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Motives for pornography use and women's sexual wellbeing: Insights from a 42-country study

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FULL-LENGTH REPORT



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ABSTRACT

Background and aims: Despite a growing body of research on pornography use among women, there is a lack of understanding of the problematic versus non-problematic nature. The current study aimed to investigate the relationship between women's motivations for pornography use and sexual wellbeing using a cross-sectional, self-report survey design among participants from 42 countries. **Methods:** The total sample included 82,243 participants, of whom 46,874 (57.0%) identified as women and were analyzed. The participants' age averaged at $M = 29.67$ years, with a standard deviation of $SD = 10.11$. Participants were asked to complete a questionnaire assessing their motivations for pornography use, as well as measures of sexual functioning, sexual desire, and sexual satisfaction. **Results:** Study results suggest that across cultures, women's motivations for pornography use are associated with their sexual wellbeing. Specifically, when women reported using pornography for their own pleasure or sexual curiosity, it was associated with fewer sexual functioning problems and higher sexual desire. Conversely, when women reported using pornography due to a lack of sexual satisfaction in their relationships, it was associated with more sexual functioning problems. **Discussion and conclusions:** These findings highlight the need to consider the multifaceted nature of pornography use among women, including the usage motives, to fully understand associations with sexual wellbeing. Additionally, the study emphasizes the importance of conducting further research utilizing longitudinal designs, to establish the directionality between pornography use motivations and sexual wellbeing among women.

KEYWORDS

pornography, motivations, women, sexual wellbeing, cultural differences

INTRODUCTION

The rise in global use of pornography may vary across countries (PornHub, 2023). In the United States (US), roughly 46% of adult men and 16% of adult women reported pornography use within the previous week (Regnerus, Gordon, & Price, 2016). Similarly, in Poland, 47% of men and 27% of women used pornography in the previous month (Lewczuk, Wójcik, & Gola, 2022); in Australia, 76% of adult men and 41% of adult women reported pornography use within the previous year (Rissel et al., 2017). A recent study from the US also found that pornography is highly prevalent, with 94.1% of men and 86.9% of women reporting lifetime pornography use (Herbenick et al., 2020). While most studies indicate a higher prevalence of pornography use among men than women, the prevalence and incidence of women using pornography in various world regions may be increasing (Wright, Bae, & Funk, 2013). According to one of the most popular pornography site's statistical reports (Pornhub Insights, 2021), 35% of visitors in 2021 were women, with an increase of 1% from the year before. In 2023 (PornHub, 2023), the proportion of female viewers grew to 36%, an increase of 1% compared to 2021.

Previous research has suggested that the use of pornography is not only characterized by a large gender gap, but also that men and women tend to use pornography differently. For example, compared to men, women are significantly more likely to view pornography with a sexual partner and prefer more softcore pornographic content (Carroll, Busby, Willoughby, & Brown, 2017; Hald, 2006). The potential effects of pornography use on sexual wellbeing can also be highly gender-specific (Sommet & Berent, 2022), with studies showing that men's pornography use is often negatively associated with their sexual competence and functioning (Berger et al., 2019; Sommet & Berent, 2022), while women's pornography use has been found unrelated to, or even positively associated with, their sexual functioning and satisfaction (Berger et al., 2019; Dwulit & Rzymiski, 2019; Štulhofer, Buško, & Landripet, 2010; Vaillancourt-Morel et al., 2019, 2020). Despite research suggesting differences in the patterns and correlates of pornography use among men and women, more empirical attention has been paid to understanding pornography use among men (as opposed to women), and especially men from Western, Educated, Industrialized, Rich, and Democratic (WEIRD) countries (Klein, Savaş, & Conley, 2022). Thus, the current study aimed to further the understanding of pornography use among women worldwide, by examining the motives for pornography use among women and how these motives may relate to their sexual well-being, including sexual desire, sexual functioning, and sexual satisfaction, utilizing a sample from 42 countries.

Potential effects of pornography use on Women's sexual wellbeing

Research exploring the correlates, moderators, and potential consequences of viewing pornography has increased in recent years, primarily focusing on the question of whether viewing pornography is related to better or worse sexual wellbeing. Sexual wellbeing in the current study includes sexual desire, functioning, and satisfaction, which serve as key indicators of an individual's overall sexual health and contentment (Mitchell, Lewis, O'Sullivan, & Fortenberry, 2021). Sexual desire refers to interest in sexual activity (Spector, Carey, & Steinberg, 1996). Research on the association between pornography use and sexual desire among women has shown that these two are often positively associated (Krejčová, Chovanec, Weiss, & Klapilová, 2017; Leonhardt, Busby, & Willoughby, 2021; Vaillancourt-Morel et al., 2020; Willoughby & Leonhardt, 2020). However, it remains unclear how pornography use is associated with women's sexual desire.

Sexual functioning refers to the stages of the sexual response cycle, i.e., sexual desire, arousal (erection, lubrication), and orgasm. In general, pornography use has been associated with better sexual functioning in women but not in men (Komlenac & Hochleitner, 2022; Sommet & Berent, 2022). For women, frequency of pornography use has been correlated with better sexual functioning (Bóthe, Vaillancourt-Morel, & Bergeron, 2022; Pawlikowska et al., 2022),



and specifically lower arousal difficulties (Vaillancourt-Morel, Rosen, Štulhofer, Bosisio, & Bergeron, 2021), less orgasmic difficulties in both masturbation and partnered sex (McNabney, Hevesi, & Rowland, 2020), and less sexual distress (Bóthe, Vaillancourt-Morel, & Bergeron, 2022).

Sexual satisfaction involves affective responses arising from one's subjective evaluation of the positive and negative dimensions associated with a sexual relationship (Kalichman & Rompa, 1995). Individuals who report feeling sexually satisfied in relationships experience various positive feelings of pleasure and excitement regarding their sex lives (van Kolkhoorn, 2018). Previous studies have addressed the question of how pornography use relates to sexual satisfaction and reported inconsistent findings. While for some women, pornography use was associated with higher sexual satisfaction (McNabney et al., 2020), while for other women, pornography use was associated with more sexual dissatisfaction (Blais-Lecours, Vaillancourt-Morel, Sabourin, & Godbout, 2016). In a study conducted among 1,500 adults in the United States, findings revealed a negative curvilinear relationship between personal pornography viewing and sexual satisfaction, with no significant gender differences observed. However, the negative acceleration was slightly more pronounced for men than for women (Wright, Bridges, Sun, Ezzell, & Johnson, 2018). Finally, other studies found that more pornography use was associated with lower sexual satisfaction for men, yet not for women (Leonhardt & Willoughby, 2019; Vaillancourt-Morel et al., 2021).

Overall, findings about the potential associations between pornography use and women's sexual wellbeing remain mixed. The complexities of pornography use (e.g., frequency, perceived compulsiveness, content viewed, honesty about use, context of use, and reasons for using) should be further explored. For example, in a recent study, while the frequency of pornography use had a negative association with sexual functioning problems in both men and women, problematic pornography use had a positive association with sexual functioning problems in men and women, suggesting compulsivity should be considered when understanding the link between pornography use and sexual functioning (Bóthe, Tóth-Király, Griffiths, et al., 2021). Other studies also suggest the associations between pornography use and sexual satisfaction are complex. Recent findings suggest that while pornography use was not directly associated with sexual satisfaction among men and women, perceiving pornography as a primary source of sexual information, preferring pornography over partnered sexual experiences and the devaluation of sexual communication mediated the association between pornography use and sexual satisfaction among both men and women (Wright, Sun, Steffen, & Tokunaga, 2019). On the same token, occasional pornography use was associated with higher sexual satisfaction for both men and women, while consumption with any degree of regularity was associated with lower satisfaction (Wright, Miezán, & Sun, 2018).

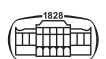
Complex findings regarding associations between pornography use and women's sexual wellbeing underscore the need to transcend traditional frameworks focused solely

on the exposure or frequency of pornography use. This highlights the importance of capturing nuanced aspects of pornography viewing. Accordingly, our study aimed to offer a more comprehensive understanding of pornography use among women by investigating the association between motives for pornography use and women's sexual desire, functioning, and satisfaction. Theoretically, we based our study on the ACE (Antecedents–Context–Effects) Model (Campbell & Kohut, 2017), which calls for a more intricate exploration of the variables that are responsible for the potential effects of pornography use. The ACE model suggests that pornography use is driven by a variety of possible antecedents (e.g., individual differences, culture, gender) that is also determined by the specific contexts of use (e.g., frequency, solitary/joint use, hidden use, content of use, different motives for use), which in turn result in myriad possible consequences (e.g., positive, negative, neutral). Guided by the ACE Model, the current study sought to understand if and how the reasons women use pornography were associated with their sexual wellbeing.

Motives for pornography use and sexual wellbeing

Relatively little attention has been paid to why people use pornography in past studies (e.g., Bóthe et al., 2021; Grubbs, Kraus, & Perry, 2019). The motives for using pornography are various, and include using pornography for sexual stimulation (masturbation), as “foreplay” (lovemaking with their partners), for curiosity, for reducing boredom, for reducing stress, for distraction, for enhancing sexual fantasies, for reducing feelings of loneliness, because of relationship difficulties or lack of sexual satisfaction, to educate oneself, to “socialize” with people who share one's interests, to increase sex drive, to enhance sexual performance, for social reasons (such as peer pressure, or to “fit” in), or due to deficient of relational and in emotional skills (Bridges & Morokoff, 2011; Bóthe, Tóth-Király, Bella et al., 2021; Burtáverde, Jonason, Giosan, & Ene, 2021; Esplin, Hatch, Hatch, Deichman, & Braithwaite, 2021; Frable, Deborrah et al., 1997; Grubbs, Wright, et al., 2019; Paul & Shim, 2008).

Although the research on pornography use motivation is relatively limited, findings point to some gender differences, with men more likely to use pornography for sexual pleasure, experiencing fantasies, relief of boredom, sexual satisfaction, emotional distraction, and stress reduction and women more likely to be motivated by sexual curiosity and self-exploration (Bóthe, Tóth-Király, Bella, et al., 2021). Studies exploring motivations for pornography use among women have found that they consume pornography to intensify sexual arousal and for masturbation, to satisfy their sexual curiosity, to learn more about sex, and as a way to enrich sexual experiences with their partner (Bóthe, Tóth-Király, Bella, et al., 2021; Emmers-Sommer, 2017). According to a recent systematic review of qualitative research exploring women's pornography use, women reported using pornography to feel sexually empowered, to enhance sexual arousal, for masturbation purposes, because



of curiosity about sexual practices, because they wanted to improve their sexual practices in their relationships, and as a mean of rebellion against being considered a “good girl” (Litsou, Graham, & Ingham, 2021).

The motivational basis of pornography use has not yet been widely examined, but the current study draws from the richness of research in the field of sexual motivations, which provides invaluable insights into larger questions of interest about the mechanisms underlying sexual behaviors and patterns. The literature regarding sexual motives shows that different motives are associated with different sexual and relational outcomes. Specifically, engaging in sexual activity to pursue one’s own pleasure or enhance a shared sexual experience with one’s partner is often associated with greater intimacy and sexual wellbeing. However, engaging in sex for negative or avoidant reasons (i.e., to prevent tension and conflict or cope with negative feelings) is often associated with lower levels of sexual wellbeing (Impett, Peplau, & Gable, 2005; Muise, Impett, & Desmarais, 2013). Based on these studies, we hypothesized that specific motives for using pornography would have different associations with women’s sexual wellbeing. For example, using pornography for negative and avoidant motives (i.e., emotional avoidance, stress reduction, lack of sexual satisfaction) would be negatively associated with women’s sexual wellbeing, yet using pornography for positive and approach motives (e.g., sexual curiosity, sexual pleasure) would be positively associated with their sexual wellbeing.

Preliminary findings from a study conducted among 265 mixed-sex couples suggest that motives for pornography use may be associated with measures of sexual wellbeing. Specifically, men’s greater emotional avoidance motivation was related to their own lower sexual functioning and greater sexual distress, while their higher sexual curiosity motivation was related to higher partnered sexual frequency, their own greater sexual satisfaction and functioning, and lower sexual distress. Women’s pornography use motivation was not associated with their sexual satisfaction, functioning, or distress (Bóthe, Vaillancourt-Morel, et al., 2022). However, only four pornography use motivations were assessed in this study and the sample was limited to partnered individuals.

In our analysis of the associations between motivations for pornography use and sexual wellbeing, we included several covariates for specific purposes (problematic pornography use, pornography use frequency, age, religiosity, and relationship status). Problematic pornography use helps to account for potential negative consequences, allowing for isolation of the links between motivations and sexual functioning and desire (Bóthe, Tóth-Király, Bella, et al., 2021). Pornography use frequency helps to account for how motivations may differ across usage levels (Bóthe, Tóth-Király, Bella, et al., 2021). Age adjusts for age-related differences in the effects of pornography use (Dwulit & Rzymiski, 2019), while religiosity helps to control for aspects of bi-directional associations between pornography use and religious beliefs including effects of moral incongruence

(Grubbs, Exline, Pargament, Hook, & Carlisle, 2015; Grubbs, Perry, et al., 2019; Mestre-Bach, Blycker, Chiclana Actis, & Brand, 2021). Relationship status accounts for potential differences in pornography use between individuals in and out of relationships (Dwulit & Rzymiski, 2019). The inclusion of these covariates in statistical models should decrease potential confounding effects of the aforementioned variables.

The present study

Despite the growing prevalence of pornography use among women (Pornhub Insights, 2021; Wright et al., 2013), little research has been conducted to further the understanding of their motivation for pornography use. Research on the potential associations between pornography use and women’s sexual wellbeing shows mixed results, underscoring the need to move beyond a simplistic framework of examining the exposure or frequency of pornography use and capture the complexity of pornography viewing. Thus, the present study examined the associations between eight different pornography-use motivations and sexual wellbeing among women from a 42-country sample, using a preregistered study design (<https://doi.org/10.17605/OSF.IO/K34A6>). We hypothesized that negative or avoidant motives for using pornography (i.e., boredom avoidance, lack of sexual satisfaction, emotional distraction and suppression, and stress reduction) would be associated with lower levels of sexual wellbeing (less sexual desire, more sexual functioning problems, less sexual satisfaction), whereas positive and approach motives for using pornography (sexual pleasure, sexual curiosity) would be associated with higher levels of sexual wellbeing among women (higher sexual desire, fewer sexual functioning problems, and more sexual satisfaction).

METHOD

Procedure

The study is part of the International Sex Survey (ISS). The ISS is a cross-sectional, self-report study in 42 countries¹ (see the preregistered study design: <https://osf.io/uyfra/>). The English survey battery was translated into an additional 25 other languages, following a pre-established translation procedure for cross-cultural studies (Beaton, Bombardier, Guillemin, & Ferraz, 2000). Data were collected between October 2021 and May 2022. Participants who responded to the study advertisements completed an anonymous survey

¹Egypt, Iran, Pakistan, and Romania were included in the study protocol paper as collaborating countries (Bóthe, Koós, et al., 2022); however, it was not possible to get ethical approval for the study in a timely manner in these countries. Chile was not included in the study protocol paper as a collaborating country (Bóthe, Koós, et al., 2022) as it joined the study after publishing the study protocol. Therefore, instead of the planned 45 countries (Bóthe, Koós, et al., 2022), only 42 individual countries are considered in the present study, see details at <https://osf.io/n3k2c/>.



on the Qualtrics Research Suite, which took approximately 25–45 min. The list of all collaborating countries, the detailed description of the translation and data collection procedures, and the eligibility criteria are described in the study protocol (Böthe, Koós, et al., 2022). For transparency, all published papers and conference presentations using the ISS dataset can be seen on the related OSF pages (publications: <https://osf.io/jb6ey/>; conference presentations: <https://osf.io/c695n/>).

Participants

After data cleaning (see detailed data cleaning procedure: <https://doi.org/10.17605/OSF.IO/DK78R>), 82,243 participants ($M_{age} = 32.39$ years, $SD = 12.52$) were included in the final dataset. Concerning participants' gender, 32,549 (39.6%) were men, 46,874 (57.0%) were women, and 2,783 (3.4%) were gender-diverse individuals. In the present study, we focused on individuals who identified as women (46,874 participants; Table 1).

Measures

Motivations for pornography use were assessed using the Pornography Use Motivations Scale (PUMS; Böthe, Tóth-Király, Bella, et al., 2021; Koós et al., 2024), a 24-item scale designed to assess reasons for pornography use. Participants indicate how often they use pornography for each reason (1 = never to 7 = always). The measure consists of eight subscales (with three items in each scale): (1) sexual pleasure (e.g., "I watch porn to arouse myself sexually"), (2) sexual curiosity (e.g., "I watch porn to learn new things"), (3) fantasy (e.g., "I watch porn because I can be a part of things that I cannot experience in real life"), (4) 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"). For the current sample, internal consistencies for the subscales were as follows: sexual pleasure ($\alpha = 0.86$), sexual curiosity ($\alpha = 0.88$), fantasy ($\alpha = 0.81$), boredom avoidance ($\alpha = 0.87$), lack of sexual satisfaction ($\alpha = 0.85$), emotional distraction and suppression ($\alpha = 0.88$), stress reduction ($\alpha = 0.86$), and self-exploration ($\alpha = 0.90$).

Sexual functioning was measured using the Arizona Sexual Experiences Scale (ASEX; McGahuey et al., 2000). The ASEX asks participants to report on core elements of sexual functioning, including sex drive, arousal, vaginal lubrication, ability to reach orgasm, and satisfaction with orgasm. Sample questions include: "How strong is your sex drive?" and "How easily are you sexually aroused (turned on)?" The reliability of the ASEX in the current study was acceptable ($\alpha = 0.79$).

Sexual desire was measured using the Sexual Desire Inventory-2 (SDI-2; Spector et al., 1996) which is a 14-item measure designed to assesses sexual desire. The SDI-2 was

included alongside the ASEX to provide a more comprehensive assessment of sexual desire. Participants were asked to report on their interest in sexual activity, including one's thoughts on approaching or being responsive to sexual stimuli. The SDI-2 includes questions on solitary sexual desire (e.g., "How important is it for you to fulfill your desires to behave sexually by yourself?") and partnered sexual desire (e.g., "How strong is your desire to engage in sexual activity with a partner?"). In the current study, we used a total score to assess the overall sexual desire (solitary and partnered). The reliability of the SDI-2 in the current study was excellent ($\alpha = 0.90$).

Sexual satisfaction was measured using the Global Measure of Sexual Satisfaction (GMSEX; Lawrance & Byers, 1995). Participants rated their sexual relationships on five 7-point bipolar scales: good-bad, pleasant-unpleasant, positive-negative, satisfying-unsatisfying, valuable-worthless. Scores varied from 5 to 35, with higher scores indicating greater sexual satisfaction. The reliability of the GMSEX in the current study was excellent ($\alpha = 0.96$).

Control variables. Pornography use frequency was measured based on a single-item question (Böthe et al., 2024). Respondents indicated their frequency of online pornography use over the past year on a 10-point scale (0 = "never", 10 = "more than 7 times a week").

Problematic pornography use was measured using the Problematic Pornography Consumption Scale (PPCS; Böthe et al., 2024) which is an 18-item scale designed to assess past-six-month problematic pornography use. Respondents indicated answers on a 7-point scale (1 = "never"; 7 = "all the time"). The reliability of the PPCS in the current study was excellent ($\alpha = 0.93$).

Sociodemographic and Sexuality-related Questions. Sociodemographic questions (e.g., gender, sexual orientation, level of education, relationship status, religiosity) (Grubbs, Kraus, & Perry, 2019), and sexuality-related questions were included in the ISS (Böthe, Koós, et al., 2022). Participants were provided with a definition of sexual experience before answering these questions.²

The translation of all measures can be found at (<https://osf.io/jcz96/>).

Statistical analyses

Before the primary analyses, we examined whether participants' countries (nested within 42 countries) accounted for a significant portion of the variance in sexual functioning problems and sexual desire and satisfaction. To do so, we compared the fit (by the *anova* function in R) of intercept-only linear models (i.e., not nested within countries; *lm* function) with intercept-only mixed effect models (i.e., with

²Definition of sexual experiences with a partner used in the study: "Sexual experience with a partner is defined as any activity or behaviour (excluding childhood sexual games or possible sexual abuse) that stimulates or arouses a person with the intent to produce an orgasm or sexual pleasure. Think about any kind of sexual experience with a partner."



Table 1. Participants' sociodemographic characteristics

Variables	N = 46,874	%
Country of residence		
Algeria	6	<0.1
Australia	289	0.6
Austria	431	0.9
Bangladesh	161	0.3
Belgium	277	0.6
Bolivia	160	0.3
Brazil	1,235	2.6
Canada	1,335	2.8
China	1,144	2.4
Chile	506	1.1
Colombia	1,149	2.5
Croatia	1,809	3.9
Czech Republic	816	1.7
Ecuador	100	0.2
France	908	1.9
Germany	1,759	3.8
Gibraltar	33	0.1
Hungary	4,529	9.7
India	67	0.1
Iraq	18	0.0
Ireland	995	2.1
Israel	777	1.7
Italy	1,847	3.9
Japan	169	0.4
Lithuania	1,328	2.8
Malaysia	616	1.3
Mexico	1,446	3.1
New Zealand	1,399	3.0
North Macedonia	702	1.5
Panama	141	0.3
Peru	1,333	2.8
Poland	8,602	18.4
Portugal	1,821	3.9
Slovakia	598	1.3
South Africa	971	2.1
South Korea	924	2.0
Spain	1,494	3.2
Switzerland	744	1.6
Taiwan	1,254	2.7
Turkey	374	0.8
United Kingdom	859	1.8
United States of America	1,150	2.5
Other:	598	1.3
Trans status		
No, I am not a trans person	46,127	98.4
Yes, I am a trans man	22	0.0
Yes, I am a trans woman	252	0.5
Yes, I am a non-binary trans person	26	0.1
I am questioning my gender identity	338	0.7
I don't know what it means	98	0.2
Sexual orientation (original answer options in the survey)		
Heterosexual/Straight	31,317	66.8
Gay or lesbian or homosexual	1,218	2.6
Heteroflexible	4,520	9.6
Homoflexible	186	0.4
Bisexual	5,190	11.1
Queer	457	1.0
Pansexual	1,214	2.6

(continued)

Table 1. Continued

Variables	N = 46,874	%
Asexual	668	1.4
I do not know yet or I am currently questioning my sexual orientation	1,455	3.1
None of the above, specify:	464	1.0
I don't want to answer	164	0.3
Highest level of education		
Primary (e.g., elementary school)	539	1.1
Secondary (e.g., high school)	11,652	24.9
Tertiary (e.g., college or university)	34,673	74.0
Currently being in education		
Not being in education	26,024	55.5
Being in primary education (e.g., elementary school)	34	0.1
Being in secondary education (e.g., high school)	986	2.1
Being in tertiary education (e.g., college or university)	19,807	42.3
Work status		
Not working	12,625	26.9
Working full time	22,250	47.5
Working part-time	7,621	16.3
Doing odd jobs	4,363	9.3
Socioeconomic status		
My life circumstances are among the worst	93	0.2
My life circumstances are much worse than average	358	0.8
My life circumstances are worse than average	2,124	4.5
My life circumstances are average	16,244	34.7
My life circumstances are better than average	18,163	38.7
My life circumstances are much better than average	7,816	16.7
My life circumstances are among the best	2,071	4.4
Residence		
Metropolis (population is over 1 million people)	13,460	28.7
City (population is between 100,000–999,999 people)	18,434	39.3
Town (population is between 1,000–99,999 people)	11,998	25.6
Village (population is below 1,000 people)	2,973	6.3
Relationship status		
Single	15,450	33.0
In a relationship	17,890	38.2
Married or common-law partners	11,972	25.5
Widow or widower	206	0.4
Divorced	1,343	2.9
Having children		
No	35,621	76.0
Yes, 1	4,612	9.8
Yes, 2	4,559	9.7
Yes, 3	1,482	3.2
Yes, 4	330	0.7
Yes, 5	76	0.2
Yes, 6–9	34	0.1
Yes, 10 or more	6	0.0
	<i>M</i>	<i>SD</i>
Age	29.67	10.11

Note. Percentages might not add up to 100% due to missing data. *M* = mean, *SD* = standard deviation.



participants nested within countries; *lmer* function of *lme4* R package; (Bates, Maechler, Bolker, Walker, & Team, 2019). A significant deviation test would support a nested design. All tests were significant (lowest p -value = 2.2^{-16}), so we included country ID as a random effect. In addition, we calculated a series of Pearson correlations to appraise the pattern of associations between study measures and descriptive statistics (means and standard deviations) for all study measures as a function of participants' countries (see [Supplementary Table 1](#)).

To examine the associations between pornography use motivations and the outcome measures of sexual wellbeing, we conducted a series of hierarchical mixed-effect models with country ID as the random effect. In the first step, we introduced as covariates the measures of problematic pornography use, pornography use frequency, age, religiosity, and family status (0 = not in a relationship, 1 = in a relationship; the latter was not included when predicting sexual satisfaction because only women in a romantic relationship completed the questionnaire). In the second step, we added as predictors the different pornography use motivations. Tolerance scores (produced by the *olsrr* R package (Hebbali, 2020)) indicated slight multicollinearity but none below the recommended level of 0.2. Given the large sample size – 46,874 women – we decided to address only significant effects with a minimum effect size of $\beta = 0.10$, as a beta of 0.10 explains 1% of the variance in the outcome. These effects were plotted with the *ggplot2* R package (Wickham, Chang, & Wickham, 2019) using the information from the mixed effects models (by employing the *fixef* function of *lme4*). All statistical analyses were preregistered (<https://doi.org/10.17605/OSF.IO/K34A6>).

Ethics

The study was approved by all collaborating countries' national/institutional ethics review boards (<https://osf.io/n3k2c/>) and was conducted in accordance with the Helsinki Declaration.

RESULTS

Patterns of associations

The patterns of associations are presented in [Fig. 1](#). Pornography use frequency and problematic pornography use were related to higher motivations for pornography use, regardless of the type of motivation. In addition, all pornography use motivations were positively linked with one another, ranging from moderate to strong effect sizes. The associations with measures of sexual functioning problems and sexual desire and satisfaction are reported in the models.

Sexual functioning problems

The model revealed three pornography use motivations that were above the cut-off of $\beta \geq 0.10$ ([Table 2](#)). Specifically, the

higher women's motivations for sexual pleasure ([Supplementary Fig. 2a](#)) and/or curiosity ([Supplementary Fig. 2b](#)), the fewer sexual functioning problems they had; the higher women's motivation related to lack of sexual satisfaction, the more sexual functioning problems they had ([Supplementary see Fig. 2c](#)). Overall, the model explained 14.7% of the variance in sexual functioning problems, with pornography use motivation contributing 1.8%.

Sexual desire

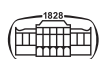
The model revealed two pornography use motivations above the cut-off of $\beta \geq 0.10$ ([Table 3](#)). Specifically, the higher women's motivations for sexual pleasure ([Supplementary Fig. 3a](#)) and/or curiosity ([Supplementary Fig. 3b](#)), the higher their sexual desire. In addition, women in relationships had significantly higher sexual desire than women not in relationships. Other effects were below the cut-off of effect size. Overall, the model explained 29.3% of the variance in sexual desire, with pornography use motivation contributing 2.9%.

Sexual satisfaction

The model revealed one pornography use motivation above the cut-off of $\beta \geq 0.10$ ([Table 4](#)). Specifically, the higher women's motivation because of lack of sexual satisfaction, the lower their sexual satisfaction ([Supplementary Fig. 4](#)). None of the covariates were above the cut-off of effect size. Overall, the model explained 14.3% of the variance in sexual satisfaction, with pornography use motivation contributing 9.4%.

DISCUSSION

The study reveals significant associations between pornography use motivations and women's sexual well-being. Higher frequencies of pornography use and problematic use are linked to increased motivations for consumption, showing moderate to strong effect sizes. Specific motivations, such as those driven by sexual pleasure and curiosity, are associated with fewer sexual functioning problems and higher sexual desire, while motivations stemming from a lack of sexual satisfaction correlate with lower sexual satisfaction. These findings contribute to understanding the nuanced relationship between pornography use motivations and women's sexual well-being, in line with the notions of the ACE Model (Campbell & Kohut, 2017). This aligns with the findings of a recent review and qualitative analysis of research on pornography use among women in relationships, which also suggested that it may relate in both positive and negative ways with their sexual wellbeing (Litsou et al., 2021). Specifically, we found that across cultures, when women use pornography for their own pleasure or to satisfy their own sexual curiosity (Bóthe, Vaillancourt-Morel, et al., 2022), it is associated with fewer sexual functioning problems and higher sexual desire. One possible explanation for this is that pornography provides a space for women to



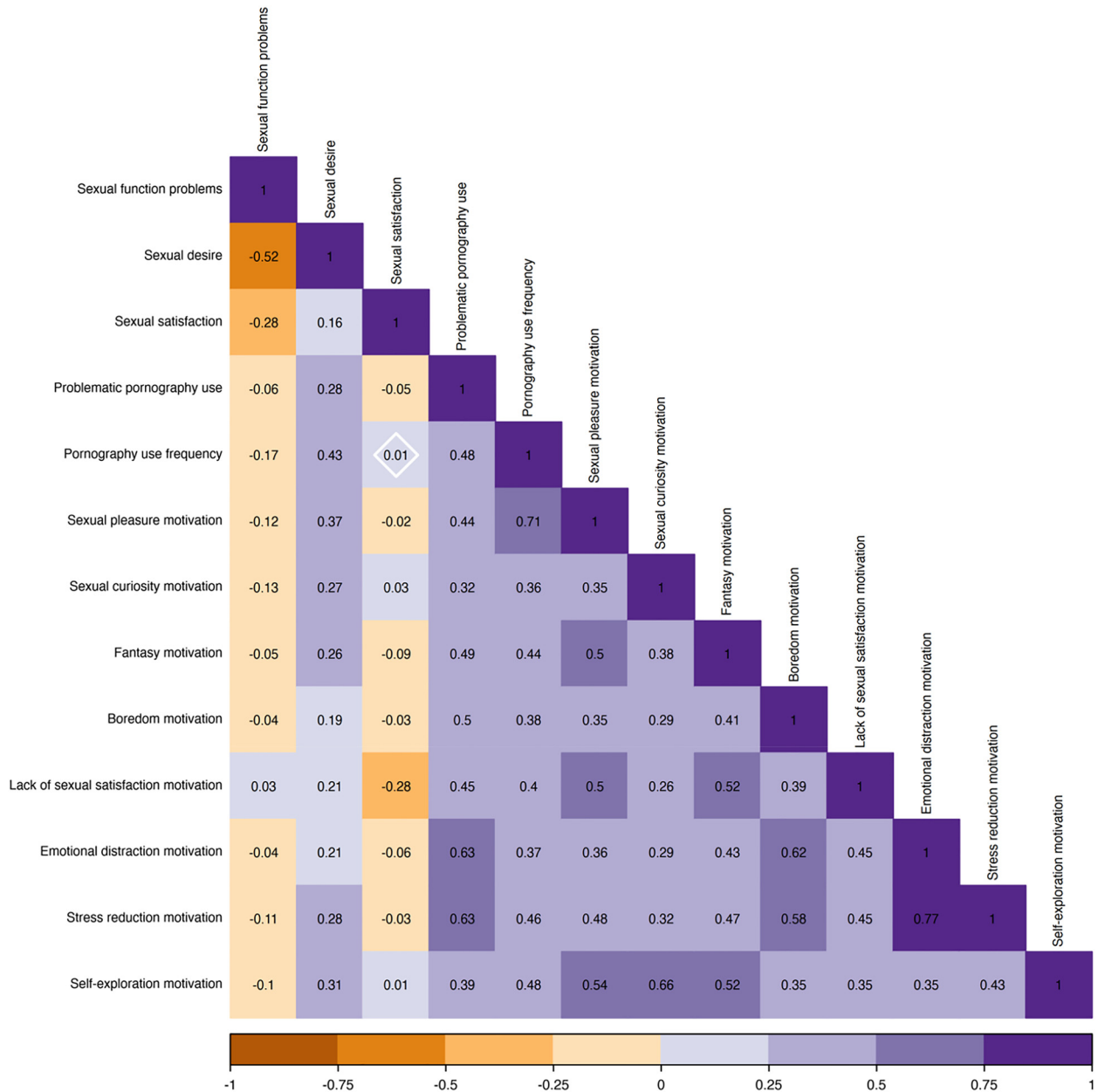


Fig. 1. The patterns of associations between study measures. Values with a white diamond around them are not significant. Significance was adjusted by the Holm-Bonferroni method

explore and express their sexuality and perhaps also normalize different bodies and genitalia (Ciclitira, 2004). Pornography may also serve as a form of sexual education and experimentation, helping women to better understand their own bodies and desires and leading to greater sexual functioning and desire. Finally, Litsou et al. (2021) suggests that among some women, the use of pornography may lead to an enhancement of sexual empowerment, relaxation, and overall sexual satisfaction. It is important to consider that the relationship between motives for pornography use and sexual functioning and desire may be bidirectional, meaning that not only may using pornography lead to improved sexual functioning and desire, but women with higher sexual functioning may also feel more confident and less

intimidated when consuming pornography. Furthermore, women who have good sexual functioning may also be more likely to use pornography as a tool for self-exploration and sexual pleasure and to explore different types of sexual activity which may lead to an even greater improvement in sexual functioning and desire as they are able to better understand their own desires and preferences.

The current study also suggests that across cultures, when women use pornography because they experience a lack of sexual satisfaction in general, it may be associated with more sexual functioning problems and less sexual satisfaction in their romantic relationships. An underlying explanation for this association may be that when women turn to pornography as a way to cope with dissatisfaction in



Table 2. Mixed-effects models for statistically predicting sexual functioning problems as a function of pornography use motivations while adjusting for problematic pornography use, pornography use frequency, age, religiosity, and family status

Predictors	Sexual functioning problems (Step 1)			Sexual functioning problems (Step 2)		
	Estimates	95% CI	<i>p</i>	Estimates	95% CI	<i>p</i>
(Intercept)	0.41	0.33 – 0.49	<0.001	0.40	0.32 – 0.47	<0.001
Problematic pornography use	–0.03	–0.04 – –0.02	<0.001	–0.04	–0.05 – –0.02	<0.001
Pornography use frequency	–0.23	–0.24 – –0.22	<0.001	–0.17	–0.18 – –0.15	<0.001
Age	–0.01	–0.01 – –0.01	<0.001	–0.01	–0.01 – –0.01	<0.001
Religiosity	0.00	0.00 – 0.00	0.011	0.00	0.00 – 0.01	<0.001
Family status (in a relationship)	–0.30	–0.31 – –0.28	<0.001	–0.25	–0.27 – –0.23	<0.001
Sexual pleasure motivation				–0.10	–0.11 – –0.08	<0.001
Sexual curiosity motivation				–0.12	–0.14 – –0.11	<0.001
Fantasy motivation				0.03	0.02 – 0.05	<0.001
Boredom motivation				0.04	0.03 – 0.05	<0.001
Lack of sexual satisfaction motivation				0.10	0.09 – 0.11	<0.001
Emotional distraction motivation				0.03	0.02 – 0.05	<0.001
Stress reduction motivation				–0.07	–0.09 – –0.06	<0.001
Self-exploration motivation				0.01	–0.00 – 0.03	0.051
Random Effects						
σ^2		0.87			0.85	
τ_{00}		0.05 country			0.05 country	
ICC		0.06			0.06	
<i>N</i>		42 country			42 country	
Observations		40,638			40,593	
Marginal <i>R</i> ² /Conditional <i>R</i> ²		0.074/0.129			0.097/0.147	

Table 3. Mixed-effects models for statistically predicting sexual desire as a function of pornography use motivations while adjusting for problematic pornography use, pornography use frequency, age, religiosity, and family status

Predictors	Sexual desire (Step 1)			Sexual desire (Step 2)		
	Estimates	95% CI	<i>p</i>	Estimates	95% CI	<i>p</i>
(Intercept)	–0.25	–0.34 – –0.16	<0.001	–0.21	–0.29 – –0.12	<0.001
Problematic pornography use	0.13	0.12 – 0.14	<0.001	0.07	0.06 – 0.08	<0.001
Pornography use frequency	0.36	0.35 – 0.37	<0.001	0.23	0.22 – 0.24	<0.001
Age	0.00	0.00 – 0.01	<0.001	0.00	0.00 – 0.01	<0.001
Religiosity	–0.01	–0.01 – –0.01	<0.001	–0.01	–0.01 – –0.01	<0.001
Family status (in a relationship)	0.22	0.20 – 0.23	<0.001	0.21	0.19 – 0.23	<0.001
Sexual pleasure motivation				0.12	0.10 – 0.13	<0.001
Sexual curiosity motivation				0.14	0.13 – 0.15	<0.001
Fantasy motivation				–0.02	–0.03 – –0.01	0.001
Boredom motivation				–0.05	–0.07 – –0.04	<0.001
Lack of sexual satisfaction motivation				0.04	0.03 – 0.05	<0.001
Emotional distraction motivation				–0.01	–0.03 – 0.00	0.096
Stress reduction motivation				0.05	0.04 – 0.07	<0.001
Self-exploration motivation				0.03	0.02 – 0.04	<0.001
Random Effects						
σ^2		0.75			0.71	
τ_{00}		0.08 country			0.07 country	
ICC		0.10			0.09	
<i>N</i>		42 country			42 country	
Observations		40,891			40,845	
Marginal <i>R</i> ² /Conditional <i>R</i> ²		0.185/0.264			0.225/0.293	

their sexual relationship, it may perpetuate a cycle of dissatisfaction, where instead of addressing the underlying issues in their relationship, the women may become increasingly reliant on pornography as a means of achieving better sexual functioning and sexual satisfaction. This may

lead to a decrease in sexual satisfaction in their real-life relationship and to feelings of guilt, shame, and frustration. Additionally, it may lead to feelings of disconnection and emotional distance from their partner, which may further exacerbate the issues in the relationship and lead to

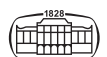


Table 4. Mixed-effects models for statistically predicting sexual satisfaction as a function of pornography use motivations while adjusting for problematic pornography use, pornography use frequency, age, and religiosity

Predictors	Sexual satisfaction (Step 1)			Sexual satisfaction (Step 2)		
	Estimates	95% CI	<i>p</i>	Estimates	95% CI	<i>p</i>
(Intercept)	0.58	0.52 – 0.64	<0.001	0.39	0.33 – 0.45	<0.001
Problematic pornography use	–0.08	–0.10 – –0.07	<0.001	0.00	–0.01 – 0.02	0.642
Pornography use frequency	0.02	0.00 – 0.03	0.038	0.03	0.01 – 0.05	0.001
Age	–0.02	–0.02 – –0.02	<0.001	–0.01	–0.02 – –0.01	<0.001
Religiosity	0.00	–0.00 – 0.00	0.248	0.00	–0.00 – 0.00	0.647
Sexual pleasure motivation				0.08	0.06 – 0.10	<0.001
Sexual curiosity motivation				0.05	0.03 – 0.06	<0.001
Fantasy motivation				–0.00	–0.02 – 0.02	0.932
Boredom motivation				0.03	0.01 – 0.04	0.002
Lack of sexual satisfaction motivation				–0.42	–0.43 – –0.40	<0.001
Emotional distraction motivation				–0.02	–0.05 – –0.00	0.026
Stress reduction motivation				0.05	0.03 – 0.07	<0.001
Self-exploration motivation				0.01	–0.01 – 0.03	0.156
Random Effects						
σ^2		0.95			0.86	
τ_{00}		0.01 _{country}			0.01 _{country}	
ICC		0.01			0.01	
<i>N</i>		42 _{country}			42 _{country}	
Observations		25,171			25,150	
Marginal R^2 /Conditional R^2		0.037/0.049			0.131/0.143	

decreases in intimacy and trust (Ashton, McDonald, & Kirkman, 2017). It is also possible that women who experience less sexual satisfaction and lower sexual functioning in general may use pornography as a form of self-treatment for sexual dysfunction, such as low libido or difficulty achieving orgasm. They may believe that viewing pornography will help them to overcome these issues, but this may not hold true in all instances (Ashton et al., 2017). It is also important to note that when women turn to pornography as a way to cope with sexual dissatisfaction, it may also be a sign of deeper problems such as a lack of communication, lack of trust, or unresolved conflicts in the relationship. It is important to address these underlying issues instead of relying solely on pornography to cope with sexual dissatisfaction.

The findings of the current study on how motivations for pornography use are associated with sexual functioning, desire, and satisfaction align with previous research from the field of sexual motives. Motives for engaging in sexual behavior may be classified as either positive reinforcement (such as pleasure) or negative reinforcement (such as coping), or as approach (engaging in sex to achieve a positive outcome) or avoidance (engaging in sex to avoid a negative outcome) motives (Cooper, Shapiro, & Powers, 1998; Impett et al., 2005). Positive and approach sexual motives are typically positively associated with sexual satisfaction, sexual desire, relationship satisfaction, and personal and interpersonal wellbeing (Gable & Impett, 2012; Impett, Strachman, Finkel, & Gable, 2008; Muise et al., 2013, 2017), while engaging in sex for negative and avoidance motives, such as coping, has been associated with lower sexual function and satisfaction (Impett et al., 2005; Muise et al.,

2013; Watson et al., 2017). The current findings may also be understood in the context of sexual motivation theory. It may be inferred that women's use of pornography for self-exploration and pleasure aligns with approach motives, and therefore may be positively associated with better sexual functioning and desire. On the other hand, using pornography as a means of coping with sexual dissatisfaction aligns, potentially, with avoidance motives, and therefore may be associated with negative outcomes for sexual functioning, desire, and satisfaction.

Furthermore, the international scope of our study, encompassing data from 42 countries, strengthens the empirical foundation of our findings by framing pornography use motivations and sexual wellbeing in a cross-cultural perspective, and highlighting the importance of considering diverse cultural contexts in understanding the women's pornography use.

Theoretical and clinical implications

This study provides an improved understanding of the associations between pornography use motivations and sexual functioning, desire, and satisfaction among women. A major strength lies in our extensive sample, which includes women from 42 countries, providing a rich and diverse dataset. By employing the ACE model (Campbell & Kohut, 2017), this study sought to examine positive and negative correlates of pornography use. The findings challenge stereotypes, highlighting the diversity of women's experiences and underscoring the pivotal role of individual motivations. This study not only contributes to a deeper understanding of women's interactions with pornography but also lays the foundation



for future research. Our findings align with the ACE model (Campbell & Kohut, 2017), which emphasizes Antecedents–Context–Effects in understanding the complexities of pornography use. By identifying various motivations for pornography consumption and their associations with women’s sexual well-being, our study contributes to refining theories on sexual motivations and encourages a more informed dialogue on the topic.

The findings have clinical implications for therapists who work with women who use pornography. This study highlights the importance of considering the context of women’s use (Campbell & Kohut, 2017), by understanding the motives behind pornography use. For example, if women use pornography due to sexual dissatisfaction with their partner, therapists should prioritize addressing these underlying relationship issues rather than solely focusing on pornography use. It is important to consider that while the current study suggests an association between the use of pornography for personal pleasure or curiosity and greater sexual functioning and desire in women, therapists may want to discuss with women about their motivations for viewing pornography and assist them in emphasizing approach motivations, as these are correlated with more positive sexuality outcomes.

Strengths, limitations and future studies

The present study has several notable strengths, such as its large, 42-country sample, inclusion of women of different sexual orientations, and the adherence to open-science practices. However, it also has some limitations that should be acknowledged (see general limitations of the ISS at <https://osf.io/n3k2c>). One of the main limitations is that the data collected are cross-sectional and self-reported, which may be prone to biases such as recall bias. Furthermore, the findings of the study may not be representative of all populations in the 42 countries studied, thereby limiting the generalizability of the results. Another key limitation of this study is the use of convenience samples, which restricts how representative the female participants are of the overall population in each of the 42 countries. To better leverage this large cross-cultural dataset, future research should incorporate country-level variables. Accounting for factors at the country level would provide a more nuanced understanding of how cultural differences across nations influence the relationship between pornography use motivations and sexual wellbeing. This would enable tailored interpretations and recommendations specific to the cultural context of each country setting.

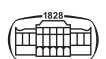
The variability observed in the associations across different country samples suggests a random coefficient modeling approach may be warranted. This highlights the critical role of cultural context in shaping the links between pornography motivations and sexual outcomes. Beyond just including country-level variables, conducting detailed country-specific analyses would be valuable. Examining the unique cultural nuances, societal norms, values, and attitudes towards sexuality and pornography within each

represented nation could illuminate how these elements impact the relationship of interest at the country level. Taking this granular, country-focused analytical approach would allow exploration of potential moderating or mediating factors embedded within the cultural context. With this culturally-sensitive, nation-level lens, the insights generated would directly speak to the specific needs and preferences of women from diverse cultural backgrounds. Another limitation is that the study only captured data from an individual and not a dyadic level. Therefore, it does not consider the potential effects of shared pornography use on sexual functioning, desire, and satisfaction among women in committed romantic relationships.

Future studies in this area should aim to employ rigorous research designs to examine the relationships between motives for pornography use and sexual functioning, satisfaction and desire in women. One such design could be a longitudinal study, in which study participants are followed over time to track changes in sexual functioning, satisfaction and desire in relation to their motives and context of pornography use. This would allow for the examination of the directionality of the associations between pornography use motivations and sexual wellbeing and provide a more comprehensive understanding of the relationship between these variables. Another avenue for future research could be the examination of clinical samples, such as women with sexual dysfunction, to investigate the relationship between the motives for pornography use and sexual wellbeing in these populations. Utilizing methodologies such as ecological momentary assessment could allow for a more detailed examination in real-time of associations between pornography use and sexual wellbeing among women. Finally, future studies could examine links between motives for pornography use and sexual functioning and desire from the attachment theory perspective. This could provide a deeper understanding of the underlying mechanisms and the emotional and psychological aspects of pornography use motivations and how they may affect one’s sexual function and satisfaction.

CONCLUSION

The current findings suggests that the reasons women use pornography are associated with their sexual wellbeing. Specifically, when women use pornography for their own pleasure or to satisfy their own sexual curiosity, it is associated with fewer sexual functioning problems and higher sexual desire. However, when women use pornography because they experience a lack of sexual satisfaction in general, it may be associated with more sexual functioning problems and less sexual satisfaction in their romantic relationships. The associations between using pornography and sexual wellbeing can be complex, and thus it is important to consider the context of pornography use (e.g., ACE model) and other factors that may contribute to pornography’s potential associations with positive and negative outcomes among women.



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SUPPLEMENTARY MATERIALS

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