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# Why do people watch pornography? The role of schema modes in problematic pornography use

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**ABSTRACT**

Problematic pornography use (PPU) has been the object of attention from clinicians and researchers due to its impact on relationships, mental health, and sexual satisfaction. More recent research has examined potential motivational factors underpinning online pornography use. However, no prior studies have investigated the role of schema modes in the motivation to watch pornography. The present study assessed the predictive ability of schema modes in online pornography use and investigated the difference between problematic and non-problematic pornography users. The study also examined the association between schema modes and the eight components of the Pornography Use Motivations Scale. A sample of 966 adults completed the Schema Mode Inventory, the Pornography Use Motivations Scale, and the Problematic Pornography Consumption Scale . The findings indicated that problematic pornography users scored higher than non-problematic pornography users across all schema modes, except the Happy Child and Healthy Adult modes. In addition, the findings indicated that schema modes explained approximately 41% of the variance in PPU across all participants. The Impulsive Child and Detached Self-Soother modes alone accounted for 37% of the variance in PPU. This study provides additional insights into the motivational factors underlying PPU, which can inform the development of formulations, clinical interventions, and policymaking.

## Introduction

Pornography use has become a prevalent aspect of modern society, facilitated by the widespread availability of internet-connected devices. A recent study (Bőthe et al., 2024) suggests that nearly 100 million adults may be addicted to pornography, amounting to about 3% of the global population, with implications for relationships and quality of life. Understanding the motivations underlying pornography use has become crucial to identifying its psychological, social, and behavioural implications and, consequently, to developing appropriate clinical interventions.

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Problematic pornography use (PPU) has gained increasing attention in the literature due to its potential negative impact on mental health, relationships, and overall well-being (Sutrisno & Saputra, 2025; Vieira & Griffiths, 2024). PPU is typically characterised by compulsive consumption patterns, where individuals feel unable to control their pornography use, even when it leads to adverse consequences (Duffy et al., 2016). It is often defined as a pattern of excessive and compulsive engagement with pornographic material, leading to adverse effects on daily functioning, relationships, and mental health (Bőthe et al., 2021). Unlike casual use, PPU is associated with loss of control, an increasing need for consumption over time, and an inability to stop despite efforts to do so (Grubbs et al., 2019). Individuals struggling with PPU may experience emotional distress, such as feelings of shame, guilt, and anxiety, which are compounded by the ongoing struggle to control their behaviour (Vieira et al., 2025).

The distinction between problematic and non-problematic pornography users can be complex and non-linear. Bőthe et al. (2018) developed the Problematic Pornography Consumption Scale, grounded in the components model of addiction (Griffiths, 2005), and found that problematic pornography users differ from non-problematic users by exhibiting higher levels of compulsion, conflict, and negative consequences (mood reduction, daily life impairment), rather than merely high frequency. Other differences include significantly higher craving, reduced control, and using pornography to escape stress. In line with this, a study conducted by Bőthe et al. (2020) suggests that frequency alone is not a reliable indicator of problematic pornography use because high-frequency users may not necessarily experience difficulties associated with pornography.

## *Motivation for watching online pornography*

A predominant motivation for pornography use is the search for sexual pleasure and arousal. Individuals may engage with pornographic material to reach immediate sexual gratification, whether as a solitary activity or as a precursor to partnered sexual activities. Bőthe et al. (2021) identified sexual pleasure as the most frequently recognised reason for pornography use across diverse populations.

Another important motivational factor for PPU is the desire to regulate distressing emotional experiences such as stress, anxiety, loneliness, and/or depression (Bőthe et al., 2021; Grubbs et al., 2019). In this context, pornography use serves as an immediate coping strategy, providing temporary relief from overwhelming feelings. However, engaging in pornography use as a coping mechanism often leads to the reinforcement of the behaviour, temporarily alleviating emotional discomfort. However, it does not address the roots of distress, which may constitute a risk factor for the development of PPU (Testa et al., 2024). Boredom and the pursuit of entertainment are additional factors influencing pornography use. Moynihan et al. (2022) suggest that individuals who are prone to boredom may use pornography as a strategy to escape feelings of meaninglessness. Alongside emotional regulation, avoidance of uncomfortable and painful emotions plays a significant role in PPU (Borgogna & McDermott, 2018). For many individuals, pornography offers an opportunity to temporarily escape from personal or relational problems, resulting in a short-lived sense of relief from the pressures of daily life (Cardoso et al., 2023). This can be particularly prevalent among individuals who struggle with anxiety, depression, or unresolved trauma (Turban et al., 2024).

Research has also indicated that individuals with low self-esteem or a negative self-concept may engage in pornography use to temporarily boost feelings of sexual self-worth (Gewirtz-Meydan et al., 2024; Koletić et al., 2021). However, long-term feelings of shame and guilt usually overshadow this short-term gratification. The use of pornography in this context may serve individuals' attempts at coping with insecurities, but it ultimately exacerbates their negative self-perception.

Shame has also been studied as a key motivational factor for PPU. Shame related to pornography use can lead to several behavioural consequences, such as concealing the behaviour, lying, and/or avoiding open discussions about consumption (Floyd et al., 2022). This secrecy compounds the psychological distress experienced by individuals with PPU, making it difficult for them to seek help or address their problematic behaviour. Moreover, because individuals internalise these feelings of shame, they may increasingly turn to pornography to cope with their negative self-image, reinforcing the compulsive component of the behaviour (Rafaeli et al., 2015).

In relation to particular differences between problematic and non-problematic pornography users, Csányi et al. (2025) examined different motivational pathways that differentiate these two groups. This study suggested that non-problematic users typically engage with pornography for neutral, recreational reasons such as stress relief or sexual arousal, and they maintain control over their consumption without significant emotional or social consequences. In contrast, problematic users often rely on pornography as a maladaptive coping mechanism to manage negative emotions such as loneliness or anxiety, leading to compulsive patterns and negative consequences for psychological well-being, relationships, and social functioning.

### Schema modes

Schema therapy (ST) is an evidence-based psychotherapeutic approach initially developed for individuals with personality disorders (Young et al., 2003). However, in recent years, its application has broadened to include a range of other clinical presentations (Bilge & Balaban, 2021; Cudo et al., 2020; Efrati et al., 2023), with recent studies focusing on the relationship between early maladaptive schemas and PPU (Vieira et al., 2025). The theoretical foundation of ST is built upon two central constructs: early maladaptive schemas and schema modes.

Early maladaptive schemas are maladaptive cognitive-emotional representations that often originate in childhood and incorporate thoughts, emotions, somatic sensations, and autobiographical memories (Vieira & Griffiths, 2024). These structures develop through the dynamic interaction between constitutional vulnerabilities (e.g. temperament) and adverse early environmental experiences, such as neglect, abuse, or inconsistent caregiving. Once formed, schemas become enduring cognitive frameworks that distort perceptions and interpretations of subsequent experiences, often persisting into adulthood (Young et al., 2003).

On the other hand, schema modes refer to transient, situationally activated states that arise from triggering one or more schemas, along with an associated coping strategy (Bär et al., 2023). In contrast to schemas, which are relatively stable structures, modes encompass momentary combinations of affect, cognition, and behaviour (Bär et al., 2023). They are defined as 'moment-to-moment emotional states that temporarily dominate

a person's thinking, feeling, and behaviour' (Keulen de Vos et al., 2016, p. 57). Table 1 outlines each mode domain and the respective schema mode.

### Schema modes and addictive behaviours

Addictive disorders pose significant challenges in clinical treatment due to various complex and interrelated factors, including the presence of cross-addiction (Sussman et al., 2011; Vieira et al., 2023) and the high comorbidity between addictive and personality disorders (Boog et al., 2018), which is associated with poorer treatment outcomes (Newton-Howes et al., 2017).

A further complexity in the treatment of addiction lies in its developmental origins. Both addictive behaviours and personality disorders have been associated with early adverse experiences, including trauma, neglect, and insecure attachment, which often contribute to long-standing difficulties with emotion regulation (Crowell et al., 2009).

### The Triple Mode Cycle

The Triple Mode Cycle (Lacy, 2024) is a framework developed within schema therapy to explain the psychological mechanisms underlying addictive behaviours. It highlights how addictive behaviours are often rooted in unmet needs and maladaptive coping strategies. The Triple Mode Cycle consists of three recurring schema modes – Vulnerable Child, Detached Self-Soother, and Punitive Parent – which interact with each other to perpetuate the addictive pattern. At the core of the cycle is the Vulnerable Child mode, representing the individual's unhealed emotional pain from childhood. In this mode, an individual may experience intense feelings of loneliness, abandonment, shame, or fear, often triggered by situations that repeat past neglect or trauma. These feelings are overwhelming and difficult to tolerate. Rather than expressing these emotions or having them soothed appropriately, individuals with a history of emotional neglect may lack the internal resources to manage them, which causes them to seek immediate relief (Farrell & Shaw, 2012; Lacy, 2024). Such immediate relief is managed by the activation of the Detached Self-Soother mode.

The Detached Self-Soother is a maladaptive coping mode used to manage or avoid the distress of the Vulnerable Child. In addition, this mode is often characterised by compulsive behaviours such as using substances, pornography, food, or gambling to numb or distract from emotional pain. While this mode temporarily alleviates discomfort, it does not address the underlying difficulties and, over time, can lead to further emotional and relational damage by perpetuating the cycle of addiction/compulsive behaviour (Lacy, 2024)

Following the addictive episode, the Punitive Parent mode is often activated. This internalised critical voice harshly condemns the individual for their actions, generating intense feelings of guilt, self-loathing, and shame. These messages frequently echo the voices of caregivers from early life who were critical, abusive, or emotionally unavailable. The inner critic invalidates the individual's pain and reinforces the belief that they are bad, broken, or unworthy (Bach et al., 2018; Lacy, 2024). This condemnation triggers the individual back into the Vulnerable Child state, consequently restarting the cycle.

The schema mode framework for understanding addictive behaviour can provide a conceptually robust and clinically relevant model for understanding PPU by framing it

**Table 1.** Mode domains and schema modes (Brockman et al., 2023, pp. 6–10).

| Mode Domains | Schema Modes | Features |
|---|---|---|
| Child Modes | Vulnerable Child | The Vulnerable Child mode is 'storehouse' of early maladaptive schemas, whereby the individual experiences the emotions linked to the schema activation and core unmet needs. The individual may feel lost, lonely, abandoned, hurt, ashamed, and anxious. This schema mode linked to core emotional pain. |
| | Angry Child | The Angry Child mode involves experiencing strong feelings of anger, frustration, and rage, due to the core emotional needs of the vulnerable child being unmet. Anger is often suppressed, only to be then inappropriately expressed in ways that include verbal outbursts and uncontrolled venting, without consideration of the consequences for themselves and others. |
| | Enraged Child | The Enraged Child mode is associated with extreme feelings of fury and rage, leading to destructive behaviours towards others/objects. The individual may scream, yell, and act in an uncontrolled way towards another. |
| | Impulsive Child | In the Impulsive Child mode, the individual responds to urges, impulses, craves, and immediate gratification, without consideration of medium and long-term impact on themselves and others. |
| | Undisciplined Child | The Undisciplined Child mode is related to difficulties in taking responsibility and completing routine tasks. The individual struggles with managing feelings of boredom and with achieving long-term goals. |
| | Happy Child | In the Happy Child mode, the individual feels happy, content, playful, and spontaneous, due to having their core emotional needs met. They feel valued, cared for, understood, motivated, and safe. They are also able to develop meaningful connections with others. |
| Coping Modes | Compliant Surrender | The Compliant Surrender mode is associated with compliant, passive, submissive, and people-pleasing behaviours, to avoid criticism or to gain acceptance/validation from others. The individual neglects their own wishes and feelings, prioritising the needs of others. |
| | Detached Protector | The Detached Protector mode relates to escapism from emotional pain through detachment, numbing, dissociation, and somatisation. Here, individuals may appear to cope with life problems in a healthy way, while remaining emotionally disconnected from others. |
| | Detached Self-Soother | In the Detached Self-Soother mode, the individual avoids core emotional pain through solitary activities designed to self-soothe, self-stimulate, or divert attention away from the overwhelming emotional experiences. These activities can include substance misuse, gambling, promiscuous sex, online shopping, and binge-eating. |
| | Self-Aggrandiser | In the Self-Aggrandiser mode, the individual seeks validation, admiration, status, and power, through acting in a grandiose, entitled or competitive way. They often criticise or diminish others in order to establish a controlling position in relationships. |
| | Bully and Attack | The Bully and Attack mode is associated with acts of intimidation and abuse (physical, sexual, emotional). These behaviours often occur in the context of the individual pre-empting abuse from others. |
| Parent Modes | Punitive Parent | The Punitive Parent mode is related to internalised critical messages from childhood and adolescence years. Here, the individual is prone to experience a re-enactment of previous experience of self-blame, criticism, and punishment. |
| | Demanding Parent | The Demanding Parent mode comprises internalised messages that pushes, pressures, and prioritises achievements and high standards over overall wellbeing. The individual often feels compelled to be perfect, time-efficient, and productive. |
| Healthy Mode | Healthy Adult | In Healthy Adult mode, the individual acknowledges the core emotional needs of the vulnerable child. This mode is related to compassion for oneself and others, assertiveness, and to appropriate and adaptive ways of managing schema activation. In this mode, individuals connect with others, work towards their life goals, and manage adult responsibilities. |

as a dynamic interplay of affective states and maladaptive coping strategies rather than focusing only on behavioural control or addiction mechanisms. Schema therapy's mode model may allow clinicians to understand pornography use as a function to regulate distress generated by a Vulnerable Child mode (e.g. shame, loneliness) or to maintain emotional distance via a Detached Protector mode, while subsequent shame and self-

criticism often reflect a Punitive Parent mode that perpetuates the cycle (Rafaeli et al., 2015; Young et al., 2003).

Empirical studies have documented associations between early maladaptive schemas and compulsive sexual behaviours more broadly, supporting the relevance of schema constructs to formulations of PPU (Efrati et al., 2021; Elmquist et al., 2016; Vieira et al., 2025). The mode model integrates cognitive, attachment, and emotion-regulation perspectives and offers a clinically useful basis for understanding the underlying motivation to engage in pornography use, as well as for developing interventions for problematic users that target underlying unmet needs and perpetuating patterns of behaviours (Derbyshire & Grant, 2015; Rafaeli et al., 2015).

## The present study

While previous studies (Bőthe et al., 2021; Grubbs et al., 2019) have examined potential motivating factors for online pornography use, and recent research (Motamed et al., 2025) looked at the mediating role of emotional regulation in the relationship between pornography use and schema modes, no prior studies have investigated the role of schema mode activation in the motivation to watch pornography. In the present study, the predictive ability of schema modes in online pornography use was examined, and the difference between problematic and non-problematic pornography users was investigated. The study also examined the association between schema modes and the eight components of the Pornography Use Motivations Scale. The Schema Mode Inventory (SMI: Young et al., 2007), the Pornography Use Motivations Scale (Koós et al., 2024), and the Problematic Pornography Consumption Scale (PPCS-18, Bőthe et al., 2018) were administered to an adult sample.

Building on the schema mode framework and the relationship between specific modes and their maladaptive coping strategies, it was hypothesised that specific schema modes would be associated with particular items on the Pornography Use Motivations Scale (PUMS). More specifically, it was hypothesised that the Detached Protector schema mode would be positively associated with the Lack of Sexual Satisfaction item on the PUMS ($H_1$), and that the Detached Self-Soother mode would be positively associated with Boredom Avoidance, Stress Reduction, and Emotional Distraction ($H_2$). In addition, taking into account previous research and the existing literature on the relationship between schema activation and PPU (including compulsive sexual behaviours) (Vieira et al., 2025), it was hypothesised that different schema modes would predict PPU. More specifically, linking this to the Triple Cycle Model and its understanding of the psychological mechanisms underlying addictive behaviours, it was hypothesised that higher scores on the Detached Self-Soother and Vulnerable Child schema modes would be most strongly predictive of PPU ($H_3$).

## Methods

### Participants and procedure

The participants in the present study comprised 1000 adults (69.9% male, 26.5% female) from the general population, representing different nationalities and ages between 18

and 67 years (mean age = 29.5 years, SD = 8.8). The following inclusion criteria were applied: (i) being aged 18 years or older, (ii) being online pornography users, (iii) being English speakers regardless of their country of residence, and (iv) providing their consent to participate. The data were collected using an online survey, which was completed voluntarily. Table 2 provides an overview of the sociodemographic information.

Participants were recruited online through social media platforms, including *Facebook* and *Reddit*, and no financial remuneration was provided. To maximise response and to include both problematic and non-problematic pornography users, a purposive sampling strategy was employed, and the study was advertised in general *subreddits*, including '*r/SampleSize*', '*r/Relationships*' and '*r/Research Studies*', as well as in specific *subreddits* such as '*r/PornAddiction*', '*r/Therapy*', '*r/Anxiety*', '*r/Addiction*'. In their study, Luong and Lomanowska (2022) suggested that '*r/SampleSize*' is a diverse and viable participant pool that can be used to recruit relatively large and diverse samples for research studies with minimal setup, labour, and cost. Regarding *Facebook,* the study was advertised in general research groups, including '*Research Participation*' and '*Find Participants for Thesis & Dissertation*'.

The study was advertised online with a flyer outlining the research aims. Upon clicking the online link, participants were immediately directed to an Information Sheet and Consent Form. After agreeing to participate via the Consent Form, participants were taken to the first part of the survey, where they completed questions regarding their socio-demographic information. They were then instructed to complete a short questionnaire on the frequency and intensity of their online pornography use, which was followed by the Schema Mode Inventory, the Pornography Use Motivations Scale, and the Problematic Pornography Consumption Scale.

To ensure quality control of the data and handle potential bots in the dataset, participants had to answer the question *'Have you watched pornography?'* and enter their age before being given access to the psychometric and demographic questions. Participants who answered '*No*' to the question and who entered a number below 18 years in the question relating to their age had the survey terminated and were unable to answer any more questions.

## Ethics

The confidential nature of the data collected in the study was highlighted to all participants in the information sheet, which also provided details of the procedures in place to protect this. All participants were allocated an identification number in the event of withdrawal of consent to participate. The study was conducted in accordance with the Declaration of Helsinki and was approved by the research team's university ethics committee.

## Measures

*Sociodemographic information and pornography use*: Sociodemographic data were collected, including the country of birth, age, gender, sexual orientation, education, occupation status, religion, and relationship status. Participants were also asked to indicate whether they had watched pornography, how often they watched pornography, the average duration of each viewing, and the devices used to access pornographic content (e.g. laptop, smartphone, tablet, etc.).

**Table 2.** Descriptive statistics for the sociodemographic variables (*N* = 1000).

| | | *N* | % |
|---|---|---|---|
| **Gender** | | | |
| | Male | 699 | 69.9 |
| | Female | 265 | 26.5 |
| | Non-Binary | 32 | 3.2 |
| | Agender | 1 | 0.1 |
| | Transgender | 3 | 0.3 |
| Total | | 1000 | 100 |
| **Age** | | | |
| | ≤25 years | 316 | 31.6 |
| | >25 years | 684 | 68.4 |
| Total | | 1000 | 100 |
| **Sexual Orientation** | | | |
| | Heterosexual | 656 | 65.6 |
| | Homosexual | 118 | 11.8 |
| | Bisexual | 211 | 21.1 |
| | Other | 15 | 1.5 |
| Total | | 1000 | 100 |
| **Education** | | | |
| | Less than secondary school | 26 | 2.6 |
| | Secondary school or equivalent | 308 | 30.8 |
| | Bachelor's degree | 425 | 42.5 |
| | Master's degree | 200 | 20.0 |
| | Doctoral degree | 41 | 4.1 |
| Total | | 1000 | 100 |
| **Ethnicity** | | | |
| | White | 667 | 66.7 |
| | Black, Caribbean, or African | 106 | 10.6 |
| | Asian | 127 | 12.7 |
| | Mixed or multiple ethnic groups | 68 | 6.8 |
| | Other | 32 | 3.2 |
| Total | | 1000 | 100 |
| **Country of birth** | | | |
| | UK | 161 | 16.1 |
| | USA | 514 | 51.4 |
| | Europe | 130 | 13.0 |
| | Asia | 103 | 10.3 |
| | Canada | 32 | 3.2 |
| | Africa | 17 | 1.7 |
| | Australia | 20 | 2.0 |
| | South America | 23 | 2.3 |
| Total | | 1000 | 100 |
| **Occupational Status** | | | |
| | Full-time employed | 446 | 44.6 |
| | Full-time student | 230 | 23.0 |
| | Part-time student | 43 | 4.3 |
| | Part-time student and employed | 81 | 8.1 |
| | Self-employed | 79 | 7.9 |
| | Unemployed | 83 | 8.3 |
| | Other | 38 | 3.8 |
| Total | | 1000 | 100 |
| **Religion** | | | |
| | No Religion | 521 | 52.1 |
| | Catholic | 83 | 8.3 |
| | Christian | 259 | 25.9 |
| | Buddhist | 41 | 4.1 |
| | Jewish | 15 | 1.5 |
| | Muslim | 35 | 3.5 |
| | Hindu | 40 | 4.0 |
| | Other | 6 | 0.6 |
| Total | | 1000 | 100 |
| **Relationship Status** | | | |
| | In a relationship | 263 | 26.3 |
| | Single | 509 | 50.9 |
| | Married | 221 | 22.1 |
| | Other | 7 | 0.7 |
| Total | | 1000 | 100 |

*Schema Modes*: The Schema Mode Inventory (SMI: Young et al., 2007) was used to assess schema modes. The scale consists of 124 selfreport items assessing 14 different schema modes. The SMI uses a Likert scale to indicate how much each item applies to an individual, from 1 (*never or almost never*) to 6 (*all of the time*). An average score of 4 or more on each mode is considered clinically relevant. SMI comprises six Child Schema Modes (Vulnerable Child, Angry Child, Enraged Child, Impulsive Child, Undisciplined Child, and Happy Child), five Coping Modes (Compliant Surrender, Bully and Attack, Detached Protector, Detached Self-Soother, and Self-Aggrandiser), two Parent Modes (Punitive Parent and Demanding Parent), and one Healthy Adult Mode. In the present study, the internal consistency of the subscales was excellent (Cronbach's alphas ranged from .964 to .965). This scale has demonstrated good validity and reliability in previous studies (e.g. Lobbestael et al., 2010).

*Problematic Pornography Consumption Scale* (PPCS: Bőthe et al., 2018): The PPCS was used to assess PPU over the past six months. The scale consists of 18 items and assesses the six core components based on the components model of addiction (Griffiths, 2005) and each component is assessed with three items: salience (e.g. *'I felt that porn is an important part of my life'*), conflict (e.g. *'I felt porn caused problems in my sexual life'*), mood modification (e.g. *'I used porn to restore the tranquillity of my feelings'*), relapse (e.g. *'I unsuccessfully tried to reduce the amount of porn I watch'*), tolerance (e.g. *'I felt that I had to watch more and more porn for satisfaction'*), and withdrawal (e.g. *'I missed porn greatly when I didn't watch it for a while'*). The items are rated on a seven-point scale from 1 (*never*) to 7 (*all the time*). Total scores range between 18 and 126, and higher scores indicate higher levels of PPU (PPU). A score of 76 or higher indicates a high risk of PPU. This threshold was used to create two distinct groups: non-problematic pornography users (NPPUs) and problematic pornography users (PPUs), with the latter group scoring 76 or higher on the PPCS scale. In the present study, the internal consistency of the subscales was excellent (Cronbach's alphas ranged from .95 to .96). This scale has demonstrated good reliability and validity in previous studies (e.g. Bőthe et al., 2024).

*Pornography Use Motivations Scale*: The Pornography Use Motivations Scale (PUMS; Bőthe et al., 2021), a 24-item scale, was used to assess motivation to watch pornography. The PUMS consists of eight subscales, with three items in each scale: (i) sexual pleasure (e.g. *'I watch porn to arouse myself sexually'*), (ii) sexual curiosity (e.g. *'I watch porn to learn new things'*), (iii) fantasy (e.g. *'I watch porn because I can be a part of things that I cannot experience in real life'*), (iv) boredom avoidance (e.g. *'I watch porn because I am bored'*), (5) lack of sexual satisfaction (e.g. *'I watch porn because my sexual life is not satisfying for me'*), (6) emotional distraction and suppression (e.g. *'I watch porn because it makes me forget my problems'*), (7) stress reduction (e.g. *'I watch porn because it is one of the best ways to relieve stress'*), and (8) self-exploration (e.g. *'I watch porn because I can find out what turns me on'*). Participants indicate how often they use pornography for each domain, on a scale of 1 (*never*) to 7 (*always*). In the present study, the internal consistency of the subscales was excellent (Cronbach's alphas ranged from .91 to .92). This scale has demonstrated good reliability and validity in previous studies (e.g. Bőthe et al., 2021).

### Statistical analysis

All data analysis was conducted using the Statistical Package for Social Sciences (SPSS for Mac, v.29). Descriptive data were examined for degree of normal distribution, using data distribution histograms, mean, mode and median, skewness and kurtosis values. Descriptive statistics were performed to provide an overview of the categorical data, such as gender, sexual orientation, religion, and occupational status. It was also used to report the number of participants who met the threshold for PPU and to report the online pornography habits of participants. To explore the relationship between schema modes and online pornography use, both among problematic and non-problematic pornography users, Spearman's correlation was used. Correlation analysis was also used to explore the relationship between schema modes and the Pornography Motivation Use Scale.

Multiple regression analysis was employed to assess the contribution of schema modes and the impact of gender, age, and sexual orientation in the model. In the first regression analysis, the starting point was a model in which schema modes were the only predictors of the dependent variable. This model was used in the total sample. In a second step, the age variable was added to the model, and it was explored whether being under the age of 25 years would impact the schema modes' predictability of PPU. In the third step, the gender variable was added to the model, and it was explored whether gender would impact the schema modes' predictability of PPU. In the fourth step, the sexual orientation variable was added to the model to assess whether it would have an impact on the schema mode's predictability of PPU. In the final step, the relationship status variable was added to the model to assess its impact on the schema mode's predictability of PPU. A standard stepwise regression analysis was then employed to identify the most influential predictors (schema modes) of PPU. Multicollinearity diagnostics using tolerance and variance inflation factor (VIF) were run, with VIF values ranging from 1.3 to 4.8, and tolerance values ranging from 0.2 to 0.8. These suggest weak multicollinearity among the predictors in the model (Kim, 2019). Diagnostic checks were carried out following all regression analyses to ensure that the assumptions of the regressions were tenable. All assumptions regarding linearity, normality, and constant variance were met.

## Results

### Descriptive statistics and preliminary analyses

Table 2 provides an overview of the descriptive statistics for the sociodemographic variables. The sample comprised 1000 adults (69.9% males, 26.5% females; mean age = 29.5 years, $SD = 8.8$), with the largest proportions being white (66.7%), single (50.9%), with no religion (52.1%), heterosexual (65.6%), from the U.S.A. (51.4%), with bachelor's degrees (42.5%), and currently full-time employed/self-employed (52.5%).

The results also indicated that of the 1000 participants, 96.6% had watched pornography and, therefore, met the criteria to progress with the survey (Table S1 in Supplementary Material). Of those 966 participants, 348 met the criteria for PPU (using the cut-off of $\geq 76$ on the PPCS). In terms of the differences between non-problematic pornography users (NPPUs) and problematic pornography users (PPUs) (Table 3), the descriptive statistics indicated that across the two groups, problematic pornography

**Table 3.** Descriptive statistics for problematic and non-problematic pornography users ($N = 966$).

| | | Non-Problematic Pornography Users | | Problematic Pornography Users | |
|---|---|---|---|---|---|
| | | N | % | N | % |
| **Gender** | | | | | |
| | Male | 383 | 62.0 | 299 | 85.9 |
| | Female | 204 | 33.0 | 45 | 12.9 |
| | Non-Binary | 28 | 4.5 | 4 | 1.1 |
| | Transgender | 3 | 0.5 | 0 | 0 |
| Total | | 618 | 100 | 348 | 100 |
| **Age** | | | | | |
| | ≤25 years old | 173 | 28.0 | 124 | 35.6 |
| | >25 years old | 445 | 72.0 | 224 | 64.4 |
| Total | | 618 | 100 | 348 | 100 |
| **Sexual Orientation** | | | | | |
| | Heterosexual | 360 | 58.3 | 279 | 80.2 |
| | Gay/Lesbian | 92 | 14.9 | 21 | 6.0 |
| | Bisexual | 155 | 25.1 | 46 | 13.2 |
| | Other | 11 | 1.7 | 2 | 0.6 |
| Total | | 618 | 100 | 348 | 100 |
| **Education** | | | | | |
| | Less than Secondary school | 18 | 2.9 | 8 | 2.3 |
| | Secondary School or Equivalent | 189 | 30.6 | 104 | 29.9 |
| | Bachelor's degree | 248 | 40.1 | 166 | 47.7 |
| | Master's degree | 131 | 21.2 | 65 | 18.7 |
| | Doctoral Degree | 32 | 5.2 | 5 | 1.4 |
| Total | | 618 | 100 | 348 | 100 |
| **Ethnicity** | | | | | |
| | White | 440 | 71.2 | 205 | 58.9 |
| | Black, Caribbean, or African | 49 | 7.9 | 53 | 15.2 |
| | Asian | 73 | 11.8 | 52 | 14.9 |
| | Mixed or multiple ethnic groups | 41 | 6.6 | 23 | 6.6 |
| | Other | 15 | 2.5 | 15 | 4.4 |
| Total | | 618 | 100 | 348 | 100 |
| **Country of birth** | | | | | |
| | UK | 109 | 17.6 | 48 | 13.8 |
| | USA | 324 | 52.4 | 170 | 48.9 |
| | India | 22 | 3.6 | 30 | 8.6 |
| | Other | 163 | 26.4 | 100 | 28.7 |
| Total | | 618 | 100 | 348 | 100 |
| **Occupational Status** | | | | | |
| | Full-time employed | 286 | 46.3 | 152 | 43.7 |
| | Full-time student | 132 | 21.4 | 85 | 24.4 |
| | Part-time student | 26 | 4.2 | 14 | 4.0 |
| | Part-time student and employed | 49 | 7.9 | 30 | 8.6 |
| | Self-employed | 48 | 7.8 | 29 | 8.3 |
| | Unemployed | 50 | 8.1 | 29 | 8.3 |
| | Other | 27 | 4.3 | 9 | 2.7 |
| Total | | 618 | 100 | 348 | 100 |
| **Religion** | | | | | |
| | No Religion | 371 | 60.0 | 134 | 38.5 |
| | Catholic | 42 | 6.8 | 37 | 10.6 |
| | Christian | 125 | 20.2 | 123 | 35.3 |
| | Buddhist | 33 | 5.3 | 8 | 2.3 |
| | Jewish | 11 | 1.8 | 3 | 0.9 |
| | Muslim | 17 | 2.8 | 17 | 4.9 |
| | Hindu | 16 | 2.6 | 24 | 6.9 |
| | Other | 3 | 0.5 | 2 | 0.6 |
| Total | | 618 | 100 | 348 | 100 |
| **Relationship Status** | | | | | |
| | In a relationship | 174 | 28.2 | 85 | 24.4 |
| | Single | 300 | 48.5 | 186 | 53.4 |
| | Married | 138 | 22.3 | 77 | 22.1 |
| | Other | 6 | 1.0 | 0 | 0 |
| Total | | 618 | 100 | 348 | 100 |

users in the total sample were more likely to be single, white, Christian, heterosexual, male, aged over 25 years, from the U.S.A., with a Bachelor's degree and in full-time employment.

### Descriptive analysis of pornography use

The results indicated that 96.6% of participants had watched pornography. With regard to pornography frequency, intensity, and activities (Table S2 in Supplementary Material), there were some differences between NPPUs and PPUs. In relation to the frequency of pornography use, 38% ($n = 235$) of NPPUs watched pornography two or more times a week, and 18% ($n = 111$) watched pornography once a day. Among PPUs, 40.2% ($n = 140$) watched pornography two or more times a day, 21% ($n = 73$) watched pornography once a day, and 26.1% ($n = 91$) watched pornography two or more times a week. Chi-square tests indicated a significant relationship between PPU and frequency of pornography use ($\chi^2$ [6, $N = 966$] = 116.01, $p < .001$), with PPUs consuming pornography significantly more frequently than NPPUs.

In terms of the intensity of pornography use, 37.5% ($n = 232$) of NPPUs watched, on average, 10–29 minutes of pornography in one session, and 29.6% ($n = 183$) watched, on average, 30–59 minutes in one session. These figures differed among PPUs. In this group, 39.1% ($n = 136$) watched, on average, 1–2 hours of pornography in one session, and 24.1% ($n = 84$) watched 30–59 minutes of pornography in one session. Moreover, 19% of the PPUs ($n = 66$) watched more than 2 hours of pornography in one session. Chi-square tests indicated a significant relationship between PPU and intensity of pornography use ($\chi^2$ [4, $N = 966$] = 176.18, $p < .001$), with PPUs consuming pornography for longer sessions than NPPUs.

Independent $t$-tests were conducted to compare the schema modes scores for PPUs and NPPUs. There were significant statistical differences between PPUs and NPPUs, with PPUs scoring higher than NPPUs on the following schema modes: Bully and Attack [$t$(576.5)=10.79, $p < .001$, Cohen's $d = 0.9$], Punitive Parent [$t$(657.7)=13.47, $p < .001$, Cohen's $d = 1.1$], Vulnerable Child [$t$(964)=12.91, $p < .001$, Cohen's $d = 1.2$], Demanding Parent [$t$(964)=9.38, $p < .001$, Cohen's $d = 0.9$], Compliant Surrender [$t$(964)=12.65, $p < .001$ Cohen's $d = 0.9$], Self-Aggrandiser [$t$(648.57)=10.66, $p < .001$, Cohen's $d = 0.9$], Impulsive Child [$t$(649.49)=15.52, $p < .001$, Cohen's $d = 0.9$], Undisciplined Child [$t$(964)=13.72, $p < .001$, Cohen's $d = 0.9$], Enraged Child [$t$(536.6)=9.54, $p < .001$, Cohen's $d = 1.0$], Angry Child [$t$(647.75)=11.18, $p < .001$, Cohen's $d = 0.9$], Detached Protector [$t$(964)=11.13, $p < .001$, Cohen's $d = 1.1$], and Detached Self-Soother [$t$(800.97)=14.00, $p < .001$, Cohen's $d = 1.0$].

### Group differences

Chi-square tests were conducted to examine the relationship between PPU and gender, sexual orientation, relationship status, and age (Table S3 in the Supplementary Material). There was a significant relationship between PPU and gender ($\chi^2$ [1, $N = 931$] = 50.89, $p < .01$, $phi = -0.24$), indicating that males were more likely to meet the criteria for PPU than females. The relationship between PPU and age was significant ($\chi^2$ [1, $N = 966$] =5.75, $p = .02$, $phi = -0.08$). Participants over 25 years old were more likely to engage in PPU than

those who were 25 years or under. There was also a significant relationship between PPU and sexual orientation ($\chi^2$ [1, $N = 966$] $=46.80$, $p < 0.01$, $phi = 0.22$), with heterosexual participants more likely to engage in PPU than their non-heterosexual counterparts. There was no relationship between relationship status and PPU.

## Correlation analyses

Spearman's non-parametric correlation analyses were undertaken for the schema modes and the domains of the Pornography Use Motivations Scale for PPUs and NPPUs (Table S4 and S5 in the Supplementary Material). In addition, Spearman's non-parametric correlation analyses were run for the 14 schema modes and the total score on the Problematic Pornography Consumption Scale. The results for NPPUs and PPUs are shown in Tables 4 and 5, respectively. For NPPUs, all schema modes were positively correlated with the PPCS, with the exception of Healthy Adult ($r$[618] = −.20, $p < .01$) and Happy Child ($r$[618] = −.09, $p < .05$). The strongest correlated schema modes were Impulsive Child ($r$[618] = .45, $p < .01$), Bully and Attack ($r$[618] = .44, $p < .01$), Enraged Child ($r$[618] = .43, $p < .01$),], and Self-Aggrandiser ($r$[618]= .38, $p < .01$).

In relation to PPUs, all schema modes positively correlated with the PPCS except the Happy Child. The strongest correlated modes were Detached Self-Soother ($r$[348]=.30, $p < .01$), Impulsive Child ($r$[348] =.28, $p < .01$), Undisciplined Child ($r$[348] =.28, $p < .01$), Vulnerable Child ($r$[348] =.26, $p < .01$), Compliant Surrender ($r$[348] =.25, $p < .01$), Detached Protector ($r$[348] =.23, $p < .01$), Punitive Parent ($r$[348] =.21, $p < .01$), Demanding Parent ($r$[348] =.20, $p < .01$), and Self-Aggrandiser ($r$[348] =.20, $p < .01$).

## Regression analysis for predicting problematic pornography use

### Schema modes and problematic pornography use

Multiple regression analysis was conducted to evaluate the extent to which schema modes would predict PPU among all participants (see Table 6). The findings were significant ($F$[14,951] = 48.7, $p < .001$)]. The $R^2$ was .41, indicating that schema modes explained approximately 41% of the variance in PPU among all participants. Table S6 (in the Supplementary Material) provides information about regression coefficients for the predictor variables entered into the model. Bully and Attack, Impulsive Child, Undisciplined Child, Angry Child, and Detached Self-Soother were significant predictors of PPU. The remaining modes were non-significant. A stepwise regression analysis also indicated that the Impulsive Child mode alone accounted for 32% of the variance in PPU. When combined with the Detached Self Soother, the percentage rose to 37% (Tables S7–S8 in the Supplementary Material)

## The role of age, gender, sexual orientation, and relationship status

A set of analyses attempted to provide further insights into the relationship between the variables examined, particularly the role of age, gender, sexual orientation, and relationship status in the relationship between schema modes and PPU. Age was dichotomously coded as 0 = under 25 years old, 1 = 25 years old or older, whereas gender was coded as 0 = male, 1 = female. In relation to sexual orientation, the variable was coded as 0 = non-

**Table 4.** Correlation analysis on the relationship between schema modes and the Problematic Pornography Consumption Scale (PPCS) among non-problematic pornography users (N = 618).

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 PPCS Total | | | | | | | | | | | | | | | |
| 2 Bully Attack | .44** | | | | | | | | | | | | | | |
| 3 Happy Child | -.09* | -.17** | | | | | | | | | | | | | |
| 4 Punitive Parent | .33** | .37** | -.48** | | | | | | | | | | | | |
| 5 Vulnerable Child | .23** | .28** | -.65** | .72** | | | | | | | | | | | |
| 6 Demanding Parent | .12** | .19** | 0.04 | .30** | .26** | | | | | | | | | | |
| 7 Compliant Surrender | .14** | 0.07 | -.17** | .48** | .46** | .32** | | | | | | | | | |
| 8 Self-Aggrandiser | .38** | .73** | -0.04 | .33** | .24** | .40** | .14** | | | | | | | | |
| 9 Impulsive Child | .45** | .54** | -.14** | .56** | .43** | .15** | .32** | .52** | | | | | | | |
| 10 Undisciplined Child | .27** | .18** | -.25** | .43** | .50** | 0.05 | .39** | .22** | .52** | | | | | | |
| 11 Enraged Child | .43** | .65** | -.29** | .49** | .37** | 0.05 | .14** | .50** | .62** | .27** | | | | | |
| 12 Healthy Adult | -.20** | -.16** | .64** | -.50** | -.43** | .27** | -.21** | 0 | -.35** | -.32** | -.42** | | | | |
| 13 Angry Child | .31** | .61** | -.42** | .57** | .59** | .32** | .28** | .53** | .52** | .35** | .64** | -.28** | | | |
| 14 Detached Protector | .24** | .39** | -.60** | .58** | .74** | .13** | .36** | .31** | .40** | .47** | .37** | -.37** | .51** | | |
| 15 Detached Self-Soother | .23** | .19** | -.18** | .43** | .41** | .42** | .31** | .25** | .35** | .29** | .22** | -.11** | .34** | .30** | |

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

**Table 5.** Correlation analysis on the relationship between schema modes and the Problematic Pornography Consumption Scale (PPCS) among problematic pornography users (N = 348).

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 PPCS Total | | | | | | | | | | | | | | | |
| 2 Bully Attack | .14** | | | | | | | | | | | | | | |
| 3 Happy Child | 0.02 | .33** | | | | | | | | | | | | | |
| 4 Punitive Parent | .21** | .42** | −0.07 | | | | | | | | | | | | |
| 5 Vulnerable Child | .26** | .23** | −.40** | .65** | | | | | | | | | | | |
| 6 Demanding Parent | .20** | .29** | .28** | .31** | .21** | | | | | | | | | | |
| 7 Compliant Surrender | .25** | .18** | −0.02 | .52** | .57** | .40** | | | | | | | | | |
| 8 Self-Aggrandiser | .20** | .77** | .40** | .30** | .18** | .50** | .22** | | | | | | | | |
| 9 Impulsive Child | .28** | .53** | .21** | .53** | .41** | .24** | .45** | .52** | | | | | | | |
| 10 Undisciplined Child | .28** | .26** | −0.05 | .44** | .56** | 0.08 | .43** | .24** | .53** | | | | | | |
| 11 Enraged Child | .12* | .73** | .20** | .52** | .28** | .22** | .25** | .57** | .64** | .33** | | | | | |
| 12 Healthy Adult | .11* | .22** | .66** | −.15** | −.26** | .43** | −0.01 | .40** | 0.04 | −0.09 | 0.02 | | | | |
| 13 Angry Child | .19** | .67** | 0.06 | .56** | .49** | .38** | .39** | .60** | .62** | .43** | .74** | 0.07 | | | |
| 14 Detached Protector | .23** | .44** | −.25** | .62** | .72** | .15** | .47** | .30** | .47** | .59** | .47** | −.18** | .60** | | |
| 15 Detached Self-Soother | .30** | .30** | .11* | .29** | .34** | .45** | .31** | .40** | .31** | .26** | .27** | .21** | .43** | .35** | |

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

**Table 6.** Multiple regression analysis of schema modes on problematic pornography use ($N = 966$).

Model Summary[b]

| | | | | | Change Statistics | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Model | R | $R^2$ | Adjusted $R^2$ | Std. Error of the Estimate | $R^2$ Change | F Change | df1 | df2 | Sig. F Change | Durbin-Watson |
| 1 | .646[a] | .418 | .409 | 22.2765 | .418 | 48.699 | 14 | 951 | <.001 | 1.93 |

a. Predictors: (Constant), Detached Self-Soother, Healthy Adult, Enraged Child, Compliant Surrender, Undisciplined Child, Demanding Parent, Happy Child, Self-Aggrandiser, Detached Protector, Punitive Parent, Impulsive Child, Angry Child, Bully Attack, Vulnerable Child
b. Dependent Variable: Total PPCS

heterosexual and 1 = heterosexual, whereas the variable relationship status was coded as 0 = single and 1 = in a relationship (including married). The results (Tables S9 to S16 in the Supplementary material) indicated that age and relationship status variables did not have a direct impact on the relationship between schema modes and PPU, only explaining 0.2% ($p = .07$) and 0.3% ($p = .05$) of the variance, respectively. However, sexual orientation and gender were statistically significant ($p < .001$), explaining respectively 5% and 7% of the variance in the relationship between schema modes and PPU.

## Discussion

The present study explored the relationship between schema modes and PPU, examining differences between problematic users (PPUs) and non-problematic pornography users (NPPUs), among an initial sample of 1000 adults. The study also examined the association between schema modes and the eight components of the Pornography Use Motivations Scale.

The results indicated that out of 1000 participants, 966 (96.6%) watched pornography and therefore completed the survey. Of the 966 pornography users, 348 met the criteria for PPU, constituting 34.8% of the total sample, and 36% of those who had watched pornography. Men were overly represented among the PPUs, which is supported by the literature (Harper & Hodgins, 2016).

A recent study estimated the prevalence of PPU (Bőthe et al., 2024) and found that PPU risk was estimated to be 3.2%-16.6% among the general population in 42 countries. This suggests an over-representation of individuals who engaged in PPU in the present study. Such a high prevalence is likely explained by the study's recruitment method. Participants were recruited online through social media platforms, including *Facebook* and *Reddit*, using not only general *subreddits* such as 'r/SampleSize'",r/Relationships" and 'r/ DissertationSupport', but also specific subreddits such as 'r/PornAddiction', 'r/PornFree', 'r/ PornRelapsed', 'r/Addiction', which likely have an overrepresentation of individuals who engage in PPU.

No previous research has examined the role of schema mode activation in the motivation to watch pornography. However, Vieira et al. (2025) examined the predictive abilities of early maladaptive schemas in online pornography use and found that schema activation explained approximately 26% of the variance in PPU among a sample of 969 individuals who had watched pornography. In addition, other authors who have analysed key motivational factors for problematic

pornography use (Bőthe et al., 2021; Grubbs et al., 2019; Moynihan et al., 2022; Testa et al., 2024) found that pornography can serve as an immediate coping strategy to regulate distressing negative emotional experiences (e.g. anxiety, stress, loneliness, shame, and boredom), to escape from interpersonal difficulties, and to achieve relief from the pressures of daily life. Lastly, recent research (Motamed et al., 2025) examined the mediating role of emotional regulation in the relationship between schema modes and problematic pornography use, with the findings suggesting that emotional regulation does not mediate the association between these two variables.

It was hypothesised that specific schema modes would be associated with particular items in the Pornography Use Motivations Scale. More specifically, it was hypothesised that the Detached Protector schema mode would be positively associated with the item Lack of Sexual Satisfaction ($H_1$), and that the Detached Self-Soother mode would be positively associated with Boredom Avoidance, Stress Reduction, and Emotional Distraction ($H_2$). The findings largely supported these two hypotheses. Both the Detached Self-Soother and Detached Protector modes are frequently associated with boredom avoidance and stress reduction through disengaged or escapist behaviours (Brockman et al., 2023). Individuals who resort to these modes often attempt to alleviate boredom or emotional discomfort by seeking external distractions or numbing strategies (Lacy, 2024). According to Kühn and Gallinat (2014), individuals may use pornography to relieve feelings of anxiety or depression, essentially using it as an emotional escape. This suggests that individuals who are in a Detached Self-Soothing mode may turn to pornography to avoid confronting negative emotions, reinforcing the cycle of emotional avoidance. However, such a pattern of avoidance can exacerbate feelings of boredom and anxiety in the long run, creating a cycle of emotional numbing and detachment (Giesen-Bloo et al., 2006).

In addition, the results indicated that the Healthy Adult mode was positively associated with Sexual Pleasure among both NPPUs and PPUs and negatively associated with Boredom Avoidance and Emotional Distraction in both groups. In the context of intimate relationships, the Healthy Adult mode plays a crucial role in fostering sexual pleasure and emotional intimacy. This mode is related to self-awareness, emotional regulation, and the ability to navigate interpersonal relationships in a mature and adaptive way (Young et al., 2003). Van Vreeswijk et al. (2015) suggested that individuals who engage their Healthy Adult mode in relationships tend to report higher levels of sexual satisfaction and emotional connection. This mode allows individuals to avoid the impulsivity or emotional reactivity that may otherwise interfere with pleasurable, consensual sexual experiences (Arntz, 2012). In contrast, individuals who are less connected to their Healthy Adult schema mode may struggle with boredom avoidance and emotional distraction, which can negatively impact their well-being and intimate relationships.

It was hypothesised that different schema modes would predict PPU, assessed by the PPCS. More specifically, it was hypothesised that the Detached Self-Soother and the Vulnerable Child would be most strongly predictive of PPU ($H_3$). Multiple regression analysis confirmed these hypotheses, indicating that schema modes explained approximately 41% of the variance in PPU among all participants. More specifically, standard stepwise regression analysis showed that Impulsive Child, Detached Self-Soother, Bully and Attack, Undisciplined Child, Compliant Surrender, Angry Child, and Vulnerable Child

were the strongest schema modes, accounting for 41% of the variance in PPU. The Impulsive Child and Detached Self-Soother modes alone accounted for 37% of the variance in PPU.

These findings are in line with previous literature, particularly with the role of impulsivity and detached self-soothing behaviours on PPU. Akbari et al. (2024) showed that individuals with anxious attachment styles were more likely to engage in pornography use as a way of managing difficult feelings associated with intimacy, such as rejection. They may use pornography as a way to maintain emotional distance and avoid the anxiety that comes with forming close relationships. A narrative review conducted by Testa et al. (2024) suggested that individuals who reported higher levels of emotional dysregulation and difficulty managing distress were more vulnerable to engaging more in PPU. The findings indicated that individuals who are in detached self-soothing emotional states might be more prone to using pornography as a means to manage emotional pain, developing a maladaptive coping pattern.

With regards to the Impulsive Child mode, Bocci Benucci et al. (2024) proposed that pornography use can be conceptualised as a form of instant gratification that temporarily distracts from emotional pain, stress, or dissatisfaction, with impulsivity being a factor associated with PPU. This may be more evident among individuals who engage in PPU relative to non-problematic users, which is marked by a pattern of behaviour which reflects a failure in regulating impulses and managing distress in a healthy and adaptive way.

Previous research also indicated that individuals who engaged in PPU often report higher rates of emotional neglect and insecure attachment (Wéry & Billieux, 2017), which is consistent with the developmental antecedents of the Vulnerable Child mode. In addition, the Compliant Surrender mode, which often involves submission to others' needs while individuals neglect their own in order to avoid conflict or rejection (Young et al., 2003), is typically rooted in early experiences of conditional acceptance or authoritarian parenting. In the context of PPU, this surrendering pattern may manifest as internalised guilt or shame among individuals over their sexual desires, which heightens the compulsion towards pornography due to emotional suppression (Sniewski & Farvid, 2020). On the other hand, the Undisciplined Child mode is characterised by impulsivity, frustration intolerance, and resistance to limits (Young et al., 2003). This mode emerges from inadequate boundary setting in early life, leading to difficulty in delaying gratification or managing urges. Previous research has indicated that impulsivity and difficulties in delaying immediate gratification are core components of behavioural addictions, including PPU (Kraus et al., 2016).

The main surprise in these findings was the role of the Bully and Attack mode as a predictor of PPU. Although there have not been any previous studies specifically examining the relationship between this schema mode (characterised by an internal state where an individual adopts a hostile, aggressive, or punitive stance towards themselves or others) and PPU, a meta-analysis conducted by Wright et al. (2016) suggested that pornography use among men was positively correlated with men's sexual aggression, including sexual harassment and the use of force to attain sex. Therefore, the aggression often related to this schema mode could be manifested and processed

through the use of pornography, particularly if the pornography use is marked by themes of domination or aggression.

By conceptualising schema modes and understanding the underlying motivational factors for PPU, individuals can gain a deeper understanding of their internal world and develop healthy, adaptive coping strategies. These strategies may also enable them to tolerate difficult emotional experiences and manage vulnerability, as well as cultivate and maintain significant relationships with others.

### *Strengths and limitations*

Although previous research (Vieira et al., 2025) examined the relationship between early maladaptive schemas and PPU, the present study is the first to examine the relationship between schema modes and PPU, focusing in depth on the motivational factors under-lying pornography use within a schema therapy framework. Out of 1000 participants, only 34 participants were excluded from the study due to answering 'no' to the question *'Have you watched pornography?'*, leading to a total sample of 966 participants. In addition, the present study also included a good sample size of individuals who met the criteria for PPU ($n$ = 348), allowing for meaningful and powerful statistical analyses between variables.

Despite these strengths, the present study is not without limitations. Despite the good sample size, the demographics were not very diverse. A significant proportion of the sample was male (69.9%), heterosexual (65.6%) and white (66.7%). This might be due to most of the sample being represented by US participants (51%) recruited on *Reddit*, not giving an accurate representation of the population from other countries, including those who might have different attitudes towards online pornography. The gender difference is also supported by the literature, with Harper and Hodgins (2016) suggesting that males are more likely to watch online pornography content than females. Regarding the limita-tions of recruiting participants on *Reddit*, Luong and Lomanowska (2022) suggested, however, that 'r/SampleSize' offers a diverse and practical way to recruit relatively large and varied samples for research studies, with minimal setup, effort, and cost. However, Luong and Lomanowska (2022) pointed out that this *subreddit* predominantly comprises individuals from white ethnic backgrounds residing in the United States, which may limit the generalisability of the findings.

Another limitation relates to the reliance on self-report measures (SMI: Young et al., 2007; PPCS: Bőthe et al., 2018; PUMS:; Bőthe et al., 2021; Koós et al., 2024), which are susceptible to social desirability bias and response distortion. Participants may have underreported or overreported specific behaviours or emotional states based on how they wish to be perceived, leading to inaccuracies in the data. In addition, the SMI, while comprehensive in its assessment of schema modes, may not have fully captured the complexity of how these modes manifest in real-life contexts or under various stressors (Young et al., 2003). There is also the concern that the inventory may lack sufficient cultural sensitivity and may not adequately account for cultural variations in emotional expression or relational dynamics, which could limit its applicability across diverse popu-lations (Lobbestael et al., 2010).

Recruiting from social media platforms can also compromise the data's integrity, making the study vulnerable to bots. However, in order to mitigate this, no financial remuneration was provided to participate, and gatekeeper questions were used. For

instance, participants had to answer, by typing, their age and whether they had watched pornography before. Those who were under 18 years or who answered 'no' to the question related to pornography use were automatically excluded. In addition, the online platform used to collect the data automatically excluded participants who completed the survey in less than five minutes. Lastly, it is worth noting that the cross-sectional nature of the present study did not permit the establishment of cause-and-effect relationships between the variables. While predictive effects were tested in the regression analyses, only longitudinal and experimental designs can determine directional effects.

### *Clinical implications and future research*

Although the findings of the present study are preliminary, the results have potentially important implications for treatment and research. Specific schema modes, such as the Impulsive Child and Detached Self-Soother, were identified as strong predictors of PPU, which may help clinicians and researchers further understand the motivational factors underpinning PPU. The relationship between the Detached Self-Soother and Impulsive Child modes and PPU has important clinical implications for treatment, assessment, and policymaking. From a treatment perspective, recognising the role of these maladaptive schema modes in driving problematic pornography use is crucial for the development of appropriate formulations and treatment plans. Clinicians can focus on identifying and addressing the underlying emotional needs and potential schema modes (e.g. Vulnerable Child, Angry Child, and Punitive/Demanding Parent modes) that may lead individuals to engage in pornography use as a coping mechanism. For instance, individuals exhibiting the Detached Self-Soother mode may use pornography to numb (i) emotional pain (Vulnerable Child), (ii) intense feelings of anger and frustration (Angry Child), and/or (iii) overwhelming experiences of guilt and shame (Punitive/Demanding Parent). Moreover, those in the Impulsive Child mode may seek immediate gratification without considering the long-term consequences.

This understanding may pave the way for clinicians, whether from a schema therapy background or other modalities, to help patients learn healthier coping strategies to manage their PPU, as well as strengthen their understanding and insight into the drives and motivations that compel them to seek pornography as a regulating strategy. Treatment should also place great importance on developing more adaptive schema modes, such as the Healthy Adult, to enhance emotional maturity and interpersonal relationships. In terms of assessment, clinical tools such as the Schema Mode Inventory (SMI) can be used to assess the presence of maladaptive modes, enabling clinicians to develop client-centred treatment plans.

Regarding policymaking, the present study's findings emphasise the increasing need for broader mental health and sexual health policies that address the psychological factors contributing to PPU and, consequently, the development of early intervention strategies. These strategies can include integrating emotional literacy into sexual health curricula, moving beyond abstinence and behaviour control to focus on core unmet needs, intimacy, and connection, and creating interdisciplinary treatment guidelines for problematic pornography use through cross-sector collaboration and the input of those with lived experience of PPU.

The findings from the study also provide directions for continued research. It is recommended that the present study be replicated and extended with additional samples, because the role of schema modes may differ across cultures and within more diverse groups. Lastly, the present study only examined the general population and did not include a clinical sample. It is suggested that future research explore the differences and similarities between clinical and non-clinical populations.

## Conclusion

Problematic pornography use (PPU) has been the object of attention from clinicians and researchers due to its impact on interpersonal relationships, mental health outcomes, and sexual satisfaction. More recent research (Bőthe et al., 2021; Testa et al., 2024) has examined potential motivational factors underpinning the use of online pornography. However, despite a recent study (Vieira et al., 2025) that examined the relationship between early maladaptive schemas and online pornography use, no prior research has ever examined the association between schema modes and PPU.

The present study is the first to examine the predictive ability of schema modes in online pornography use and examine the differences between PPUs and NPPUs. It offers further insights into the motivational factors underlying PPU that can inform formulations, clinical interventions, and policymaking. By employing various treatment approaches, clinicians can help individuals gain insight into their patterns of PPU. Additionally, practitioners can assist those who engage in PPU not only in developing adaptive coping strategies for managing vulnerability and overwhelming inner experiences but also in cultivating and maintaining healthy intimate relationships and a positive model of relationships for themselves and others. Lastly, the present study advocates for including emotional literacy in sexual health education. It also encourages collaboration between mental health services, sexual health clinicians, and educational institutions to provide consistent messaging and referral pathways, ensuring guidelines reflect lived experiences and minimise stigma associated with PPU.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## References

Akbari, M., Jamshidi, S., Hosseini, Z. S., Sheikhi, S., Asadi Asadabad, R., Zamani, M., & Wright, P. J. (2024). Personality, attachment, and pornography: A meta-analysis. *Communication Research*. https://doi.org/10.1177/00936502241287834

Arntz, A. (2012). *Schema therapy: A practitioner's guide*. Wiley-Blackwell.

Bach, B., Lockwood, G., & Young, J. E. (2018). A new look at the schema therapy model: Organization and role of early maladaptive schemas. *Cognitive Behaviour Therapy*, *47*(4), 328–349. https://doi.org/10.1080/16506073.2017.1410566

Bär, A., Bär, H. E., Rijkeboer, M. M., & Lobbestael, J. (2023). Early maladaptive schemas and schema modes in clinical disorders: A systematic review. *Psychology & Psychotherapy: Theory, Research & Practice*, *96*(3), 716–747. https://doi.org/10.1111/papt.12465

Bilge, Y., & Balaban, G. (2021). The relationships between personality disorders and early maladaptive schemas and the moderating role of gender. *Anatolian Journal of Psychiatry*, *22*1–18. https://doi.org/10.5455/apd.114935

Bocci Benucci, S., DiGesto, C., Ghinassi, S., Casale, S., & Fioravanti, G. (2024). Pornography use, problematic pornography use, impulsivity, and sensation seeking: A meta-analysis. *The Journal of Sexual Medicine*, *21*(10), 922–939. https://doi.org/10.1093/jsxmed/qdae101

Boog, M., van Hest, K. M., Drescher, T., Verschuur, M. J., & Franken, I. H. A. (2018). Schema modes and personality disorder symptoms in alcohol-dependent and cocaine-dependent patients. *European Addiction Research*, *24*(5), 226–233. https://doi.org/10.1159/000493644

Borgogna, N. C., & McDermott, R. C. (2018). The role of gender, experiential avoidance, and scrupulosity in problematic pornography viewing: A moderated-mediation model*. *Sexual Addiction & Compulsivity*, *25*(4), 319–344. https://doi.org/10.1080/10720162.2018.1503123

Bőthe, B., Nagy, L., Koós, M., Demetrovics, Z., Potenza, M. N., & Kraus, S. W. (2024). Problematic pornography use across countries, genders, and sexual orientations: Insights from the International sex survey and comparison of different assessment tools. *Addiction*, *119*(5), 928–950. https://doi.org/10.1111/add.16431

Bőthe, B., Tóth-Király, I., Bella, N., Potenza, M. N., Demetrovics, Z., & Orosz, G. (2021). Why do people watch pornography? The motivational basis of pornography use. *Psychology of Addictive Behaviors*, *35*(2), 172–186. https://doi.org/10.1037/adb0000603

Bőthe, B., Tóth-Király, I., Potenza, M. N., Orosz, G., & Demetrovics, Z. (2020). High-frequency pornography use may not always be problematic. *The Journal of Sexual Medicine*, *17*(4), 793–811. https://doi.org/10.1016/j.jsxm.2020.01.007

Bőthe, B., Tóth-Király, I., Zsila, Á., Griffiths, M. D., Demetrovics, Z., & Orosz, G. (2018). The development of the problematic pornography consumption Scale (PPCS). *Journal of Sex Research*, *55*(3), 395–406. https://doi.org/10.1080/00224499.2017.1291798

Brockman, R. N., Simpson, S., Hayes, C., van der Wijngaart, R., & Smout, M. (2023). *Cambridge guide to schema therapy*. Cambridge University Press.

Cardoso, J., Ramos, C., Brito, J., & Almeida, T. C. (2023). Difficulties in emotion regulation and problematic pornography use: The mediating role of loneliness. *International Journal of Sexual Health*, *35*(3), 481–493. https://doi.org/10.1080/19317611.2023.2224807

Crowell, S. E., Beauchaine, T. P., & Linehan, M. M. (2009). A biosocial developmental model of borderline personality: Elaborating and extending Linehan's theory. *Psychological Bulletin*, *135*(3), 495–510. https://doi.org/10.1037/a0015616

Csányi, E., Veszprémi, M. D., Zsidó, A. N., & Meskó, N. (2025). Motivational pathways diverge between frequent and problematic pornography use. *International Journal of Sexual Health*, 1–15. https://doi.org/10.1080/19317611.2025.2605517

Cudo, A., Mącik, D., Griffiths, M. D., & Kuss, D. J. (2020). The relationship between problematic Facebook use and early maladaptive schemas. *Journal of Clinical Medicine*, *9*(12), 3921. https://doi.org/10.3390/jcm9123921

Derbyshire, K. L., & Grant, J. E. (2015). Compulsive sexual behavior: A review of the literature. *Journal of Behavioral Addictions*, *4*(2), 37–43. https://doi.org/10.1556/2006.4.2015.003

Duffy, A., Dawson, D. L., & Das Nair, R. (2016). Pornography addiction in adults: A systematic review of definitions and reported impact. *The Journal of Sexual Medicine*, *13*(5), 760–777. https://doi.org/10.1016/j.jsxm.2016.03.002

Efrati, Y., Kolubinski, D. C., Marino, C., & Spada, M. M. (2023). Early maladaptive schemas are associated with adolescents' substance and behavioral addictions. *Journal of Rational-Emotive and Cognitive-Behavior Therapy*, *41*(3), 690–709. https://doi.org/10.1007/s10942-022-00478-8

Efrati, Y., Shukron, O., & Epstein, R. (2021). Early maladaptive schemas are highly indicative of compulsive sexual behavior. *Evaluation & the Health Professions*, 44(2), 142–151. https://doi.org/10.1177/0163278720983428

Elmquist, J., Shorey, R. C., Anderson, S., & Stuart, G. L. (2016). A preliminary investigation of the relationship between early maladaptive schemas and compulsive sexual behaviors in a substance-dependent population. *Journal of Substance Use*, 21(4), 349–354. https://doi.org/10.3109/14659891.2015.1029021

Farrell, J. M., & Shaw, I. A. (2012). *Schema therapy for borderline personality disorder*. Wiley-Blackwell.

Floyd, C. G., Volk, F., Flory, D., Harden, K., Peters, C. E., & Taylor, A. (2022). Sexual shame as a unique distress outcome of morally incongruent pornography use: Modifications and methodological considerations. *Archives of Sexual Behavior*, 51(2), 1293–1311. https://doi.org/10.1007/s10508-021-02104-7

Gewirtz-Meydan, A., Bőthe, B., & Spivak-Lavi, Z. (2024). The associations of pornography use and body image among heterosexual and sexual minority men. *Archives of Sexual Behavior*, 53(9), 3379–3392. https://doi.org/10.1007/s10508-024-02887-5

Giesen-Bloo, J., van Dyck, R., Spinhoven, P., van Tilburg, W., Dirksen, C., van Asselt, T., Kremers, I., Nadort, M., & Arntz, A. (2006). Outpatient psychotherapy for borderline personality disorder: Randomized trial of schema-focused therapy vs transference-focused psychotherapy. *Archives of General Psychiatry*, 63(6), 649–658. https://doi.org/10.1001/archpsyc.63.6.649

Griffiths, M. (2005). A 'components' model of addiction within a biopsychosocial framework. *Journal of Substance Use*, 10(4), 191–197. https://doi.org/10.1080/14659890500114359

Grubbs, J. B., Exline, J. J., & Pargament, K. I. (2019). Problematic pornography use and mental health: A review of the literature. *Journal of Social & Clinical Psychology*, 38(1), 1–16. https://doi.org/10.1521/jscp.2019.38.1.1

Harper, C., & Hodgins, D. C. (2016). Examining correlates of problematic internet pornography use among university students. *Journal of Behavioral Addictions*, 5(2), 179–191. https://doi.org/10.1556/2006.5.2016.022

Keulen de Vos, M. E., Bernstein, D. P., Vanstipelen, S., de Vogel, V., Lucker, T. P. C., Slaats, M., Hartkoorn, M., & Arntz, A. (2016). Schema modes in criminal and violent behaviour of forensic cluster B PD patients: A retrospective and prospective study. *Legal and Criminological Psychology*, 21(1), 56–76. https://doi.org/10.1111/lcrp.12047

Kim, H. J. (2019). Multicollinearity and misleading statistical results. *Korean Journal of Anesthesiology*, 72(6), 558–569. https://doi.org/10.4097/kja.19087

Koletić, G., Štulhofer, A., Hald, G. M., & Træen, B. (2021). Self-assessed effects of pornography use on personal sex life: Results from a large-scale study of Norwegian adults. *International Journal of Sexual Health*, 33(3), 342–356. https://doi.org/10.1080/19317611.2021.1918310

Koós, M., Nagy, L., Kraus, S. W., Demetrovics, Z., Potenza, M. N., Gaudet, É., Ballester-Arnal, R., Batthyány, D., Bergeron, S., Billieux, J., Briken, P., Burkauskas, J., Cárdenas-López, G., Carvalho, J., Castro-Calvo, J., Chang, Y. H., Chen, L., Ciocca, G.Corazza, O. . . . Bőthe, B. (2024). Why do people watch pornography? cross-cultural validation of the pornography use Motivations Scale (PUMS) and its short form (PUMS-8). *Journal of Sex Research*, 62(6), 1049–1065. https://doi.org/10.1080/00224499.2024.2359641

Kraus, S. W., Voon, V., & Potenza, M. N. (2016). Should compulsive sexual behavior be considered an addiction? *Addiction*, 111(12), 2097–2106. https://doi.org/10.1111/add.13297

Kühn, S., & Gallinat, J. (2014). Brain structure and functional connectivity associated with pornography consumption: The brain on porn. *JAMA Psychiatry*, 71(7), 827–834. https://doi.org/10.1001/jamapsychiatry.2014.93

Lacy, E. (2024). STAT: Schema therapy for addiction treatment, a proposal for the integrative treatment of addictive disorders. *Frontiers in Psychology*, 15, 1366617. https://doi.org/10.3389/fpsyg.2024.1366617

Lobbestael, J., Arntz, A., & Bernstein, D. P. (2010). The schema mode Inventory: A psychometric evaluation. *Personality & Individual Differences*, 48(7), 1–6. https://doi.org/10.1016/j.paid.2010.01.011

Luong, R., & Lomanowska, A. M. (2022). Evaluating reddit as a crowdsourcing platform for psychology research projects. *Teaching of Psychology*, *49*(4), 329–337. https://doi.org/10.1177/00986283211020739

Motamed, H., Rasoulzadeh Tabatabaei, S. K., & Aghamohammadian Sharbaf, H. (2025). The relationship between schema modes and problematic pornography use in youth: The mediating role of emotional dysregulation. *Psychology and Sexuality*, *16*(4), 1246–1257. https://doi.org/10.1080/19419899.2025.2518974

Moynihan, A. B., Igou, E. R., & van Tilburg, W. A. P. (2022). Pornography consumption as existential escape from boredom. *Personality & Individual Differences*, *198*, 111802. https://doi.org/10.1016/j.paid.2022.111802

Newton-Howes, G. M., Foulds, J. A., Guy, N. H., Boden, J. M., & Mulder, R. T. (2017). Personality disorder and alcohol treatment outcome: Systematic review and meta-analysis. *British Journal of Psychiatry*, *211*(1), 22–30. https://doi.org/10.1192/bjp.bp.116.194720

Rafaeli, E., Bernstein, D. P., & Young, J. E. (2015). *Schema therapy: A practitioner's guide*. The Guilford Press.

Sniewski, L., & Farvid, P. (2020). Hidden in shame: Heterosexual men's experiences of self-perceived problematic pornography use. *Psychology of Men and Masculinities*, *21*(2), 201–212. https://doi.org/10.1037/men0000232

Sussman, S., Lisha, N., & Griffiths, M. (2011). Prevalence of the addictions: A problem of the majority or the minority? *Evaluation & the Health Professions*, *34*(1), 3–56. https://doi.org/10.1177/0163278710380124

Sutrisno, W., & Saputra, M. (2025). Understanding online pornography addiction: A systematic review of behavioral impacts, screening tools, and therapeutic interventions. *Entertainment Computing*, *54*, 100956. https://doi.org/10.1016/j.entcom.2025.100956

Testa, G., Villena-Moya, A., & Chiclana-Actis, C. (2024). Emotional dysregulation and coping strategies in the context of problematic pornography use: A narrative review. *Current Addiction Reports*, *11*(2), 229–241. https://doi.org/10.1007/s40429-024-00548-0

Turban, J. L., Keuroghlian, A. S., & Mayer, K. H. (2024). Loneliness, emotional regulation, and problematic pornography use: A psychological framework for assessment and intervention. *Current Psychiatry Reports*, *26*(1), 32–41. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC11090905/

Van Vreeswijk, M., Broersen, J., & Nadort, M. (2015). *Schema therapy: A practitioner's guide*. Wiley-Blackwell.

Vieira, C., & Griffiths, M. D. (2024). Problematic pornography use and mental health: A systematic review. *Sexual Health & Compulsivity*, *31*(3), 207–247. https://doi.org/10.1080/26929953.2024.2348624

Vieira, C., Kuss, D. J., & Griffiths, M. D. (2023). Early maladaptive schemas and behavioural addictions: A systematic literature review. *Clinical Psychology Review*, *105*, 102340. https://doi.org/10.1016/j.cpr.2023.102340

Vieira, C., Kuss, D. J., & Griffiths, M. D. (2025). Early maladaptive schemas and online pornography use: A cross-sectional study. *International Journal of Mental Health and Addiction*. https://doi.org/10.1007/s11469-025-01463-9

Wéry, A., & Billieux, J. (2017). Online sexual activities: An exploratory study of problematic and non-problematic usage patterns in a sample of men. *Computers in Human Behavior*, *75*, 271–277. https://doi.org/10.1016/j.chb.2015.11.046

Wright, P. J., Tokunaga, R. S., & Kraus, A. (2016). A meta-analysis of pornography consumption and actual acts of sexual aggression in general population studies. *Journal of Communication*, *66*(1), 183–205. https://doi.org/10.1111/jcom.12201

Young, J. E., Arntz, A., Lobbestael, J., Weishaar, M. E., & Van Vreeswijk, M. F. (2007). *The schema mode inventory*. Schema Therapy Institute.

Young, J. E., Klosko, J. S., & Weishaar, M. E. (2003). *Schema therapy: A practitioner's guide*. Guilford Press.