumption, improvements in mental health symptoms, and enhanced overall functioning [79].

Acceptance and commitment therapy

Acceptance and commitment therapy is a mindfulness-based therapeutic approach that emphasizes

accepting difficult thoughts and feelings rather than trying to control or avoid them. ACT encourages individuals to commit to actions that align with their core values, promoting psychological flexibility and an improved quality of life. ACT helps clients observe thoughts and feelings about pornography without judgment or avoidance. This mindfulness approach reduces the power of these thoughts and urges, enabling clients to respond to them in a more constructive manner [80]. Clients in ACT work to identify their core values and understand how pornography use conflicts with these values. By clarifying what is truly important to them, clients can focus on engaging in behaviors that align with their values, reducing reliance on pornography as a means of emotional or psychological fulfillment.

Acceptance and commitment therapy promotes setting and pursuing goals that are consistent with one's values. For individuals struggling with pornography addiction, this might involve goals related to building healthy relationships, pursuing personal growth, or developing new coping strategies. This focus on value-driven action helps clients shift away from pornography use toward more meaningful and fulfilling activities. ACT has shown promise in treating various forms of addiction, including problematic pornography use [81]. Research suggests that ACT can improve quality of life, reduce depressive symptoms, and help clients manage addiction by fostering acceptance and commitment to valued living. However, further research is required to confirm its effectiveness specifically in treating pornography addiction. ACT's emphasis on mindfulness and values-based action may not address all the underlying cognitive distortions or behavioral patterns associated with pornography addiction. Combining ACT with other therapeutic approaches may enhance its effectiveness [82].

Psychodynamic therapy

Psychodynamic therapy, rooted in Freudian theory, focuses on exploring unconscious processes and early life experiences that influence current behavior and emotional patterns [83]. This therapy aims to uncover and resolve internal conflicts, providing insight into how past experiences shape present difficulties [84]. Psychodynamic therapy explores unconscious desires and conflicts driving pornography addiction [85]. For instance, individuals may use pornography to cope with unresolved trauma, unmet emotional needs, or to escape internal conflicts. The therapy investigates how early relational experiences, such

as a lack of emotional support or trauma, contribute to current addictive behaviors. By addressing these early experiences, clients can work through underlying issues that manifest in their pornography use.

Psychodynamic therapy scrutinizes maladaptive relational patterns that pornography addiction may reflect. By understanding and altering these patterns, clients can work toward healthier interpersonal relationships and reduce reliance on pornography. Psychodynamic therapy provides valuable insights into the deep-seated psychological factors contributing to pornography addiction [84]. While empirical evidence specific to pornography addiction is limited, psychodynamic approaches have been effective in addressing complex emotional and relational issues in various forms of addiction. Psychodynamic therapy may require a longer duration to achieve results and might not be suitable for all individuals. The therapy's focus on unconscious processes may not address the immediate behavioral aspects of addiction as effectively as other approaches.

Integrating psychotherapeutic approaches

Given the multifaceted nature of pornography addiction, integrating various psychotherapeutic approaches can enhance treatment outcomes [86]. Combining CBT with mindfulness-based approaches such as ACT or incorporating psychodynamic insights can address both the cognitive-behavioral and emotional aspects of addiction. Integrating CBT's focus on cognitive restructuring and behavioral interventions with ACT's emphasis on mindfulness and values-based action can provide a comprehensive treatment approach. This combination can address both maladaptive thought patterns and emotional regulation, promoting a more holistic recovery. Adding psychodynamic elements to CBT or ACT can deepen the understanding of underlying emotional and relational issues contributing to pornography addiction. This integration can help address unresolved trauma or relational difficulties that might be driving the addiction [87, 88].

Mindfulness is a state that entails heightened awareness of the present-moment experience and an accepting attitude toward it [89]. According to research, mindfulness can reduce desire and increase self-efficacy by providing detachment from urges to use pornography. Research has found that mindfulness effectively reduces the desire to smoke [90], regulates various cravings [91], and mobilizes self-control [92]. Researchers have found that

mindfulness-based relapse prevention effectively reduces symptoms of compulsive sexual behavior disorder, including pornography viewing [93], and single-case studies suggest that mindfulness could be effective in treating problematic pornography use [94].

Family intervention in pornography addiction

The complex relationship between pornography use (PUI) and family functioning is likely bidirectional, with each influencing the other. Research indicates that PUI can lead to psychiatric symptoms, relationship disruptions, and conflict within the family, which may in turn perpetuate or exacerbate PUI [95, 96]. These dynamics suggest that PUI not only results from family issues but can also intensify them, creating a vicious cycle. Socioeconomic status (SES) may also be relevant in this association. Some studies suggest that lower SES is associated with higher pornography use, whereas family conflict and poorer family functioning are also linked to problematic pornography-related outcomes. However, evidence directly showing that SES exacerbates the effects of family dysfunction on PUI remains limited [97–99]. Leeman and Potenza [100] proposed a genetic or hereditary component to PUI, further complicating its etiology. These factors underscore the need for comprehensive research to clarify the causal relationships involved. In terms of prevention and intervention, family-based approaches grounded in Family Systems Theory (FST) may offer effective strategies.

FST emphasizes the importance of addressing the family unit as a whole rather than focusing solely on the individual. By engaging family members in interventions, the therapeutic process can address alienation, improve communication, and foster a supportive environment that reinforces positive behavioral changes. Family-based interventions may help individuals reduce online activities and engage more in offline, productive activities, thereby mitigating the effects of PUI [101]. Future research should explore these family-based intervention strategies using well-controlled designs to assess their efficacy in reducing PUI and improving family dynamics. Implementing these approaches could provide significant benefits, enhancing both individual and family well-being.

Promoting sex education in schools and colleges

A key strategy for mitigating the impact of pornography is enhancing sex education in schools and

colleges. Integrating comprehensive sex education into the curriculum is crucial to counteracting misconceptions about sexuality that may arise from exposure to pornography. Such education should address the potential health risks associated with pornographic content and encourage interventions that promote parental oversight of children's media consumption. It is important to reduce the extent to which adolescents view and emulate the sexual behaviors depicted in pornography as normative or acceptable [102, 103]. This approach aims to provide accurate information and foster healthier attitudes toward sexuality among youth.

Conclusions

In light of the current conceptual debate, this review takes a cautious and integrative stance. Although addiction-based neurobehavioral models could potentially provide some explanatory power for a particular subgroup of individuals with compulsive patterns of pornography use, the authors do not take the position that all frequent or problematic pornography use is necessarily addictive in nature. Rather, the authors propose that problematic pornography use should be viewed as a heterogeneous construct shaped by individual vulnerabilities, contextual considerations, moral beliefs, and regulatory ability. The narrative approach is necessarily prone to certain limitations, such as the risk of selection bias, non-reproducibility, and the application of the authors' interpretive judgment. The review does not aim to be complete or representative of the entire literature. These limitations are acknowledged to contextualize the findings and to inform future systematic or scoping reviews in this field. There are also several methodological issues that further limit the interpretation of this literature. Neuroimaging studies in this area tend to have small, highly selected samples, use heterogeneous and often nonstandardized measures of pornography use, and often rely on self-reported indicators of problematic behavior. Replication is also limited, and the findings are not always consistent across studies.

Synthesizing the available literature, a dual-effect framework appears to characterize pornography use, in that such use can yield both neutral and/or enriching outcomes; conversely, it can also be problematic, depending on the context in which it occurs. Overall, pornography's harmful potential is

heightened when it is used in contexts that involve secrecy, distress, loss of control, or impaired functioning; conversely, the opposite may be true when pornography is used in contexts characterized by communication and mutual agreement between partners and when its use is positively valued. Considering the context of use and the nature of the content helps create an accurate clinical picture and lays the foundation for relevant and proportional interventions.

The growing availability of pornography has led to an increase in both its consumption and the associated social, psychological, and sexual dysfunctions. Research indicates that a wide range of psychotherapeutic approaches, including CBT, ACT, and psychodynamic therapy, have shown promise in addressing pornography addiction. Family interventions, mindfulness-based strategies, and the integration of multiple therapeutic models can offer a comprehensive approach to treatment, helping individuals overcome addiction while fostering healthier personal and relational dynamics. As the understanding of pornography addiction evolves, combining these approaches is likely to result in more effective long-term recovery outcomes.

Article information and declarations

Author contributions

Conceptualization: FAP, AA, AUR. Literature search: FAP, AA, AUR. Literature collection: FAP, AUR, PS, LH. Analysis: FAP, AUR, PS, LH. Writing — original draft: FAP, AA, AUR. Writing — review and editing: FAP, AUR, VK. Final approval of the manuscript: all authors.

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Conflict of interest

The authors declare no conflict of interest.

Supplementary material

None.

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