



# Sex Differences in Sexual Satisfaction and Psychological Symptoms in Young Adult Pornography Users

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## Abstract

Research indicates that men and women have different preferences and patterns of sexual behavior and the use of pornographic content. It is commonly found that men use porn more frequently. A recent study found sex differences in motivations behind porn use. Authors speculated that different motivations might lead to different outcomes. The presented study aimed to compare sex differences in the associations between pornography use, sexual satisfaction, and occurrence of psychological symptoms between high and low pornography users sampled from the general population. A sample of 179 participants between the ages of 18 to 37 completed the questionnaire containing questions about demographic data, manner, and frequency of porn use and two psychometric scales: the General Functioning Scale GFQ-58 (assessing broad psychological symptoms) and the Sexual Satisfaction Scale SSC. In general, females in the study obtained higher scores on the General Functioning Scale, presenting more psychological symptoms. Still, when considering the frequency and manner of porn use, it is men in which increased porn use was found to be associated with psychological symptoms. Presented data provide evidence that men and women might have different motivations, leading to varying outcomes of porn use. This further supports the hypothesis that it is not porn that is inherently harmful, but rather why and how you use it.

**Keywords** Pornography · Psychology · Sexual satisfaction · Sex differences · Psychological symptoms

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## Introduction

It is commonly assumed that men use pornography more often than women. Most studies that have compared male and female pornography use have found that more men have experience with pornography and use it more frequently than women (Petersen & Hyde, 2010). The prevalence of pornography use estimates varies from study to study in the general population, with male estimates ranging from 10 to 99% and female estimates ranging from less than 1–88% (Campbell & Kohut, 2017). Pornography use is highly prevalent among both singles and people in relationships. A review of American studies on pornography use among adults in romantic relationships estimated the prevalence of pornography use between 36% and 92% for men and between 6% and 83% for women (Vaillancourt-Morel et al., 2019).

Research indicates that men and women have different preferences and patterns of sexual behavior and the use of pornographic content online. Skowroński and Nowicka (2008) observed that men more willingly choose to use pornographic content available online, while women prefer going on dates with people they met online and having online conversations about sex with strangers. Most women in a 2017 study declared using pornography once a month or less (French & Hamilton, 2017). A higher frequency of use among women was associated with using imagination and memory (remembering pornographic content) during sexual intercourse with a partner. Remembering previously viewed pornographic materials aided in keeping the arousal and achieving orgasm. Even though this can help the sexual satisfaction of women, it also might cause stress and anxiety associated with their sexual abilities (French & Hamilton, 2017). Data suggest that men more often than women masturbate during pornography use (Træen et al., 2010). A 2021 study (Bóthe et al., 2021) identified 8 important motivations underlying pornography use: 1)sexual pleasure, 2) sexual curiosity, 3)emotional distraction/suppression, 4)stress reduction, 5)fantasy, 6)boredom avoidance, 7)lack of sexual satisfaction, and 8)self-exploration. According to the study, men demonstrated higher scores on all motivations, except sexual curiosity and self-exploration. According to the authors, the motivation behind pornography use may contribute to the adaptative or maladaptative outcome.

Among men currently in relationships, regular use of pornography was found to be associated with a lack of interest in sexual contact with a partner, lower satisfaction level in the sexual aspect of the relationship, lower satisfaction regarding partner's feelings, lower estimate of partner's attractiveness, lower curiosity and sexual efficiency (Poulsen et al., 2012; Perry & Davis, 2017) also underline a bigger chance of a breakup in romantic relationships in people who regularly use pornographic content. It primarily applies to relationships started by unmarried men who used pornographic materials online continuously, and long-termly. Among women, the most prevalent problem associated with pornography use is a biased perception of their role in a romantic relationship. A 2020 study (Ashton et al., 2020) on 27 women between the age of 18 and 30 identified negative beliefs associated with the use of pornography. Among them: a partner who wants to gain a man's interest should objectify herself and allow him to all his whims; men have an inherent right to sexual fulfillment, and it is more important than women's satisfaction; men in a relationship are responsible for intimacy and that they should initiate the intercourse.

Pornography use among adolescents was found to be associated with a more promiscuous attitude towards sex, a more rigid perception of sexual gender roles, more incidental (and therefore risky) sexual contacts, and greater sexual aggression (Peter & Valkenburg, 2016). The same review found a correlation between pornography use and weak or troubled family relations.

Gola et al. (2016) found that negative symptoms associated with pornography use predict seeking treatment stronger than simply the quantity of pornography consumption. Researchers argued that frequency might not be a core issue in problematic pornography use. A similar argument was made by Bóthe et al. (2021). The team found that among frequent pornography users, the number of nonproblematic high-frequency use was 3–6 times higher than that of problematic high-frequency use. Similar results were also reported by Brand et al. (Brand et al., 2019). The authors found that some people may experience adverse symptoms accompanied by low-frequency pornography use (Brand et al., 2019).

Campbell & Kohut (2017) argued that most research on the effects of pornography assumes, assesses, and subsequently confirms that pornography is detrimental to relationships and individuals. Despite a general focus on the adverse effects of pornography use, some studies suggest that it might have a neutral or positive impact (Campbell & Kohut, 2017; Grubbs & Kraus, 2021). Ferguson and Hartley (Ferguson & Hartley, 2009) found that pornography use does not contribute to increased sexual assault behavior but rather might have a cathartic effect and help relieve negative emotions. Researchers also reported the subjective positive effects of pornography among users. 58% of Australian respondents indicated a subjective positive effect of pornography on the general attitude towards sex, limiting pressure associated with sex, increased openness, acceptance, and tolerance towards different preferences. Respondents also pointed toward the educational value of pornography, increased interest in sex in long-term relationships, and directed attention towards partners' needs (Rissel et al., 2016). Another study suggests that pornography use may play a role in sexual development (McKee Alan, 2007), helping users to discover their sexual preferences and orientation. It is important to note, however, that some of these positive effects are subjective and declarative. Discrepancies between subjective and objective perspectives are not unheard of in studies on mental health (see Jenkins et al. 2022).

Data on the effects of pornography use are contrary, with some authors (Campbell & Kohut, 2017) pointing towards a confirmation bias in the study's assumptions and designs. Both positive and negative effects are being reported, with recent findings suggesting that adverse effects are not directly related to the simple quantity or frequency of pornography use. This suggests that simply comparing porn users to non-users might not paint the complete picture and there is possibly much to find from internal comparisons of porn users group. Such an approach might help understand why pornography affects some people, while not affecting not others. The presented study aimed to fill the gaps in the knowledge on the effects of pornography use by applying a novel approach - comparisons between different levels of porn consumption in people from the general population. Considering different patterns of pornography use and different motivations reported by previous research, it can be expected that men and women experience different effects of pornography use in

both individual and dyadic aspects. To verify this hypothesis, we aimed to compare sex differences in the associations between pornography use, sexual satisfaction, and the occurrence of psychological symptoms in the general population of pornography users.

## Methods

### Participants and Procedure

In order to reach the largest possible group, participants were recruited via online invitations (Wright, 2005). The questionnaire with a detailed description of the study goals and rationale was published in social media groups and internet forums. 235 people completed the questionnaire. Despite the information that adult age is required to participate in the study, 6 participants declared age below 18. All results from participants under the age of 18 were excluded from the study. Results from participants who declared no use of pornography were also removed.

The final study group ( $n=179$ ) consisted of 57% female ( $n=102$ ) and 43% male participants ( $n=77$ ) between the ages 18 and 37 ( $M=21.3$ ,  $SD=2.7$ ). Declared sexual orientation of participants was heterosexual 63.7% ( $n=114$ ), bisexual 25.1% ( $n=45$ ), homosexual 8.9% ( $n=16$ ) and asexual 2.2% ( $n=4$ ). 39.1% ( $n=70$ ) of participants declared to be single and 60.9% ( $n=109$ ) declared to be in relationships. Only 2 participants declared to be in a formal relationship. All participants were of Polish nationality. 5.6% of participants had primary or vocational education ( $n=10$ ), 68.2% ( $n=122$ ) had secondary education and 26.3% ( $n=47$ ) had higher education. Majority of participants the (64.8%,  $n=116$ ) were university students. 10.6% ( $n=19$ ) were middle or vocational school students, 19.6% ( $n=35$ ) were employed and not studying, 5% ( $n=9$ ) were unemployed and not studying.

To explore the patterns of pornography consumption and factors associated with it, an original online survey was designed. Anonymity was assured to mitigate possible effects of shame on the study. The survey contained questions on the demographic data, frequency and the manner of use of pornographic content (how often, how long), along with two psychometric measures. Questionnaires chosen for this study could possibly tap into both positive and negative effects of pornography use, as they refer not only to problematic symptoms, but also to sexual satisfaction (Plopa, 2017; Styla & Kowalski, 2020). Participants who declared no use of porn were excluded from this part of the study, due to not enough participants in this group to allow for statistical comparisons.

Ethical Approval was obtained from the Bioethics Committee of the Poznan University of Medical Sciences (decision number 271/21, 8 April 2021). All participants filled in informed consent before completing the survey. Despite the information that adult age is required to participate in the study, 6 participants declared age below 18. All results from participants under the age of 18 were excluded from the study.

## Measures

The first section of the survey contained 16 questions regarding general information about participants, participants' relationship history and sexual experience, and information about consumption of pornographic content and behaviors associated with it. Main items aimed at assessment of the frequency of porn and time spent in a single session were answered using a scale from 1 to 5. Range of the answers was prepared on the basis of the answers obtained in the pilot study. For the frequency of use, the scale ranged; (1) less than once a week, (2) once a week, (3) few times a week, (4) daily, (5) few times a day. For the time spent in a single session, the scale ranged from (1) around 5 min, (2) around 15 min, (3) around 30 min, (4) around 1 h, (5) above 1 h. Participants were asked to mark whichever they estimate to be the closest value. A recent study (Dwulit & Rzymiski, 2019) on a group of 4260 Polish students using porn reported that once per week was the most often declared frequency of porn use. Daily use was declared by 10.7%. There was no difference between males and female participants.

Participants were clustered into 2 groups: high users (scores 1 to 3) and low users (scores 4 to 5) for both questions. High frequency was considered daily and a few times a day use. High time spent in a single session was considered half an hour and above. This division was closest to the division by median values and resulted in the even numbers of participants in groups.

The second part of the questionnaire consisted of 2 psychometric scales.

## Psychometric Measures

**General Functioning Questionnaire (GFQ-58)** (Styla & Kowalski, 2020) is the first advanced diagnostic tool designed for the assessment of the overall functioning and severity of a broad spectrum of psychopathological symptoms in both clinical and research applications. Reliability of the scales varies from Cronbach  $\alpha=0.46$  to  $\alpha=0.87$ . Overall score Cronbach  $\alpha=0.92$ . GFQ-58 consists of 58 statements in which participants must indicate the frequency of each symptom in the span of the last 7 days. The questionnaire consists of 14 scales: general score, poor functioning at home and work, poor functioning at home and work, poor relationships, cognitive deficits, addictions, positive symptoms, depression, mania, anxiety, eating disorders, sleep disorders, sexual dysfunctions, somatic symptoms.

**The Sexual Satisfaction Questionnaire (SSQ)** (Plopa, 2017) is a scale designed for a standardized assessment of sexual satisfaction with a partner in a formal and informal relationship. The questionnaire measures 3 factors of sexual satisfaction: closeness, petting, sex, and general satisfaction. The scale consists of 10 items. In every statement, participant marks the level of sexual satisfaction experienced on a scale ranging from 0 to 5.

## Data Analysis

Data analysis was performed using SPSS for Windows v.24.0 (IBM, Armonk, NY). Descriptive statistics were conducted to characterize the sample using means, standard deviations (SD) and percentages. Normality of the distributions was calculated using the Kolmogorov–Smirnov test. Majority of the observed distributions was not normal, thus differences between groups were calculated using nonparametric Mann–Whitney U test.

## Results

Study group characteristics are presented in Table 1. Study group consisted of 65.5% (n=154) percent women and 34.5% men (n=81). Mean age was slightly higher among male participants ( $p=.009$ ,  $U=3411$ ) (Table 2, 3).

Without taking into account the manner of porn use, sex differences in GFQ-58 and SSC results were found in the study group. Men declared using porn more frequently ( $p<.001$ ,  $U=1671$ ), but there was no difference in how much time they spent in a single session ( $p=.465$ ,  $U=4084$ ). There was no significant difference in the frequency of masturbation during porn use between men and women ( $p=.542$ ,  $U=4128$ ). Females scored significantly higher on the GFQ-58 general score ( $p=.006$ ,  $U=2431$ ) and the following scales: cognitive symptoms ( $p=.006$ ,  $U3217,5$ ), depression ( $p=.008$ ,  $U=3157,5$ ), anxiety ( $p=.002$ ,  $U=2975$ ), eating disorders ( $p>.001$ ,

**Table 1** Study group characteristics

	Women	Men	<i>p</i>
<b>N=179</b>	102 (57%)	77 (43%)	
<b>Age</b>	21.3	22.5	0.009*
<b>mean</b>	(18–34)	(18–37)	
<b>(range)</b>	2.7	3.2	
<b>SD</b>			
<b>How often do you use pornographic content?</b>	1.72	3.04	<0.001**
<b>(1–5 scale)</b>	(1–4)	(1–5)	
<b>mean</b>	0.8	1.1	
<b>(range)</b>			
<b>SD</b>			
<b>How much time do you spend on using pornographic content?</b>	1.72	1.84	0.465
<b>(1–5 scale)</b>	(1–4)	(1–4)	
<b>mean</b>	0.8	0.8	
<b>(range)</b>			
<b>SD</b>			
<b>Do you masturbate while watching pornographic content?</b>	3.2	3.4	0.542
<b>(1–5 scale)</b>	(1–4)	(2–4)	
<b>mean</b>	0.9	0.7	
<b>(range)</b>			
<b>SD</b>			

\*Significant at  $\alpha<0.05$

\*\*Significant at  $\alpha<0.001$

**Table 2** SSQ results referring to following question “how much time do you spend using porn in a single session”

Variable	Men			Women		
	low	high	<i>p</i>	low	high	<i>p</i>
<b>General score mean (SD)</b>	34.24 (13.98)	37.27 (8.53)	0.223	36.40 (8.74)	37.21 (9.876)	0.141
<b>Closeness mean (SD)</b>	19.29 (8.86)	20.73 (5.64)	0.938	21.67 (6.17)	21.58 (6.30)	0.525
<b>Petting mean (SD)</b>	7.10 (2.84)	7.82 (1.47)	0.755	7.38 (1.66)	7.74 (1.77)	0.960
<b>Sex mean (SD)</b>	7.86 (2.92)	8.73 (2.28)	0.755	7.35 (2.76)	7.89 (3.12)	0.355

\* significant at  $\alpha < 0.05$

$U=2665,5$ ) and sleep disorders ( $p=.003$ ,  $U=3065,5$ ). Males had significantly lower results on SSC closeness scale ( $p=.038$ ,  $U=875$ ). The rest of the differences were not significant.

Tables 2 and 4 present results of the SSQ between high and low users according to “How much time do you spend using porn in a single session?” and “How often do you use porn? (Tables 2 and 4 respectively).“ None of the differences in SSQ results were statistically significant.

Table 3 presents results of GFQ – 58 results according to time spent using porn in a single session. Differences in the general score between the high and low groups were not significant for both men ( $p=.56$ ,  $U=461.5$ ) and women ( $p=.325$ ,  $U=864.5$ ). In women, the only significant difference between high and low groups was found for the cognitive deficits scale, in which the high group obtained a higher mean score ( $p=.045$ ,  $U=1085.5$ ). In men, high group obtained higher scores for positive symptoms ( $p=.011$ ,  $U=524.5$ ), anxiety ( $p=.042$ ,  $U=562$ ) and sleep disorders scales ( $p=.044$ ,  $U=545$ ).

Table 5. presents results GFQ – 58 results according to the frequency of porn use. In women, no significant differences between low and high groups were obtained. In men, the high group obtained higher scores for poor functioning at home and work ( $p=.037$ ,  $U=347$ ) and lack of entertainment ( $p=.012$ ,  $U=285$ ).

## Discussion

Our results replicated previous findings that men use pornography more often than women (Petersen & Hyde, 2010). However, there were no significant sex differences in time spent using porn in a single session or frequency of masturbation while using porn. Masturbation accompanies porn use most of the time in both males and females, suggesting that sexual pleasure might be the most common motivation for using porn (Bóthe et al., 2021).

**Table 3** Results GFQ—58 results according to “how much time do you spend using porn in a single session”

Variable	Men		<i>p</i>	Women		<i>p</i>
	low	high		low	high	
<b>General score</b>						
<b>mean</b>	118.04	125.22	0.56	130.07	132.81	0.325
<b>(SD)</b>	(21.40)	(20.45)		(24.95)	(20.08)	
<b>Poor functioning at home and at work</b>						
<b>mean</b>	11.31	12.02	0.068	11.16	11.75	0.204
<b>(SD)</b>	(1.69)	(2.06)		(2.24)	(2.3)	
<b>Lack of entertainment</b>						
<b>mean</b>	11.35	12.10	0.097	11.08	11.96	0.114
<b>(SD)</b>	(2.24)	(1.93)		(2.17)	(2.56)	
<b>Poor relationships</b>						
<b>mean</b>	9.59	9.69	0.834	10.21	9.80	0.507
<b>(SD)</b>	(2.61)	(2.48)		(2.97)	(2.69)	
<b>Cognitive deficits</b>						
<b>mean</b>	6.45	7.55	0.137	7.71	8.84	0.045*
<b>(SD)</b>	(2.26)	(3.13)		(3.37)	(2.67)	
<b>Addictions</b>						
<b>mean</b>	5.75	6.02	0.614	6.27	5.71	0.240
<b>(SD)</b>	(2.18)	(2.32)		(2.63)	(2.50)	
<b>Positive symptoms</b>						
<b>mean</b>	8.06	8.84	0.011*	9.13	9.13	0.513
<b>(SD)</b>	(3.47)	(2.19)		(3.02)	(2.14)	
<b>Depression</b>						
<b>mean</b>	12.77	12.80	0.885	14.06	14.25	0.683
<b>(SD)</b>	(2.93)	(2.77)		(4.02)	(3.40)	
<b>Mania</b>						
<b>mean</b>	12.88	13.44	0.672	13.56	14.48	0.253
<b>(SD)</b>	(3.70)	(4.41)		(4.16)	(4.25)	
<b>Anxiety</b>						
<b>mean</b>	15.66	17.35	0.042*	19.26	18.80	0.747
<b>(SD)</b>	(4.46)	(4.43)		(5.92)	(5.42)	
<b>Eating disorders</b>						
<b>mean</b>	4.63	4.90	0.466	6.20	6.05	0.604
<b>(SD)</b>	(2.52)	(2.37)		(2.45)	(2.49)	
<b>Sleep disorders</b>						
<b>mean</b>	6.84	8.38	0.044*	10.02	9.16	0.221
<b>(SD)</b>	(2.70)	(3.40)		(4.08)	(4.04)	
<b>Sexual dysfunctions</b>						
<b>mean</b>	3.50	3.62	0.945	3.78	4.14	0.514
<b>(SD)</b>	(1.31)	(1.62)		(1.72)	(2.02)	
<b>Somatic symptoms</b>						
<b>mean</b>	9.09	8.76	0.635	9.65	9.20	0.642
<b>(SD)</b>	(2.61)	(2.12)		(3.00)	(2.41)	

\* significant at  $\alpha < 0.05$ 

The main finding of the study is the differences in psychopathology symptoms between low and high male pornography users for both “frequency of use” and “time spent in a single session” criteria. In general, females in the study obtained higher scores on the GFQ-58. However, when considering the manner of porn use, it is men who showed increased psychological symptoms associated with higher porn use.



**Table 4** SSQ results according to “how often do you use porn”

Variable	Men			Women		
	low users	high users	<i>p</i>	low users	high users	<i>p</i>
<b>General score mean (SD)</b>	34.48 (13.18)	38.14 (8.75)	0.261	35.15 (9.60)	37.36 (9.16)	0.526
<b>Closeness mean (SD)</b>	19.36 (8.45)	21.29 (5.31)	0.624	20.55 (6.75)	22.00 (6.01)	0.218
<b>Petting mean (SD)</b>	7.12 (2.65)	8.14 (1.46)	0.964	7.30 (1.81)	7.64 (1.68)	0.415
<b>Sex mean (SD)</b>	8.00 (2.77)	8.71 (2.63)	0.324	7.30 (3.29)	7.72 (2.82)	0.426

\* significant at  $\alpha < 0.05$

No significant differences between high and low groups were found among females, with the exception of the cognitive deficit scale results being higher in high female pornography users for the “time spent in a single session” criterion. This finding is in line with recent data suggesting more adverse effects of using porn for men (Sommet & Berent, 2022). In males, more frequent users scored higher on GFQ-58 poor functioning at home and work and lack of entertainment scales. Both scales describe different aspects of the same type of functioning: a general lack of satisfaction in social relationships, work, and home functioning, along with no interest in hobby or culture. Also, in males, longer time spent using porn in a single session was associated in high users with higher scores on the anxiety, sleep disorders and positive symptoms scales. The anxiety scale taps into obsessive thoughts, worrying, increased autonomic nervous system activity, social anxiety, and specific situational anxiety. Sleep disturbances are a common comorbidity of anxiety and depressive symptoms (Alvaro et al., 2013). GFQ-58 positive symptoms scale taps into the presence of hallucinations and delusions, and paranoid and grandiose ideas. In a study by Bóthe et al. (2021), motivation for porn use relating to stress reduction was moderately, and positively associated with problematic porn use, while motivations relating to boredom avoidance, emotional avoidance, fantasy, and sexual pleasure were positively, weakly associated with problematic porn use. Authors suggest that problematic porn use and its adverse effects might be better explained by motivation than the frequency of porn use. Gola et al. (Gola et al., 2016) came to a similar conclusion. In their study, negative symptoms associated with porn use predicted seeking treatment more strongly than the mere quantity of porn consumption. The relationship between experiencing psychological symptoms and porn use is most likely bidirectional, similarly to masturbation, which was found to be a cause for distress and a coping mechanism at the same time in heterosexual men (Leonard, 2010).

Despite the fact that motivations were not directly assessed in the presented study, the increased psychological symptoms among male high users: poorer social functioning, anxiety, stress, and general lack of satisfaction, seem to be in line with the motivations associated with problematic porn use listed by Bóthe et al. (Bóthe et al.,

**Table 5** Results GFQ—58 results according to “how often do you use porn”

Variable	Men			Women		
	low	high	<i>p</i>	low	high	<i>p</i>
<b>General score</b>						
<b>mean</b>	114.38	124.22	0.116	130.76	134.10	0.527
<b>(SD)</b>	(15.82)	(21.64)		(22.66)	(21.72)	
<b>Poor functioning at home and at work</b>						
<b>mean</b>	10.88	11.95	0.037*	11.39	11.76	0.448
<b>(SD)</b>	(1.63)	(1.96)		(2.22)	(2.53)	
<b>Lack of entertainment</b>						
<b>mean</b>	10.60	12.09	0.012*	11.40	12.04	0.446
<b>(SD)</b>	(1.59)	(2.08)		(2.19)	(2.42)	
<b>Poor relationships</b>						
<b>mean</b>	9.25	9.75	0.422	10.05	9.79	0.930
<b>(SD)</b>	(2.72)	(2.47)		(2.82)	(2.83)	
<b>Cognitive deficits</b>						
<b>mean</b>	6.44	7.30	0.333	8.25	8.52	0.565
<b>(SD)</b>	(2.39)	(2.96)		(3.22)	(2.50)	
<b>Addictions</b>						
<b>mean</b>	5.40	6.03	0.203	5.81	6.48	0.429
<b>(SD)</b>	(2.29)	(2.25)		(2.47)	(2.84)	
<b>Positive symptoms</b>						
<b>mean</b>	8.13	8.63	0.933	8.92	9.79	0.175
<b>(SD)</b>	(1.40)	(3.02)		(2.43)	(2.93)	
<b>Depression</b>						
<b>mean</b>	12.33	12.90	0.798	14.05	14.52	0.662
<b>(SD)</b>	(1.88)	(3.00)		(3.66)	(3.79)	
<b>Mania</b>						
<b>mean</b>	13.50	13.14	0.754	13.92	14.46	0.402
<b>(SD)</b>	(4.21)	(4.13)		(4.42)	(3.51)	
<b>Anxiety</b>						
<b>mean</b>	15.87	16.88	0.937	19.05	18.88	0.797
<b>(SD)</b>	(2.53)	(4.86)		(5.61)	(5.80)	
<b>Eating disorders</b>						
<b>mean</b>	4.56	4.85	0.936	6.01	6.48	0.468
<b>(SD)</b>	(1.93)	(2.53)		(2.44)	(2.53)	
<b>Sleep disorders</b>						
<b>mean</b>	7.62	7.80	0.523	9.46	9.88	0.766
<b>(SD)</b>	(3.83)	(3.07)		(3.98)	(4.38)	
<b>Sexual dysfunctions</b>						
<b>mean</b>	3.25	3.66	0.393	4.10	3.56	0.188
<b>(SD)</b>	(1.24)	(1.56)		(1.95)	(1.66)	
<b>Somatic symptoms</b>						
<b>mean</b>	7.88	9.14	0.057	9.43	9.36	0.994
<b>(SD)</b>	(1.40)	(2.43)		(2.71)	(2.70)	

\* significant at  $\alpha < 0.05$ 

2021). A study by Watt and Ewing (2010) found significantly higher sexual boredom in men compared to women. Sexual boredom was found to be associated with a negative affective state, masturbation, and compulsive sexual behavior (de Oliveira et al., 2021), suggesting that porn use and masturbation might be a coping mechanism in men (boredom avoidance, as described by Bóthe et al. (2021)). This might at least in

part explain increased GFQ-58 lack of entertainment scale results among male high users in the presented study.

Higher anxiety among male porn users might explain the previously described association between porn use and dissatisfaction with penis size (and sexual dissatisfaction in a broader sense) (Cranney, 2015). No association between porn use and dissatisfaction with breast size was found in females (Cranney, 2015) speculates that women might have more chances of making objective comparisons between their and other women's breast sizes. They also have an objective indicator in bra size. Non-gay men might have limited opportunities for such comparisons (especially for erected penis size) outside of pornography, so their perception might be based on nonrepresentative portrayals in pornography. Higher anxiety might be both a cause and effect when it comes to pornography consumption. Unrealistic comparisons, not only for penis/breast size, might induce anxiety in high users. Also, high users might be primarily prone to anxiety and seek emotional regulation in porn and masturbation, ironically finding even more anxiety resulting from upwards comparisons. Decreased sexual self-competence in men can cause an increase in porn use and withdrawal from sexual relationships with partners, as they might be perceived as threatening.

Despite previously reported (Miller et al., 2019; Sommet & Berent, 2022; Wright et al., 2021) detrimental effects of porn use on sexual performance and satisfaction, no such associations were found in the presented study. However, it is important to note that the GFQ-58 sexual dysfunctions scale contains only 2 items and is the second weakest of the whole questionnaire (Styla & Kowalski, 2020). This scale alone might not have been sufficient to tap potential sexual dysfunctions among participants. A 2019 (Miller et al., 2019) study argued that the association between porn use and sexual satisfaction might not be straightforward but mediated by masturbation frequency.

Results obtained in the study seem to indirectly support the hypothesis that different motivations can lead to different effects of porn use (Bóthe et al., 2021). Sex differences in motivations and outcomes of porn use suggest that men and women use porn in a different manner and for a different purposes. Sommet and Berent's (2022) longitudinal study found that in men, a higher frequency of porn use and increased porn use over time were associated with lower sexual self-competence, impaired sexual functioning, and decreased sexual satisfaction. Among women, higher and increasing porn use was associated with higher sexual self-competence, improved sexual functioning, and sexual satisfaction (in some aspects). A result that authors found ironic, considering that porn in a male-dominated industry aimed at a mostly male audience.

The presented study adds complementary results, showing increased psychological symptoms consistent with data available in the literature among male high users, but not females. The study also suggests that it is not necessarily porn that is inherently harmful, but rather why and how you use it is causing the adverse effects. This means that perhaps pornography use and motivation for use should be considered a mediating factor in future studies on the effects of pornography on mental health, or maybe even a symptom rather than the cause. Pornography addiction/ problematic use defined as "high-frequency viewing" may be reductive and not reflect the

complexity of the phenomenon. Therapeutic interventions therefore should focus not merely on behavioral control but include motivation for pornography use, its function as a coping mechanism, as well as present psychological deficits and inadequate attitudes around sexuality and sex, contributing to the occurrence of the negative effects of pornography use on psychological well-being.

Possible study limitations include limited ability to generalize the study results due to non-representative sample, consisting mostly of young-adult university students. The assessment of pornography use patterns was self-described and did not include the type of pornography used by participants.

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s12119-023-10072-4>.

## Declarations

**Conflict of Interest** The authors confirm that there are no known conflicts of interest associated with this publication. There has been no significant financial support for this work that could have influenced its outcome.

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