

## The Highs and Lows of Pornography Use: Does Motivation Affect Users' Life Satisfaction?

Kármén SÜLYOK (DEMETER)<sup>1,\*</sup> ,  
Kinga KÁLCZA-JÁNOSI<sup>1</sup> , Ibolya KOTTA<sup>1</sup> 

**ABSTRACT.** The negative outcomes of problematic pornography use (PPU) have been well documented, but there is a gap in the literature on the underlying mechanisms that influence the life satisfaction and mental health of pornography users. In the current study we have used a cross-sectional, person-centered approach in order to reveal the motivational and life satisfaction profile of problematic and non-problematic pornography users based on the theoretical framework of Self-determination Theory (SDT). We also wished to determine the role of self-determination in the life satisfaction of pornography users, as this variable is considered to be relevant for the life satisfaction and mental health of online pornography consumers. Our participants (N = 4302) were Hungarian speaking adults from Romania and Hungary (age M=27,91; SD=9,50), selected through sampling on social networking sites related to pornography, sexual dysfunction and addiction. Individuals were assigned to one of 3 groups (i.e., no symptoms, few symptoms, problematic use), based on the presence of symptoms related to pornography use. Demographic data was gathered, self-determination, life satisfaction and pornography use were assessed using the online version of validated instruments. Results indicated that SDT-based motivation and life satisfaction have a significant role in shaping the profile of pornography users. Participants with PPU felt less satisfied with their life, were less self-aware and experienced lower levels of perceived choice than both no symptom and few symptom groups. Although self-determination significantly predicted life satisfaction, this effect was not influenced by the problematic character of pornography use.

**Keywords:** self-determined motives; life satisfaction; online sexual activities; problematic pornography use.

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<sup>1</sup> Babes-Bolyai University, Faculty of Psychology and Educational Sciences, Department of Applied Psychology, Cluj-Napoca, Romania

\* Corresponding author: karmen.demeter@ubbcluj.ro



## INTRODUCTION

The negative outcomes of problematic pornography use have been well documented (Willoughby et al., 2021; Tóth-Király et al., 2019; Vaillancourt-Morel et al., 2017; Wéry & Billieux, 2017), but there is a gap in the literature on the underlying mechanisms and characteristics (Binnie & Reavey, 2020) that influence these outcomes and might have a determining role in the life satisfaction and mental health of pornography users (Young, 2017). Some current results evinced that pornography use (PU) motivations may differentiate between the adaptive and maladaptive outcomes of pornography use (Bóthe et al., 2022) and might be important correlates of users' life satisfaction.

*Life satisfaction* was conceptualized as a cognitive evaluation process of a person's life, based on certain personal criteria (Shin & Johnson, 1978; Diener et al., 1985). Diener et al. (2002) emphasized that it is an important motivational component of daily living activities and can be considered as one of the most common indicators of one's general well-being. Recent studies concluded that basic psychological needs, motivation aspects (Tang et al., 2020), well-being (Huang, 2022; Ruggeri et al., 2020) and self-esteem (Huang, 2022) are some of the main correlates of life satisfaction. Research oriented on the main influencing factors of life satisfaction revealed that the variable is consistently influenced by sexual satisfaction (Schmiedeberg et al., 2017). In recent years, the literature of the field suggested that some aspects of pornography use also have a significant impact on sexual satisfaction (Wright et al., 2019) and consequently, problematic aspects of pornography use might affect the level of one's life satisfaction (Kraus et al., 2018; Harper & Hodgins, 2016; Willoughby et al., 2018).

*Pornography use* is a common recreational activity and due to the availability of internet access, it has become one of the most frequent online sexual activities (OSA). Online sexual activities encompass behaviors that appear in a digital environment and involve sexual content, sexual topics and sexual stimuli (Shaughnessy et al., 2017). According to Cooper et al.'s (2000) classification, we can differentiate between non-compulsive and compulsive online activities. Compulsive activities have been characterized by lack of control, they are less prevalent, but they tend to present a higher risk for addictive behavior (Wéry & Billieux, 2017). Based on the OSA forms determined by Shaughnessy et al. (2017), pornography use (PU) was considered a solitary arousal activity, which can have different positive or negative effects on a person's life and can also escalate to problematic use. While some studies suggested that only a small percent (4% of male and 1% of female users) may be at risk for problematic pornography use (PPU) (Rissel et al., 2017), other results indicated that these levels are higher

and reach almost 13% (Grubbs et al., 2019; Wéry & Billieux, 2017). Interestingly, only about half of self-labeled problematic users acknowledged that pornography use has a negative effect on their life.

Previous research revealed some positive aspects of pornography use, such as sexual knowledge, sexual consciousness or improving sexual life (e.g., Koletic et al., 2021; Bóthe et al., 2020; Barrada et al., 2019; Vaillancourt-Morel et al., 2017). Recent data indicated that PU in general is more related to positive aspects of life satisfaction, as the level of positive emotional associations related to pornography use has a small, but stable effect on a person's life satisfaction (Olmstead et al., 2023).

Studies focused on the effect of PU on sexual well-being and satisfaction suggested that although it can have positive effects on one's attitude, sexual well-being and sexual satisfaction, when it becomes problematic, it is often associated with negative outcomes on the aforementioned variables (Hoagland & Grubbs, 2021; Binnie & Reavey, 2020). Participants high on PPU reported low levels of social well-being (Maitland & Neilson, 2023), and, regardless of consumption frequency, poorer sexual satisfaction (Goh et al., 2023). There was also evidence that PPU is negatively related to sexual and life satisfaction (Kraus et al., 2018; Harper & Hodgins, 2016). Regular users of porn sites presented lower life satisfaction and high rates of dysfunctional online sexual activity (OSA) as compared to abstainers with low engagement in pornography (Willoughby et al., 2018). Recent study results in a male adolescent sample also indicated a stable negative correlation between the level of PPU and life satisfaction (Štulhofer et al., 2020). However, these results were obtained with only a small percentage of participants presenting high levels of problematic use. The current state of the literature led us to the conclusion that the effect of pornography use in general is limited regarding life satisfaction. However, there seem to be significant differences in life satisfaction and correlated variables, based on the level of PU of individuals (i.e., non-users, pornography users, self-reported problematic pornography users) (Czajeczny et al., 2023; Maitland & Neilson, 2023; Willoughby et al., 2018; Kraus et al., 2018).

In their *Self-determination theory (SDT)* Deci and Ryan (2000) stated that people have an inherent growth tendency, and they engage in behaviors conducive to physical and mental well-being when their basic psychological needs are socially accepted (Deci & Ryan, 2002). If their needs for *autonomy, competence and relatedness* are supported, people experience *better quality motivation, and are more likely to maintain desirable behaviors*.

In the framework of SDT, sexual behavior was considered to be guided by different forms of motivation (Tóth-Király et al., 2019). Based on their perceived level of self-determination and autonomy, individuals might experience different

degrees of intrinsic (i.e., autonomous, one engages in sex for its own sake) or extrinsic (i.e., sex is performed for instrumental reasons) (Deci & Ryan, 2000) sexual motivations. Differences in the process of internalization during sex-related activities were found to shape specific profiles with characteristic behavioral and psychological outcomes (Tóth-Király et al., 2019). Individuals who considered that sex was a part of their identity engaged in a free and *autonomous* way in sexual activities and presented a higher potential for adaptive outcomes. When sex-related values, norms and behaviors were not completely self-endorsed and were experienced as the result of inter- or intrapersonal contingencies, a more *controlled* profile emerged which might result in maladaptive outcomes (Tóth-Király et al., 2019). Although there is a lack of studies examining the relationship between PU and SDT-based sexual motivations, self-determination has been previously linked to problematic or risky behaviors in different domains: risky sexual behaviors, e.g. number of casual sex partners, unprotected sexual intercourse (Ingledew & Ferguson, 2007); online gaming (Király, Tóth, Urbán, Demetrovics & Maraz, 2017); drinking behavior (Richards, Pearson & Field, 2020).

Literature oriented at SDT and specific forms of sexual behavior posited that people with more autonomous and positive sexual motives tended to be more satisfied with their sexual functioning (Gravel et al., 2016), relationship (Wood et al., 2018; Brunell & Webster, 2013), well-being and life in general (Brunell & Webster, 2013; Tóth-Király et al., 2019). Overall, *autonomous motivation* was considered to have a protective role in problematic and risky sexual behavior (Ingledew & Ferguson, 2007). Regarding the correlates of negative motivations, less autonomous and more extrinsic motivations (i.e., emotional avoidance, stress reduction) were associated with higher levels of PPU (Bóthe, Tóth-Király, Bella et al., 2021).

Previous studies have emphasized that more autonomous or self-determined motivations were connected to specific aspects of general psychological well-being, suggesting that performing sex for autonomous reasons also relates to higher life satisfaction (Brunell & Webster, 2013; Gravel et al., 2019). The presence of multiple self-determined motivations was found to induce high levels in positive sex-related correlates (e.g. life satisfaction, sexual satisfaction and positive emotions during sex) and low levels of PPU. Non-self-determined motivations were in turn associated with non-desirable correlations (e.g. low life satisfaction, low sexual satisfaction and negative emotions during sex) (Tóth-Király et al., 2019) and higher incidence of PPU (Bóthe, Tóth-Király, Bella et al., 2021). However, the authors found that individuals with moderately self-determined profiles presented the lowest level of PPU (Tóth-Király et al., 2019).

These results suggest that PU motivations may differentiate between the adaptive and maladaptive outcomes of pornography use (Bóthe et al., 2022) and are important correlates of users' life satisfaction.

## **OBJECTIVES**

In this study we wished to explore in a person-centered cross-sectional study the motivational characteristics of pornography users based on the theoretical framework of SDT. Contrary to previous variable-centered approaches we wished to apply a person-centered methodology in order to assess the multidimensional influence of motivation and life satisfaction on pornography use.

As a specific goal, we aimed to identify the main SDT-based motivational and life satisfaction profiles of problematic and non-problematic pornography users. Second, we wanted to determine the role of different dimensions of motivation in the overall life satisfaction of pornography users, as this variable was considered to have a relevant role in the life satisfaction and mental health of online pornography consumers.

## **MATERIALS AND METHODS**

### ***Participants***

Volunteers (N = 4302) were recruited through sampling on social platforms on social networking sites related to pornography, sexual dysfunction and addiction. Using the OSAS ordinal scores the sample was divided into three groups based on the presence of symptoms associated with pornography use: no symptoms (N=3373); few symptoms group (N=730); problematic pornography use (N=199). The sample consisted of Hungarian participants and Hungarians from Romania, Transylvania (age M=27,91; SD=9,50). All participants' mother tongue was Hungarian, and they were adults aged 18 and over. The sample was heterogeneous in terms of age, marital status and educational level. Descriptive statistics are shown in Table 1.

**Table 1.** *Baseline characteristics of the participants (N = 4302)*

	<b>Pornography_use_groups</b>		
	no symptoms n=3373	few symptoms n=730	problematic pornography use n=199
<b>Age</b>	28.70±9.64	24.78±7.88	25.95±9.96
<b>Biological sex (n, %)</b>			
male	435(12.9%)	208(28.5%)	101(50.8%)
female	2938(87.1%)	522(71.5%)	98(49.2%)
<b>Education (n, %)</b>			
primary school	73(2.2%)	33(4.5%)	13(6.5%)
vocational secondary	170(5.0%)	27(3.7%)	8(4.0%)
vocational high school	719(21.3%)	152(20.8%)	35(17.6%)
high school	901(26.7%)	256(35.1%)	67(33.7%)
college, university, master	1476(43.8%)	260(35.6%)	73(36.7%)
doctoral degree	34(1.0%)	2(.3%)	3(1.5%)
<b>Country (n, %)</b>			
Hu	3160(93.7%)	680(93.2%)	176(88.4%)
Ro	213(6.3%)	50(6.8%)	23(11.6%)
<b>Marital status (n, %)</b>			
single	675(20.0%)	192(26.3%)	81(40.7%)
married	598(17.7%)	80(11.0%)	24(12.1%)
separated, divorced	1637(48.5%)	382(52.3%)	86(43.2%)
relationship, life partner	443(13.1%)	75(10.3%)	7(3.5%)
widowed	20(.6%)	1(.1%)	1(.5%)
<b>Sexual orientation (n, %)</b>			
heterosexual	3250(96.4%)	673(92.2%)	179(89.9%)
other	123(3.6%)	57(7.8%)	20(10.1%)

*Note.* Values are mean and standard deviation ( $M \pm SD$ ) for continuous variables and frequencies, percentages for categorical variables.

### ***Power and sample size***

Using G\*Power we conducted an a priori power analysis in order to determine the minimum sample sizes required to reach our objectives. Results for the ANOVA analysis indicated that in order to achieve 95% power at a significance criterion of  $\alpha = .05$  for detecting a medium effect ( $f^2 = 0.25$ ), a sample of  $N = 252$  was required. In order to reach a small effect size ( $f^2 = 0.1$ ) the required sample size was  $N = 1548$ . Thus, the obtained sample size of  $N = 4302$  was found to be adequate to test the hypothesis with medium effect size.

Results for linear regression with one predictor indicated the required sample size necessary to achieve 95% power for a medium effect size ( $f^2 = 0.15$ ) was  $N = 89$ , while for a small effect size ( $f^2 = 0.02$ ) the required sample size was  $N = 652$ . Thus, the sample sizes of no symptoms group ( $N=3373$ ) and few symptoms group ( $N=730$ ) were considered suitable for detecting small effect sizes, while for the PPU group ( $N=199$ ) the sample was found to be optimal for detecting medium effect.

### ***Ethics Statement***

Throughout our research, methods and procedures were implemented as requested by the Guideline of the Code of Deontology for the Profession of Psychologist, elaborated by the Romanian College of Psychologists (COPSI). The study is in line with research ethical standards, ethical approval was obtained from Babes-Bolyai University (reference number 11.804 / 26.08.2020).

### ***Measurements***

#### ***Demographics***

Participants included in the study provided data regarding their sex, age, education and marital status.

#### ***Instruments***

The following instruments were used to explore our research variables, respectively self-determined motives, satisfaction with life and the presence of symptoms associated with online pornography use:

*The Self-Determination Scale (SDS)* is an instrument developed by Sheldon and Deci (1996) which measures the degree to which people tend to behave and function in a self-determined way (Sheldon, Ryan & Rice, 1996). The tool is a 10-item scale measuring two variables, self-awareness and self-perceived choice, with two subscales. Self-Awareness subscale (items 2, 4, 6, 8,

10) reflects the extent to which individuals are aware of their feelings and their sense of self. Self-Perceived Choice subscale (items 1, 3, 5, 7, 9) evaluates the degree to which one perceives having choice in one's actions. Participants were asked to evaluate on a 5-point Likert scale the degree to which they agree with the presented statements. Each subscale is assessed by 5 items. The scores for each subscale are determined by calculating the mean value of scores obtained on the 5 items. Items of the SPC subscale are reversed. Subscales can be used independently, as well as combined by calculating an *overall self-determination index* (Sheldon & Deci, 1996). The scale in the current study shows good reliability (Cronbach's  $\alpha = 0.74$ ).

*Satisfaction with Life Scale (SWLS)* (Diener et al., 1985) is a short 5-item instrument designed to measure global cognitive judgments of satisfaction with one's life. The SWLS is a 7-point Likert style response scale. The possible range of scores is 5-35, with a score of 20 representing a neutral point on the scale. Scores between 5-9 indicate the respondent is extremely dissatisfied with life, whereas scores between 31-35 indicate the respondent is extremely satisfied.

The scale in the current study has a good reliability level (Cronbach's  $\alpha = 0.86$ ).

*The Online Sexual Activity Scale (OSAS)* (Kotta et al., 2022) is a 12-item true/false scale designed to measure problematic cybersex activity in the general population. In line with the network approach of problematic online sexual activity, the scale contains criteria for addiction and compulsivity, as well.

In the current study the one-factor OSAS showed adequate internal consistency ( $\alpha = .73$ ).

### ***Data Processing and Statistical Analysis***

A list-wise deletion approach was used as the method for handling missing values: all cases with missing values for any variable were excluded from the analysis. The data distribution was checked according to the suggestions of George and Mallery (2011), and values between -2 and +2 for skewness and kurtosis were considered acceptable for a normal univariate distribution.

Descriptive statistics, namely percentages for categorical variables and means and standard deviations ( $M \pm SD$ ) for continuous variables, were reported. Cronbach's alpha values were calculated to check the internal consistency of the scales. One-way analysis of variance (ANOVA) (and the more robust Welch statistic for unequal distributions), Tukey's HSD and Games-Howell post hoc analyses were used. The alpha level was set at  $p \leq 0.05$ . The



effect sizes were assessed using eta-squared coefficients (0.01 small, 0.06 medium, and 0.14 large (Richardson, 2011)).

In order to be able to examine different profiles of pornography use, 3 groups were stratified based on their results on OSAS. Pornography users who reported no symptoms were assigned to the 'no symptom' group. Participants with OSAS scores ranging from 1 to 2 were assigned to the 'few symptoms' group. Finally, pornography users who reported 3 or more symptoms were included in the 'problematic pornography use' group.

In the second part of our statistical analysis, simple linear regression was used to examine the predictive role of the autonomy index (self-determined motives) on life satisfaction. The predictive role was tested separately for each of the groups stratified along pornography use.

Calculations were performed with SPSS (statistical package for the social sciences) version 23.0.

## RESULTS

Results of the statistical analysis endorsed our two specific objectives, namely, that SDT-based motivation and life satisfaction have a significant role in shaping the profile of pornography users. Self-determination was also found to predict the level of life satisfaction in all three subgroups of pornography users. Results of the one-way ANOVA between the 3 subgroups are presented in Table 2.

When analyzing the life satisfaction variable, Tukey's HSD post hoc test was performed in order to identify significant differences between specific pairs. Tukey's HSD post hoc test showed that the no symptoms group had significantly higher levels of life satisfaction than both few symptoms ( $p < 0.01$ ) and problematic pornography use ( $p < 0.001$ ) groups. The few symptoms group presented significantly higher life satisfaction than our problematic pornography users group ( $p < 0.05$ ).

In order to establish whether the pairwise comparisons are statistically significant for self-awareness, we used the Games-Howell post hoc test. The test revealed that participants with *no symptoms* presented significantly higher self-awareness compared to both *few symptoms* ( $p < 0.001$ ) and *problematic pornography use* ( $p < 0.001$ ) groups. The *few symptoms* group had also significantly higher levels of self-awareness than the *problematic pornography uses* group ( $p < 0.05$ ).

**Table 2.** Means, Standard Deviations, and One-Way Analyses of Variance between groups stratified by pornography use status

	<i>no symptoms</i>		<i>few symptoms</i>		<i>problematic pornography use</i>		F/(df)	$\eta^2$
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Satisfaction_with_life	22.11	6.58	21.27	6.53	19.85	6.93	14.640 (2,4299)***	.007
Awareness_of_Self	19.85	3.97	18.56	4.32	17.66	4.29	48.052 <sub>Welch</sub> (2,471.82)***	.024
Perceived_Choice	17.25	3.39	16.68	3.39	16.41	3.36	13.130 (2,4299)***	.006
Self_Determination (autonomy) index	37.11	6.20	35.24	6.38	34.08	6.41	44.605 (2,4299)***	.020

Note. \*\*\* $p \leq .001$

To test our last two motivation-related variables, perceived choice and self-determination, we have performed Tukey's HSD post hoc test. Results for perceived choice presented significant differences between the group without no symptoms and the other two groups, as participants with *no symptoms* experienced an elevated level of perceived choice compared to *few symptoms* ( $p < 0.001$ ) and *problematic pornography use* ( $p < 0.01$ ) groups. This difference in perceived choice was, however, not tangible between individuals with *few symptoms* and *problematic pornography uses* ( $p = 0.583$ ).

In the case of self-determination (autonomy) index, results showed that *no symptoms* group had significantly higher perceived autonomy than both *few symptoms* ( $p < 0.001$ ) and *problematic pornography use* ( $p < 0.001$ ) groups. Again, no significant contrast was detected between *users with few symptoms* and *problematic users* ( $p = 0.052$ ).

To address our second specific objective, we have tested the predictive role of self-determined motives on the life satisfaction of pornography users. This link was examined in each of the three groups determined based on the degree of self-reported problematic symptoms.

In the group of individuals who reported *no symptoms*, the adjusted R<sup>2</sup> showed that 23% ( $\Delta R^2 = 0.230$ ,  $F(1,3371) = 1005.03$ ,  $p < 0.001$ ;  $\beta = 0.479$ ,  $p < 0.001$ ) of the variance in their life satisfaction could be explained by the self-determination index. Results obtained in the *few symptoms* group revealed an adjusted R<sup>2</sup> that explained 22% of the variance ( $\Delta R^2 = 0.220$ ,  $F(1,728) = 207.002$ ,  $p < 0.001$ ;  $\beta = 0.471$ ,  $p < 0.001$ ). In the case of *problematic pornography users*, the adjusted R<sup>2</sup> was 24 % ( $\Delta R^2 = 0.239$ ,  $F(1,197) = 63.264$ ,  $p < 0.001$ ;  $\beta = 0.493$ ,  $p < 0.001$ ). These outcomes reflect that the linear regression model testing the predictive role of self-determination on life satisfaction is significant for all three groups, showing the proportion of variation to be largely the same, whatever the amount of symptoms experienced.

## DISCUSSION AND CONCLUSION

Our research proposed a person-centered cross-sectional design to explore the motivational characteristics of pornography users based on the theoretical framework of SDT. We considered the person-centered methodology to be an optimal approach in order to assess the multidimensional role of self-determination in problematic and non-problematic pornography use.

Therefore, our first goal was to identify the *SDT-based motivational and life satisfaction profile of pornography users*. In order to achieve this, we created 3 profile groups based on the presence of problematic symptoms: problematic pornography users, users with few symptoms and non-problematic users (users with no symptoms). Our results suggest that compared to non-problematic pornography users, individuals with PPU experience *less self-awareness* and have a *lesser sense of choice*. These profile characteristics partially integrate in the pattern suggested by previous findings on SDT and PPU, specifically that less autonomous and more extrinsic motivations are associated with higher levels of PPU (Tóth-Király et al., 2019; Bóthe, Tóth-Király, Bella et al., 2021). However, the mechanisms of SDT in PPU are not fully clear, as problematic use was previously found to have the lowest rate in the group of moderately self-determined users. The profiles described by Tóth-Király et al. (2019) might suggest that there is an optimum level of self-determination and autonomous motives which functions as a protective component in PPU.

The profiles reveal a similar tendency in respect to *life satisfaction*: problematic pornography users were the least satisfied with their lives, followed by users with few symptoms and finally users with no symptoms. These outcomes are endorsed by the literature, aspects of problematic pornography use were found to show a negative correlation with life satisfaction (Kraus et al., 2018;

Harper & Hodgins, 2016; Štulhofer et al., 2020). Negative associations with life satisfaction were found to be more elevated in regular porn site users, when compared to abstainers with low engagement in pornography (Willoughby et al., 2018). Although a large amount of the studies focus on the negative aspects of PU and OSA (Štulhofer et al., 2020; Willoughby et al., 2018; Harper & Hodgins, 2016; Czajeczny et al., 2023; Maitland & Neilson, 2023), pornography use can also have positive effects on life satisfaction. Recently, PU in general was associated with positive aspects of life satisfaction, specifically positive emotions related to PU were found to have a small, but stable positive effect on a person's life satisfaction (Olmstead et al., 2023). This recent research supports our findings, which confirmed that pornography users with few or no symptoms present a better satisfaction with life, compared to PPU.

Based on the current outcomes, we can posit that individuals who experience negative symptoms associated with pornography use are less self-determined and autonomous in their motivation and are less satisfied with their life. The motivational and life satisfaction aspects seem to be negatively affected by the amount of self-perceived symptoms, self-determined motivation and satisfaction with life decrease when the level of symptoms is higher.

Second, we analyzed the role of different dimensions of motivation in the overall life satisfaction of pornography users, as this variable is considered to have a relevant role in the well-being and mental health of online pornography consumers (Czajeczny et al., 2023; Maitland & Neilson, 2023). In order to achieve this, a linear regression analysis was conducted. The models testing the predictive role of self-determination on life satisfaction are significant for all 3 profile groups. However, being a PPU does not influence this effect, as autonomous and self-determined motives predict life satisfaction to a similar degree regardless of the frequency or quantity of symptoms. Previous research results suggest that the presence of multiple self-determined motivations induces high levels in positive sex related correlates, e.g., life satisfaction. Non-self-determined motivations are in turn associated with non-desirable correlations, e.g., low life satisfaction (Tóth-Király et al., 2019). Specific autonomous sexual motives (Brunell & Webster, 2013; Gravel et al., 2019) are also associated with higher life satisfaction. The scientific literature examining the link between motivation and life satisfaction in addictive behavior (i.e., social network overuse), might also help explain the underlying mechanisms of the predictive effect identified in our research. Findings of Masur et al. (2014) on social network overuse evince that if the needs for competence, autonomy and relationship are unsatisfied, there is a tendency for online overuse in order to gratify corresponding needs. If usage is able to compensate the 3 needs, the level of life satisfaction might increase, but with a risk of developing addictive behavior.

These results emphasize the role of self-determined motivations in differentiating between adaptive and maladaptive outcomes of pornography use (Bóthe et al., 2022).

### ***Limitations***

Because participants were sampled on a voluntary basis, there is a possibility for selection bias, which might have influenced individuals' responses.

One of the main shortfalls in our study is that we have limited the spectrum of variables when addressing the motivation and life satisfaction profile of problematic and non-problematic pornography users.

Future research should explore the role of specific demographic and psychological variables (e.g., age, education, marital/relationship status, difficulties in emotion regulation, loneliness, etc.) related to different PU motivation profiles. Some of them were previously associated with pornography consumption (i.e., age, emotion regulation, loneliness, Cardoso et al., 2022), and were able to differentiate between PPU and non-users. Examining the relationship between these variables using a multi-level analysis combined with person-centered methodology would allow us to create a more nuanced profile of PPU.

### ***Conflict of interests***

The authors declare that the research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

Authors contributed equally to this work.

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