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Associations Between Pornography Use Frequency, Pornography Use Motivations, and Sexual Wellbeing in Couples

Beáta Bőthe [a], Marie-Pier Vaillancourt-Morel [b], and Sophie Bergeron [a]

aDépartement de Psychologie, Université de Montréal; bDépartement de Psychologie, Université du Québec à Trois-Rivières

ABSTRACT

Pornography use is prevalent, even among partnered individuals. Although pornography use motivations represent key predictors of sexual behaviors, prior studies only assessed the associations between pornography use frequency and sexual wellbeing, with mixed results. This cross-sectional dyadic study examined the associations between partners' individual and partnered pornography use frequency, motivations, and sexual wellbeing. Self-report data from 265 couples (M_{age_men} = 31.49 years, SD = 8.26; M_{age_women} = 29.36 years, SD = 6.74) were analyzed using an actor-partner interdependence model. Men's greater emotional avoidance motivation was related to their own lower sexual function ($\beta = -.24$, $p = .004$) and greater sexual distress ($\beta = .19$, $p = .012$), while their higher sexual curiosity motivation was related to higher partnered sexual frequency ($\beta = .15$, $p = .031$), their own greater sexual satisfaction ($\beta = .13$, $p = .022$), sexual function ($\beta = .16$, $p = .009$), and lower sexual distress ($\beta = -.13$, $p = .043$). Women's higher partnered pornography use frequency was associated with their own greater sexual function ($\beta = .15$, $p = .034$) and lower sexual distress ($\beta = -.14$, $p = .012$). Additionally, women's higher individual pornography use frequency ($\beta = .33$, $p < .001$) and lower sexual pleasure motivation ($\beta = -.35$, $p = .002$) were associated with higher partnered sexual frequency. No partner effects were observed. Findings highlight that women's pornography use frequency and each partner's motivations might play crucial roles in couples' sexual wellbeing.

Introduction

Pornography use is prevalent in adult populations, with 70 to 94% of individuals reporting having viewed pornography in their lifetime, based on findings of nationally representative studies from Australia (Rissel et al., 2017), Norway (Træen et al., 2004), Poland (Lewczuk et al., 2020), and the US (Grubbs, Kraus et al., 2019; Herbenick et al., 2020). The occurrence of pornography use in romantic relationships is highly similar, with 71 to 92% of men, and 34 to 83% of women reporting pornography use in mixed-sex relationships (Vaillancourt-Morel et al., 2020; Willoughby et al., 2016). However, as most studies on pornography use focus on individuals, regardless of their relationship status, only a handful of them examined whether pornography use is related to couples' sexual wellbeing and even less used dyadic data, including how an individual's pornography use is associated with their partner's sexual wellbeing (partner effect; Vaillancourt-Morel et al., 2019). Some of these studies reported that pornography use might be associated with lower levels of sexual wellbeing, while others were inconclusive or found no associations at all (Vaillancourt-Morel et al., 2019). These mixed findings suggest that complex associations may exist between both partners' pornography use and sexual wellbeing (Campbell & Kohut, 2017; Vaillancourt-Morel et al., 2019).

Research focusing on the association between pornography use and sexual wellbeing also has important limitations. Most studies relied only on a single indicator of sexual wellbeing,

which is concerning given that different indicators of sexual wellbeing have shown different associations with pornography use. For instance, women's pornography use frequency may have a positive association with their sexual desire (Willoughby & Leonhardt, 2020), while being unrelated to their sexual satisfaction (Bridges & Morokoff, 2011). Another limitation is that prior dyadic studies only assessed pornography use frequency (Vaillancourt-Morel et al., 2019), which is surprising given that the Antecedents-Context-Effects (ACE) model of pornography use (Campbell & Kohut, 2017) stresses the importance of including the context surrounding pornography use as pornography use may be driven by several motives. Previous studies have also demonstrated that sexual motivations are key aspects of the context surrounding various sexual behaviors, and known key predictors of various sexual behaviors (Grubbs, Wright et al., 2019; Tóth-Király et al., 2019). The present study sought to address these limitations by simultaneously examining the associations between each partner's individual and partnered pornography use frequency, pornography use motivations, and multiple indicators of sexual wellbeing (Byers & Rehman, 2014), using dyadic data.

Pornography Use Frequency and Sexual Wellbeing

Sexual wellbeing refers to individuals' assessment of the different domains of their sexuality, including cognitive (e.g., satisfaction), physical (e.g., function), and affective (e.g., distress)

CONTACT Beáta Bőthe ✉ beata.bothe@umontreal.ca 🖃 Department of Psychology, Université de Montréal, C.P. 6128, Succursale Centre-Ville, Montréal, QC H3C 3J7, Canada.

evaluations (Byers & Rehman, 2014). Given that sexual well-being involves several processes (Lorimer et al., 2019), measuring only one indicator may bias findings. Thus, in line with prior studies (Blais-Lecours et al., 2016; Bois et al., 2016; Merwin & Rosen, 2019; Stephenson & Meston, 2010), we measured sexual satisfaction, sexual function, sexual distress, and the frequency of partnered sexual activities as indicators of couples' sexual wellbeing.

Sexual Satisfaction

The majority of prior studies focused on the associations between pornography use frequency and sexual satisfaction (i.e., the subjective evaluation of positive and negative aspects related to one's sexual relationship (Lawrance & Byers, 1995). In line with the findings of systematic reviews (Dwulit & Rzymski, 2019; Grubbs, Wright et al., 2019; Vaillancourt-Morel et al., 2019) and a meta-analysis (Wright et al., 2017) focusing on individuals, dyadic studies showed that men's pornography use frequency had weak-to-moderate, negative associations with their own sexual satisfaction (Brown et al., 2017; Willoughby & Leonhardt, 2020; Yucel & Gassanov, 2010). More mixed results were reported among women, but in general, women's pornography use frequency was unrelated to their own sexual satisfaction (Bridges & Morokoff, 2011; Muusses et al., 2015; Willoughby & Leonhardt, 2020; Yucel & Gassanov, 2010). No partner effects were observed (Bridges & Morokoff, 2011; Muusses et al., 2015; Willoughby & Leonhardt, 2020; Yucel & Gassanov, 2010).

Sexual Function

Most studies focusing on individuals reported no significant associations between pornography use frequency and sexual function (i.e., sexual desire, sexual arousal, pain, and orgasm; Rosen et al., 1997, 2000) in sexually active men (Grubbs & Gola, 2019; Landripet & Štulhofer, 2015; Prause & Pfaus, 2015), while women's higher frequency of pornography use was associated with their better sexual function (Blais-Lecours et al., 2016; Bőthe et al., 2020). Regarding dyadic studies, mixed findings were reported, with some suggesting that both partners' higher levels of pornography use frequency were related to the couples' lower levels of sexual problems (e.g., problems becoming sexually aroused; Daneback et al., 2009) and higher levels of sexual desire in both partners (Willoughby & Leonhardt, 2020). Other findings suggested that pornography use frequency was unrelated to men or women's sexual function (Bridges & Morokoff, 2011). Only one study reported significant partner effects, showing that men's pornography use frequency was negatively related to their partner's sexual desire (Willoughby & Leonhardt, 2020).

Sexual Distress

Operationalized as negative emotions that may appear in relation to sexual experiences and difficulties, such as anxiety or feelings of inadequacy (Derogatis et al., 2002), sexual distress has not been directly examined in relation to pornography use. In an early clinical study among 21 women reporting sexual problems, watching pornographic videos had a significantly stronger effect on reducing women's sexual anxiety compared to a control group (Wincze & Caird, 1976). In a qualitative

study examining the effects of pornography use on romantic relationships in coupled individuals (Kohut et al., 2017), higher levels of sexual comfort and self-acceptance, and lower levels of anxiety, shame, and guilt concerning their sexual behaviors were one of the ten most frequently reported effects of pornography use. However, prior studies reported that pornography use frequency and problematic pornography use were associated with higher psychological distress in general (Grubbs et al., 2015; Laier & Brand, 2017; Levin et al., 2012). These mixed results about the associations between pornography use and (sexual) distress suggest that pornography use may result in lower levels of sexual distress in some individuals and couples, while it may result in higher levels of sexual distress in others (Kohut et al., 2017), presumably due to the fact that the context of pornography use (e.g., pornography use with the partner or motivations underlying pornography use) was not assessed.

Partnered Sexual Activities

According to studies examining the associations between pornography use and partnered sexual activities among mixed-sex couples, 3 to 15% of participants reported a lower, while 2 to 15% reported a higher, frequency of partnered sexual activities due to engaging in online sexual activities or pornography (Grov et al., 2011; Kohut et al., 2017). In dyadic studies with mixed-sex and same-sex couples, both positive and negative associations between pornography use and the frequency of partnered sexual activities were reported (Carvalheira et al., 2014; Grov et al., 2011; Kohut et al., 2017; Vaillancourt-Morel et al., 2020; Yucel & Gassanov, 2010), but women's pornography use was associated with higher odds of partnered sexual activities in same-sex and mixed-sex relationships (Vaillancourt-Morel et al., 2020).

Overall, although some dyadic studies examined the associations between pornography use frequency and sexual wellbeing (Bridges & Morokoff, 2011; Brown et al., 2017; Daneback et al., 2009; Muusses et al., 2015; Willoughby & Leonhardt, 2020; Yucel & Gassanov, 2010), they reported mixed results concerning the association between individual pornography use frequency and sexual wellbeing, and a more positive association between partnered pornography use frequency and sexual wellbeing (Grov et al., 2011; Hertlein et al., 2020; Kohut et al., 2018; Vaillancourt-Morel et al., 2019). Still, a key limitation of these studies pertains to their assessment of pornography use frequency without considering other relevant characteristics of pornography use (Campbell & Kohut, 2017). More specifically, the ACE model suggests that pornography use may appear in a wide variety of contexts and may be driven by several motives, which, in turn, may result in both positive and negative consequences (Campbell & Kohut, 2017). Although the frequency of pornography use may be informative, it does not shed light on the underlying motivations (i.e., the context of use) that may better differentiate between the positive and less optimal outcomes of pornography use. In line with this notion are results of prior studies highlighting the differential role of motivations in relation to positive and negative outcomes of various behaviors, including online dating application use (Orosz et al., 2018) or sporting activities (Tóth-Király et al., 2020).

Motivations and Sexual Wellbeing

Motivations toward a given activity (e.g., sexuality) are considered as important individual characteristics that may inform whether this activity is associated with positive or negative outcomes (Muise, 2017). Indeed, sexual motivations showed differentiated associations with several sexuality-related outcomes (Impett et al., 2005; Muise et al., 2013, 2017, 2018; Tóth-Király et al., 2019). Overall, positive sexual motivations (e.g., intrinsic motivations or approach goals) were related to favorable outcomes, such as higher levels of sexual satisfaction, closeness, sexual desire, and more positive emotions in general and during sexual activities (Impett et al., 2005; Muise et al., 2013, 2017, 2018; Tóth-Király et al., 2019), whereas negative sexual motivations (e.g., controlled motivations or avoidance goals) were related to less optimal sexual outcomes (Impett et al., 2005; Muise et al., 2013, 2017, 2018; Tóth-Király et al., 2019). This trend was also reported regarding partner effects in dyadic studies; for example, an individual's avoidance motivations were negatively related to their partner's sexual desire (Muise et al., 2013). Despite motivations' theoretical and clinical relevance for explaining sexual wellbeing, only a few studies have examined pornography use motivations with respect to sexual outcomes (Brown et al., 2017; Reid et al., 2011). However, these studies were limited by focusing on individuals and not couples, and assessing problematic sexual behaviors and sexual attitudes, but not sexual wellbeing.

Pornography Use Motivations

Individuals using pornography report a wide variety of reasons underlying their pornography use, including emotional avoidance, sexual curiosity, excitement-seeking, and sexual pleasure motivations (Baltieri, de Oliveira et al., 2016; Baltieri, De Souza Gatti et al., 2016; De Souza Aranha E Silva & Baltieri, 2016; Reid et al., 2011). Emotional avoidance motivation refers to using pornography to distract oneself from or reduce negative emotions such as sadness, anxiety, or anger. Sexual curiosity motivation is related to learning, information-seeking, or knowledge-expansion regarding sexual possibilities or activities by pornography use. Excitement seeking motivation refers to escaping to a fantasy world or searching novelty and excitement by pornography use. Lastly, sexual pleasure motivation refers to pornography use to enhance sexual arousal or masturbation by pornography use (Reid et al., 2011).

In a sample of 635 university students (75% women) (Brown et al., 2017), men's pornography use-related emotional avoidance motivation was unrelated to their sexual attitudes (i.e., sexual permissiveness, birth control, communion, and instrumentality), while their sexual pleasure, sexual curiosity, and excitement seeking motivations were positively related to sexual permissiveness. Women's respective pornography use motivations (i.e., emotional avoidance, excitement seeking, sexual curiosity, and sexual pleasure) were positively related to their sexual permissiveness and instrumentality (i.e., the main function of sex is one's own pleasure). At the same time, their sexual curiosity motivations were positively related to responsible birth control and stronger attitudes that sex is a shared activity

with one's partner, while sexual pleasure motivations were only positively associated with responsible birth control.

From a clinical perspective, in a small sample of treatment-seeking men with hypersexuality (Reid et al., 2011), pornography use-related emotional avoidance motivation had the strongest positive association with levels of hypersexuality, followed by excitement seeking motivation, sexual pleasure motivation, and sexual curiosity motivation. Similarly, in a large community sample (50% women; Bőthe, Tóth-Király, Bella et al., 2020), coping-related motivations (i.e., boredom avoidance, emotional avoidance, and stress reduction) had the strongest positive associations with the level of problematic pornography use, while sexual curiosity and self-exploration motivations were unrelated to it. In sum, the more positive pornography use motivations showed stronger, positive associations with positive sexual outcomes, while the more negative motivations showed stronger associations with less optimal sexual outcomes.

These preliminary findings, based on cross-sectional data from individuals regardless of their relationship status, suggest that pornography use motivations – similarly to sexual motivations (Impett et al., 2005; Muise et al., 2013, 2017, 2018; Tóth-Király et al., 2019) – may differentiate between the outcomes of one's pornography use. Thus, examining pornography use motivations may help us understand in which context pornography use may be related to better or worse sexual wellbeing outcomes in couples (Campbell & Kohut, 2017).

The Aim of the Present Study

The aim of the present study was to simultaneously examine the associations between each partner's pornography use frequency (i.e., individual and partnered use), pornography use motivations (i.e., emotional avoidance, sexual curiosity, excitement-seeking, sexual pleasure), and sexual wellbeing indicators (i.e., sexual satisfaction, sexual function, sexual distress, and past-month partnered sexual frequency), using a cross-sectional dyadic design. We hypothesized that men's higher individual pornography use frequency would be associated with their own lower levels of sexual wellbeing, while women's individual pornography use frequency would be positively related to their greater sexual wellbeing. Moreover, we hypothesized that each partner's higher partnered pornography use frequency would be associated with their own greater sexual wellbeing. We hypothesized that women's individual pornography frequency and each partner's higher levels of positive pornography use motivations (i.e., sexual pleasure, sexual curiosity, and excitement seeking) would be associated with their own greater sexual wellbeing. We also hypothesized that men's higher individual pornography frequency and each partner's higher levels of negative motivation (i.e., emotional avoidance) would be associated with their own lower levels of sexual wellbeing. Given the lack of prior dyadic studies regarding the associations between pornography use motivations and sexual wellbeing, partner effects were examined in an exploratory manner.

Given that depression and anxiety showed positive associations with emotional avoidance motivation (Reid et al., 2011), as well as with sexual wellbeing in prior studies (McCabe et al., 2016; Nicolosi et al., 2004), depressive and anxiety symptoms

were included as control variables in our model. Moreover, as general sexual approach and avoidance motivations were associated with sexual wellbeing in previous studies (Impett et al., 2005; Muise et al., 2013, 2017, 2018), sexual approach and avoidance goals were also controlled for in our model to be able to examine the additional variance that pornography use motivations may explain in couples' sexual wellbeing.

Method

Participants

A total of 265 adult couples (M_{age_men} = 31.49 years, SD = 8.26, ranged between 19 to 74; M_{age_women} = 29.36 years, SD = 6.74, ranged between 20 to 59) were included in this study. Out of the couples, 259 were mixed-sex couples (97.0%) and six were same-sex couples (3.0%; one men-men and five women-women couples). As for relationship status, 17.0% (n = 45) of couples were not living together, 61.9% (n = 164) were cohabiting, and 21.1% (n = 56) were married. They were together for an average of 6.35 years (SD = 4.7; ranged between 1.4 to 28.5 years). In terms of cultural identity, the majority of men (75.5%; n = 200) and women (75.8%; n = 201) reported being French Canadian, 11.6% (n = 28) of men and 14.4% (n = 38) of women reported being European, 2.6% (n = 7) of men and 0.8% (n = 2) of women reported being English Canadian, and 10.3% (n = 30) of men and 9.0% (n = 24) of women reported other cultural identities.

Procedure

This study was part of a larger longitudinal project advertised as a survey study about childhood experiences and sexuality in couples. A more detailed study protocol was published in other papers focusing on other variables (Vaillancourt-Morel et al., 2019, 2021). Participants responding to the advertisements were contacted by a research assistant for a short eligibility interview by phone and were included in the present study if (a) both partners were at least 18 years old, (b) they had been together for at least six months, and (c) the woman was not pregnant at the time of the first data collection. After the eligibility phone interview (at Time 1), couples were invited via e-mail to complete the self-report survey independently using a secure online survey software (Qualtrics Research Suite). Six months and twelve months later (Time 2 and Time 3), the couples completed the online survey again. For compensation, each partner received a 10$ Amazon gift card after the completion of each survey. As the variables used in this study were assessed at Time 3, we only included data from this measurement point. The study was approved by the related university's Institutional Review Board and was conducted following the Helsinki Declaration.

The study was carried out in a large metropolitan city in North America. A total of 470 couples responded to the online

(e.g., social media groups) and offline advertisements (e.g., flyers) between January and December 2016. Out of these couples, 28 (6.0%) declined participation, 27 (5.7%) did not meet the eligibility criteria, and 102 (21.7%) had only one partner complete the first questionnaire (see Vaillancourt-Morel et al., 2021). Thus, 313 (66.6%) couples were invited to participate in the Time 3 survey. Of these couples, 37 (11.8%) were excluded as a result of separating before Time 3, and a further 11 (3.5%) couples were excluded because neither of the partners completed any questions used in the present study, resulting in a sample of 265 couples.

Measures

Individual and Partnered Pornography Use Frequency

Before answering any pornography-related questions, we provided the following definition to the participants about pornography (Kohut et al., 2017): "*For the following questions, the term 'pornography' is used to refer to: intentionally looking at or listening to: (a) pictures or videos of nude individuals, (b) pictures or videos in which people are having sexual activities, or (c) written or audio material that describes people having sex.*". Participants' average individual pornography use frequency in the past three months was assessed with one pre-established question: "*On average, in the last THREE months, how many times per month did you use pornography?*". They indicated their responses using the following eight-point scale: 0 = never, 1 = less than 1 time per month, 2 = 1 time per month, 3 = 2–3 times per month, 4 = 1 time per month, 5 = many times per week, 6 = 1 time per day, and 7 = many times per day. Partnered pornography use frequency in the past three months was assessed with one question: "*When you have used pornography in the last THREE months, how often did you use pornography WITH your partner?*". They indicated their responses using the following six-point scale: 0 = never, 1 = rarely, 2 = occasionally, 3 = mostly, 4 = almost always, and 5 = always.

Pornography Use Motivations

Participants' pornography use motivations were assessed with the Pornography Consumption Inventory (PCI) (Reid et al., 2011). The PCI includes 15 items separated into four subscales. *Emotional avoidance motivation* refers to pornography use to cope with or avoid uncomfortable emotions and stressful experiences such as sadness or loneliness (five items, α_{men} = .87; α_{women} = .83 in the present study). *Sexual curiosity motivation* refers to pornography use to learn about sexual practices or to expand knowledge on sexual possibilities (four items, α_{men} = .87; α_{women} = .90 in the present study). *Excitement seeking motivation* refers to pornography use to satisfy desires for excitement, novelty, and variety, or to escape into a fantasy world (three items, α_{men} = .58; α_{women} = .60 in the present study).[1] *Sexual pleasure motivation* refers to pornography use to facilitate sexual pleasure and to help one masturbate (three items, α_{men} = .81;

[1]Given the low number of items covering different aspects of excitement seeking (i.e., escaping into a fantasy world, providing novelty in life, and giving a sense of excitement), Cronbach's alpha values may be relaxed, and we considered these values acceptable based on prior suggestions (Cortina, 1993; Nunnally & Bernstein, 1994). Nevertheless, to control for measurement error in the main analysis, we conducted confirmatory factor analysis following the guidelines described for dyadic data (Chiorri et al., 2014; Xu et al., 2016). The model showed acceptable fit to the data (CFI = .95; TLI = .94; RMSEA = .08, 90%CI = .08 to .09). We saved the factor score of the excitement-seeking motivation and used that as input for the main analyses to control for potential measurement error (Skrondal & Laake, 2001).

α_{women} = .93 in the present study). Participants indicated the degree to which the statements described their pornography consumption using a five-point scale (1 = never like me; 5 = very often like me). Higher scores indicate higher levels of the given motivation; the mean score varied between 1 and 5 in each factor. The factors of the PCI demonstrated adequate reliability in terms of internal consistency in the present sample.

Sexual Satisfaction

Participants' levels of sexual satisfaction were assessed with the Global Measure of Sexual Satisfaction (GMSEX) (Lawrance & Byers, 1998). The GMSEX includes five items rated on seven-point bipolar scales regarding one's sexual relationship with their partner: very bad (1) – very good (7), very unpleasant (1) – very pleasant (7), very negative (1) – very positive (7), very unsatisfying (1) – very satisfying (7), and worthless (1) – very valuable (7). Higher scores indicate higher levels of sexual satisfaction; the total score varied between 5 and 35 in this study. The GMSEX demonstrated adequate reliability in terms of internal consistencies in the present sample (α_{men} = .93; α_{women} = .95).

Sexual Function

Men indicated their levels of sexual function regarding the past four weeks using the International Index of Erectile Function (IIEF) (Rosen et al., 1997). The IIEF includes 15 items rated on five- and six-point scales with answer options adjusted to the questions. Higher scores indicate higher levels of sexual functioning. The IIEF demonstrated adequate reliability in terms of internal consistency in the present sample (α = .84). Women indicated their levels of sexual function regarding the past four weeks using the Female Sexual Function Index (FSFI) (Rosen et al., 2000). The FSFI includes 19 items rated on five- and six-point scales with answer options adjusted to the questions. Higher scores indicate higher levels of sexual functioning. The FSFI demonstrated adequate reliability in terms of internal consistency in the present sample (α = .94). Women's scores on the FSFI were rescaled using the following formula ((score – 2) × (75/34)) to match men's scores on the IIEF (Corsini-Munt et al., 2017). Thus, women and men's sexual function total score varied between 15.88 and 75.

Sexual Distress

Participants indicated their levels of sexual distress using the Sexual Distress Scale (SDS) (adapted to each gender/sex) (Derogatis et al., 2002). The SDS includes 13 items rated on a five-point scale (0 = never; 4 = always). Higher scores indicate higher levels of sexual distress; the total score varied between 0 and 52 in this study. The SDS demonstrated adequate reliability in terms of internal consistency in the present sample (α_{men} = .94; α_{women} = .96).

Sexual Frequency

Couples' frequency of sexual activities in the past month was assessed with one question: "*How many times have you been sexually active as a couple in the last month (includes but not limited to all of the following: penetration, manual or oral stimulation)?*". Participants used the following scale to indicate their response: 0 = 0 times, 1 = 1–2 times, 2 = 3–4 times, 3 = 5–6 times, 4 = 7–10 times, and 5 = 11 or more times. Although the responses of the partners in the couple were strongly correlated (r = .69, p < .001), some minor differences naturally occurred. Thus, a mean score for partnered sexual frequency was calculated from both partners' answers.

Depressive and Anxiety Symptoms

Participants indicated their levels of depressive and anxiety symptoms regarding the past month using the Depression and Anxiety subscales of the Trauma Symptom Checklist (TSC-40) (Elliott & Briere, 1992), using a four-point scale (0 = never; 3 = often). The Depression subscale includes nine items; higher scores indicate higher levels of depressive symptoms (α_{men} = .59; α_{women} = .71). The total score varied between 0 and 21 in this study. The Anxiety subscale includes nine items; higher scores indicate higher levels of anxiety symptoms (α_{men} = .69; α_{women} = .70). The total score varied between 0 and 22 in this study.

Sexual Approach and Avoidance Goals

Participants rated the importance of sexual approach and avoidance goals using the Approach and Avoidance Goals Scale (Cooper et al., 1998; Muise et al., 2017). Participants reported their answers using a seven-point scale (1 = not at all important; 7 = extremely important). The Approach goals subscale includes ten items; higher scores indicate higher levels of sexual approach goals (α_{men} = .82; α_{women} = .82). The mean score varied between 2.1 and 7 in this study. The Avoidance goals subscale includes six items; higher scores indicate higher levels of sexual avoidance goals (α_{men} = .87; α_{women} = .88). The mean score varied between 1 and 7 in this study.

Statistical Analyses

Descriptive statistics, paired-samples t-tests, and correlations between the examined variables were computed in SPSS 25. M*plus* 8.4 was used to test the hypothesized associations between each partner's pornography use frequency (i.e., individual and partnered use), pornography use motivations (i.e., emotional avoidance, sexual curiosity, excitement seeking, and sexual pleasure), and sexual wellbeing indicators (i.e., sexual satisfaction, sexual function, sexual distress, and past-month partnered sexual frequency), controlling for depressive and anxiety symptoms, and approach and avoidance sexual goals. All variables were included in one model. To account for the non-independence between partners, data were analyzed using the actor-partner interdependence model (APIM) (Kenny et al., 2006). The APIM analysis can examine the effects of one individual's scores on their own scores (actor effects) controlling for partner effects, and the effects of one individual's scores on their partner's scores (partner effects) controlling for actor effects. Given the naturally non-normal distribution of the data, the robust maximum likelihood estimator (MLR) was used. The full information maximum likelihood (FIML) method was used to account for missing data (ranging from 0 to 12.1%). The model was fully saturated (i.e., χ^2 = 0; df = 0, Comparative Fit Index (CFI) = 1.00; Tucker-Lewis Index (TLI) = 1.00; Root-Mean-Square Error of Approximation (RMSEA) = 0.00), as all actor and partner

associations between all pornography-use related variables and all sexual outcomes were estimated in a single model. Moreover, control variables were included in the model as covariates of all pornography use-related variables, and predictors of all sexual wellbeing indicators. Following prior recommendations (Ferguson, 2016), 95% bias-corrected bootstrapped confidence intervals (CIs) were also computed in Mplus,[2] as CIs can provide more information than the estimates themselves (e.g., CIs that include zero indicate that the null hypothesis should not be rejected). A total of 5000 bootstrap replication samples were requested. Regarding the *mixed-sex couples*, partners were theoretically expected to be distinguishable by their gender/sex (Peugh et al., 2013), and this assumption was tested by the omnibus test of distinguishability (Kenny et al., 2006). In this test, the means, variances, and covariances were set to be equal across women and men, and the significant chi-square test confirmed the distinguishability of the partners by sex: $\chi^2(108) = 822.65$, $p < .001$.

Concerning the *same-sex couples*, the partners were considered indistinguishable by their gender/sex. As only six same-sex couples were included in the sample, it was not possible to conduct the same analysis as in the case of the mixed-sex couples (i.e., the APIM model with indistinguishable dyads did not converge potentially due to the low sample size and the low levels of variance in the responses). However, given recent ethical considerations (Frohard-Dourlent et al., 2017; Sharman & Johnson, 2012), we decided not to exclude these participants from the sample, but report their results in a more simplified manner (i.e., descriptive statistics and correlations between the variables) to provide preliminary results.

Results

Preliminary Results in Same-Sex Couples

As only six same-sex couples were included in the sample, it was not possible to conduct the APIM model with indistinguishable dyads (i.e., the model did not converge). Therefore, we report descriptive statistics and correlations between pornography use individual and partnered frequency, pornography use motivations, sexual satisfaction, sexual distress, sexual function, and past-month partnered sexual frequency in same-sex couples to provide some preliminary results (Table 1). Most of the correlations were not significant due to the underpowered nature of the data; thus, we discuss these preliminary results based on their effect sizes (i.e., ≤ |.30| is moderate and ≤ |.50| is strong (Cohen, 1992)). The results should be interpreted with caution.

The actor's sexual pleasure motivation and the partner's sexual curiosity motivation had moderate, positive associations with the actor's *sexual satisfaction*. The actor's emotional avoidance motivation had a strong, positive association, while

the partner's emotional avoidance motivation had a moderate positive association with the actor's *sexual function*. Also, the actor's sexual curiosity and excitement seeking motivations had moderate, positive associations with their sexual function. The partner's excitement seeking, and sexual curiosity motivations had moderate, negative associations with the actor's *sexual distress*. The actor's sexual curiosity motivation had a moderate, positive association with the frequency of *past-month partnered sexual activities* in the couples.

Descriptive and Correlational Results in Mixed-Sex Couples

Descriptive statistics and comparisons of women and men's scores in mixed-sex couples are presented in Table 2. Significant, moderate-to-strong differences were observed between women and men regarding all pornography use-related variables, with men having higher scores than women in each case, except for partnered pornography use frequency, in which case the effect size was small. Regarding sexual wellbeing, there was no significant difference between women's and men's sexual satisfaction and their partnered sexual frequency. Women reported significantly greater sexual distress than men with a moderate effect size. Men reported higher levels of sexual function than women with a large effect size. Correlations between individual and partnered pornography use frequency, pornography use motivations, sexual satisfaction, sexual function, sexual distress, past-month partnered sexual frequency, and all control variables are shown in Table 3 for mixed-sex couples. The small-to-moderate associations between women and men's scores supported the interdependence of their data.

By using APIM, the hypothesized associations between individual and partnered pornography use frequency, pornography use motivations, sexual satisfaction, sexual function, sexual distress, and past-month partnered sexual frequency were examined considering both the actor and the partner effects and controlling for each partner's depressive and anxiety symptoms, and sexual approach and avoidance goals. The visual presentation of the results of the model with the standardized regression coefficients is presented in Figure 1.

Pornography Use and Sexual Satisfaction in Mixed-Sex Couples

Men's higher levels of sexual curiosity motivation ($\beta = .13$ [95% CI = .01, .26], $p = .042$) were associated with their own higher levels of sexual satisfaction, with a small effect size.[3] *Women's* all pornography use-related variables were unrelated to their own sexual satisfaction in the present model. No significant partner effects were observed. Overall, the model explained 45.3% of the variance in men's and 30.3% in women's sexual satisfaction (Figure 1).

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[2]Bias-corrected bootstrapped confidence intervals (CIs) were computed with the maximum likelihood estimator as bootstrapping is not available with MLR. This method does not alter the parameter estimates, only the confidence intervals associated with them.

[3]To examine whether the identified associations were significantly different between women and men, we compared the original, unconstrained model to a model in which all paths were constrained to be equal between both partners. The corrected chi-square difference test ($\Delta\chi^2 = 126.89$, $p < .001$) indicated a significant difference between the unconstrained and the fully constrained models. These results suggest that the associations differed significantly between women and men. Considering the sex-based differences in the original (unconstrained) model, we pushed forward this difference test by specifically constraining those associations that were different for women and men in the model (e.g., associations between one's own emotional avoidance pornography use motivation and one's own sexual distress). The corrected chi-square difference test ($\Delta\chi^2 = 26.43$, $p = .003$) indicated a significant difference between the two models, suggesting that women and men differ significantly in the examined associations.

Table 1. Descriptive statistics and correlations between pornography use frequency, pornography use motivations, sexual satisfaction, sexual distress, sexual function, past-month partnered sexual frequency, and control variables in same-sex couples (n = 6 couples).

	Skew. (S.E.)	Kurt. (S.E.)	M (SD)	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Individual pornography use frequency in the past three months[a][b,e]	1.09 (0.64)	0.09 (1.23)	1.25 (1.48)	-.28	—	-.17	-.21	-.34	-.09	.10	.24	-.01	.02	-.40	-.50	-.18	-.24
2. Partnered pornography use frequency in the past three months[b,e]	—	—	0.00 (0.00)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3. Emotional avoidance motivation	1.25 (0.64)	0.94 (1.23)	1.58 (0.72)	.77**	—	-.15	-.02	-.45	-.34	-.28	.32	-.13	.16	-.36	-.52	.06	.04
4. Sexual curiosity motivation	2.38 (0.64)	5.93 (1.23)	1.27 (0.53)	.57	—	.32	-.17	-.27	.20	.42	.25	-.40	.44	-.45	-.31	.38	-.29
5. Excitement seeking motivation	0.48 (0.64)	-1.46 (1.23)	1.94 (1.00)	.23	—	.44	.42	-.73**	-.43	.02	-.18	-.42	.29	-.43	-.29	.45	.34
6. Sexual pleasure motivation	-0.81 (0.64)	-0.99 (1.28)	3.39 (1.62)	.54	—	.62*	.35	.68*	-.23	-.23	.26	-.11	.27	-.17	-.14	.44	.55
7. Sexual satisfaction	-0.65 (0.64)	-0.89 (1.23)	27.92 (6.53)	.12	—	.20	.35	-.02	.36	.05	.52	-.10	.29	.12	.06	.44	-.01
8. Sexual function[c]	-0.67 (0.69)	-0.81 (1.33)	58.95 (12.44)	.27	—	.54	.35	-.02	.26	.05	-.15	-.95**	.62	-.50	-.53	-.23	-.39
9. Sexual distress	0.32 (0.64)	-1.62 (1.23)	17.04 (14.43)	.05	—	-.02	-.29	-.01	-.11	-.10	<.01	.38	-.81**	.22	.09	.11	.26
10. Past-month partnered sexual frequency[d]	0.35 (0.64)	-1.10 (1.23)	1.83 (1.40)	.02	—	.16	.44	.29	.27	.29	.62	-.81**	.87**	-.44	-.28	.37	-.32
11. Depressive symptoms	0.76 (0.64)	3.48 (1.23)	8.58 (3.48)	.20	—	-.17	.39	.18	.03	-.41	-.16	.48	-.44	.06	.87**	.19	-.09
12. Anxiety symptoms	0.51 (0.64)	0.98 (1.23)	6.67 (3.80)	.29	—	-.06	.29	.19	.18	-.15	-.08	.36	-.28	.87**	-.22	.42	-.20
13. Sexual approach goals	-0.86 (0.66)	-0.91 (1.28)	5.10 (1.00)	.31	—	.18	.23	-.15	.23	-.13	.10	-.24	.37	.19	.42	-.05	.57
14. Sexual avoidance goals	-0.37 (0.66)	0.48 (1.28)	3.59 (1.28)	-.28	—	-.26	.04	-.30	-.15	-.53	-.18	.41	-.32	-.09	-.20	-.38	-.24

M = Mean. SD = Standard Deviation. Skew. = Skewness. Kurt. = Kurtosis. S.E. = Standard Error. Correlations presented below the diagonal represent the actor associations (i.e., association between an individual X and their own Y), correlations presented above the diagonal represent the partner associations (i.e., association between an individual X and their partner Y), and correlations in bold represent between partners correlations.

[a]0 = never, 1 = less than 1 time per month, 2 = 1 time per month, 3 = 2–3 times per month, 4 = 1 time per week, 5 = many times per week, 6 = 1 time per day, and 7 = many times per day.
[b]0 = never, 1 = rarely, 2 = occasionally, 3 = mostly, 4 = almost always, and 5 = always
[c]Women's scores on the Female Sexual Function Index were rescaled using the following formula ((score − 2) × (75/34)) to match the scores of men's on the International Index of Erectile Function.
[d]0 = 0 times, 1 = 1–2 times, 2 = 3–4 times, 3 = 5–6 times, 4 = 7–10 times, 5 = 11 or more times.
[e]All participants reported the same value for partnered pornography use frequency. As partnered pornography use frequency was a constant, correlations could not be computed between partnered pornography use frequency and the other variables in the analysis.
*p < .05; **p < .01.

Table 2. Descriptive statistics for pornography use frequency, pornography use motivations, sexual satisfaction, sexual distress, sexual function, past-month partnered sexual frequency, and control variables, and comparison of women and men in the mixed-sex couples (n = 259 couples).

	Men		Women				
	M (SD)	Range	M (SD)	Range	t (df)	p	d
Individual pornography use frequency in the past three months[a]	3.73 (1.79)	0–7	1.15 (1.32)	0–7	21.27 (237)	< .001	1.22
Partnered pornography use frequency in the past three months[b]	0.46 (1.25)	0–4	0.33 (0.74)	0–5	-2.04 (237)	.042	0.07
Emotional avoidance motivation	2.04 (0.95)	1–5	1.31 (0.58)	1–5	10.37 (236)	< .001	0.56
Sexual curiosity motivation	1.96 (0.94)	1–5	1.76 (0.96)	1–5	2.34 (236)	.020	0.16
Excitement seeking motivation	2.59 (0.90)	1–5	2.14 (0.92)	1–5	6.34 (236)	< .001	0.41
Sexual pleasure motivation	3.77 (1.08)	1–5	2.93 (1.54)	1–5	7.28 (235)	< .001	0.59
Sexual satisfaction	29.03 (5.97)	5–35	28.88 (6.60)	5–35	0.32 (236)	.753	0.02
Sexual function[c]	65.44 (7.19)	33–75	58.67 (11.06)	15.88–75	9.30 (219)	< .001	0.83
Sexual distress	7.48 (9.06)	0–52	10.77 (11.17)	0–52	-4.62 (236)	< .001	0.34
Past-month partnered sexual frequency[d]	2.74 (1.42)	0–5	2.80 (1.38)	0–5	-0.81 (237)	.417	0.05
Depressive symptoms	4.55 (3.19)	0–19	6.59 (3.95)	0–21	-6.55 (237)	< .001	0.42
Anxiety symptoms	3.22 (2.99)	0–17	5.08 (3.62)	0–22	-6.58 (237)	< .001	0.43
Sexual approach goals	5.38 (0.95)	2–7	5.11 (1.00)	2–7	3.23 (230)	.001	0.22
Sexual avoidance goals	3.38 (1.50)	1–7	3.00 (1.52)	1–7	2.95 (230)	.004	0.19

M = mean; SD = standard deviation.
[a]0 = never, 1 = less than 1 time per month, 2 = 1 time per month, 3 = 2–3 times per month, 4 = 1 time per week, 5 = many times per week, 6 = 1 time per day, and 7 = many times per day.
[b]0 = never, 1 = rarely, 2 = occasionally, 3 = mostly, 4 = almost always, and 5 = always.
[c]Women's scores on the Female Sexual Function Index were rescaled using the following formula ((score − 2) × (75/34)) to match the scores of men's on the International Index of Erectile Function.
[d]0 = 0 times, 1 = 1–2 times, 2 = 3–4 times, 3 = 5–6 times, 4 = 7–10 times, 5 = 11 or more times. df = degree of freedom.

Table 3. Correlations between pornography use frequency, pornography use motivations, sexual satisfaction, sexual distress, sexual function, and past-month partnered sexual frequency in the mixed-sex couples (n = 259 couples).

	Skew. (S.E.)	Kurt. (S.E.)	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.
1. M's Individual porn. use freq. in the past three months[a]	−0.76 (0.16)	−0.25 (0.31)	–																									
2. W's Individual porn. use freq. in the past three months[a]	0.98 (0.15)	0.01 (0.31)	.30**	–																								
3. M's Partnered porn. use freq. in the past three months[b]	2.58 (0.16)	6.91 (0.31)	.10	.22**	–																							
4. W's Partnered porn. use freq. in the past three months[b]	2.98 (0.15)	7.88 (0.31)	.11	.18**	.62**	–																						
5. M's Emotional avoidance motivation	−0.16 (0.16)	−0.16 (0.31)	.30**	.08	.06	.07	–																					
6. W's Emotional avoidance motivation	0.81 (0.16)	7.92 (0.31)	.14*	.39**	.08	.06	.07	–																				
7. M's Sexual curiosity motivation	2.60 (0.15)	−0.52 (0.31)	.19**	.14*	.28**	.14*	.36**	.11	–																			
8. W's Sexual curiosity motivation	.67 (0.16)	0.75 (0.31)	.11	.31**	.26**	.32**	.11	.33**	.08	–																		
9. M's Excitement seeking motivation	1.21 (0.15)	−0.20 (0.31)	.43**	.19**	.19**	.15*	.52**	.10	.42**	.13*	–																	
10. W's Excitement seeking motivation	0.26 (0.16)	−0.65 (0.31)	.24**	.61**	.35**	.28**	.13*	.57**	.21**	.53**	.26**	–																
11. M's Sexual pleasure motivation	0.35 (0.15)	0.15 (0.31)	.54**	.12	−.01	.04	.35**	.06	.09	.07	.56**	.11	–															
12. W's Sexual pleasure motivation	−0.93 (0.16)	−1.55 (0.31)	.28**	.70**	.23**	.13*	.09	.43**	.13*	.34**	.17**	.78**	.12	–														
13. M's Sexual satisfaction	−0.04 (0.15)	3.16 (0.31)	−.18**	.02	.13*	.14*	−.20**	.02	.05	.15*	−.13*	.13*	−.25**	.06	–													
14. W's Sexual satisfaction	−1.53 (0.16)	2.24 (0.31)	.07	.09	.02	.06	.03	.03	.03	.12	.05	.08	.03	.05	.38**	–												
15. M's Sexual function	−1.50 (0.15)	5.21 (0.32)	−.01	.05	<.01	.12	−.21**	.07	.03	.12	.00	.11	−.02	.04	.63**	.29**	–											
16. W's Sexual function[c]	−1.83 (0.16)	1.11 (0.31)	−.06	.06	.12	.16*	−.05	.01	.01	.16*	.00	.06	−.04	.01	.43**	.58**	.36**	–										
17. M's Sexual distress	−1.13 (0.16)	4.24 (0.31)	.18**	−.04	−.07	−.13*	.33**	−.04	.02	−.11	.18**	−.09	.20**	−.07	−.61**	−.31**	−.71**	−.37**	–									
18. W's Sexual distress	1.87 (0.16)	0.95 (0.31)	.10	−.07	−.10	−.13*	.09	.02	.01	−.10	.01	−.01	.12	.03	−.37**	−.44**	−.35**	−.77**	.43**	–								
19. Past-month partnered sexual freq[d]	1.17 (0.15)	−0.84 (.30)	−.03	.24**	.22**	.27**	−.10	.15*	.13*	.23**	−.02	.19**	−.09	.04	.37**	.32**	.46**	.39**	−.34**	−.38**	–							
20. M's Depressive symptoms	−0.20 (0.15)	1.43 (0.31)	.08	.13*	−.10	−.10	.26**	−.05	.08	−.15*	.12	−.09	.09	.02	−.32**	−.05	−.24**	−.05	.44**	.08	−.08	–						
21. W's Depressive symptoms	0.97 (0.16)	0.40 (0.31)	<.01	.01	−.08	<.01	.05	.10	.02	−.01	.01	.03	.00	.02	−.24**	−.37**	−.19**	−.47**	.22**	.51**	−.18**	.11	–					
22. M's Anxiety symptoms	0.74 (0.15)	1.98 (0.31)	.15*	.10	−.03	.05	.27**	−.06	.15*	−.07	.13	.02	.05	.05	−.19**	−.13*	−.13*	−.07	.31**	.09	−.02	.60**	.16*	–				
23. W's Anxiety symptoms	1.32 (0.16)	1.53 (0.31)	−.01	.02	−.05	−.02	.06	.10	.01	−.05	−.04	−.02	.07	−.02	−.17**	−.23**	−.17**	−.27**	.22**	.33**	−.12	.08	.68**	.14*	–			
24. M's Sexual approach goals	1.05 (0.15)	0.25 (0.31)	−.16*	<.01	.02	.07	−.04	.12	.05	.11	.00	.09	−.14*	.02	.44**	.20**	.37**	.25**	−.24**	−.25**	.29**	−.04	−.16*	−.05	−.09	–		
25. W's Sexual approach goals	−0.53 (0.16)	−0.15 (0.31)	−.05	−.03	−.04	.09	.09	.20**	.04	.16*	−.01	.10	.00	.01	.08	.14*	.17*	.08	−.08	.01	.15*	.07	.01	.08	.00	.18**	–	
26. M's Sexual avoidance goals	−0.40 (0.15)	−0.47 (0.31)	−.10	.03	.04	.01	.09	.18**	.17**	.11	.11	.11	−.12	.09	.03	.00	−.03	.06	.13*	−.09	.13	.12	−.04	.08	−.13	.56**	.18**	–
27. W's Sexual avoidance goals	0.41 (0.16)	−0.25 (0.31)	−.07	−.05	−.08	.06	.17**	.14*	.06	.08	.02	.03	.03	−.06	−.13	−.18**	−.04	−.19**	.11	.26**	.02	.11	.12	.11	.15*	.04	.66**	.15*

M = Men; W = Women. Skew. = Skewness. Kurt. = Kurtosis. S.E. = Standard Error.
[a]0 = never, 1 = less than 1 time per month, 2 = 1 time per month, 3 = 2–3 times per month, 4 = 1 time per week, 5 = many times per week, 6 = 1 time per day, and 7 = many times per day.
[b]0 = never, 1 = rarely, 2 = occasionally, 3 = mostly, 4 = almost always, and 5 = always.
[c]Women's scores on the Female Sexual Function Index were rescaled using the following formula ((score − 2) × (75/34)) to match the scores of men's on the International Index of Erectile Function.
[d]0 = 0 times, 1 = 1–2 times, 2 = 3–4 times, 3 = 5–6 times, 4 = 7–10 times, 5 = 11 or more times.
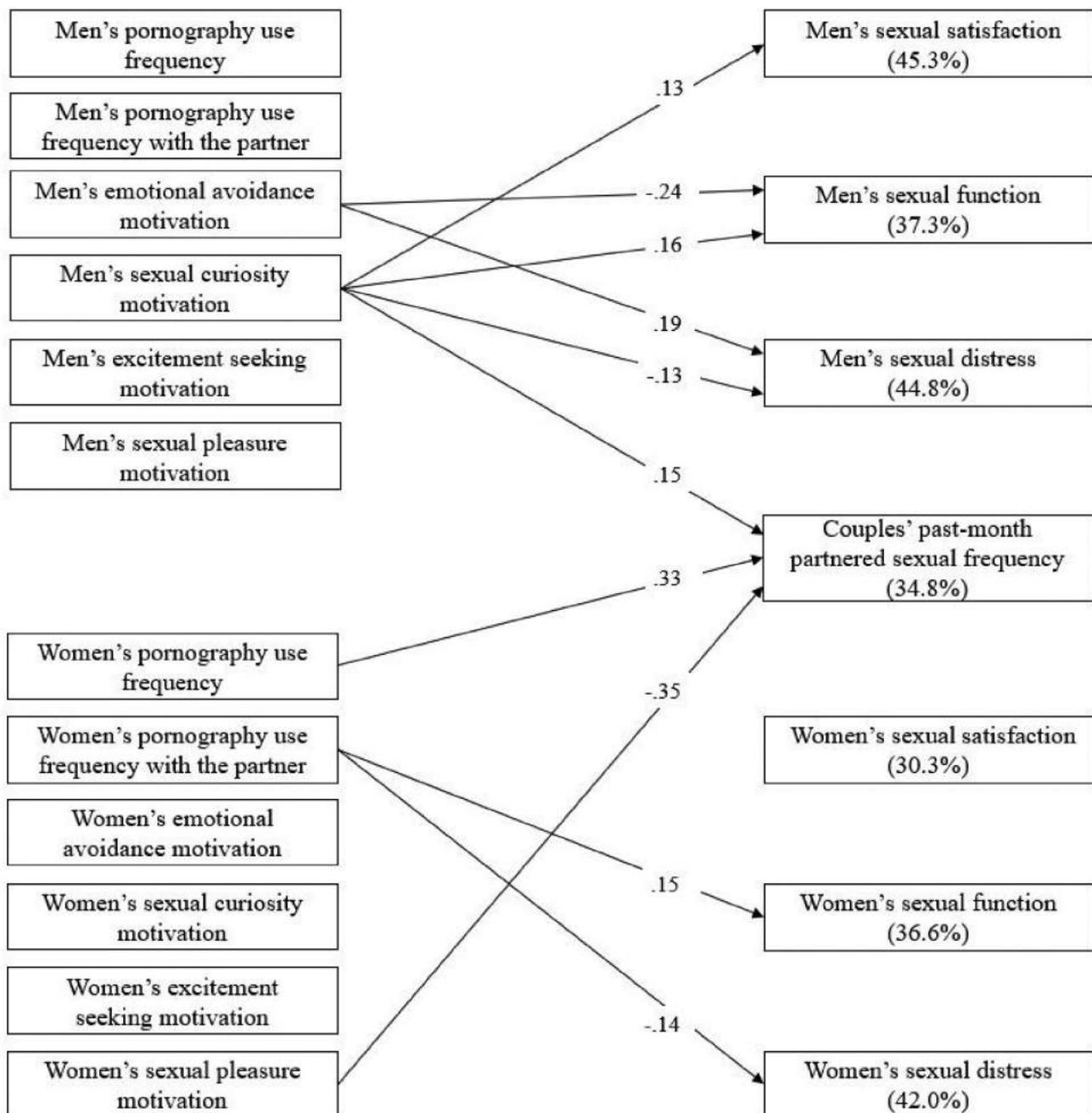*p < .05; **p < .01.

Figure 1. Examination of the associations between individual and partnered pornography use frequency, pornography use motivations, and sexual wellbeing indicators, controlling for depressive and anxiety symptoms, and approach and avoidance sexual goals in mixed-sex couples (n = 259) with an actor-partner interdependence model (APIM). Depressive and anxiety symptoms, and sexual approach and avoidance goals were included in the model as control variables, but are not depicted on the figure for the sake of readability. Correlations between the variables are not depicted for the sake of clarity. Only significant associations are depicted. Coefficients are standardized regression coefficients. Percentages in parentheses are explained variances.

Pornography Use and Sexual Function in Mixed-Sex Couples

Men's lower levels of emotional avoidance motivation ($\beta = -.24$ [95% CI = $-.38$, $-.06$], $p = .004$) and higher levels of sexual curiosity motivation ($\beta = .16$ [95% CI = $.04$, $.29$], $p = .009$) were associated with their own higher levels of sexual function, with small effect sizes. *Women's* higher levels of partnered pornography use frequency ($\beta = .15$ [95% CI = $.03$, $.27$], $p = .013$) were associated with their own higher levels of sexual function, with a small effect size. No significant partner effects were observed.

Overall, the model explained 37.3% of the variance in men's and 36.6% of the variance in women's sexual function (Figure 1).

Pornography Use and Sexual Distress in Mixed-Sex Couples

Men's higher levels of emotional avoidance motivation ($\beta = .19$ [95% CI = $.04$, $.34$], $p = .012$) and lower levels of sexual curiosity motivation ($\beta = -.13$ [95% CI = $-.25$, $<-.01$], $p = .043$) were associated with their own higher levels of sexual

distress, with small effect sizes. *Women's* higher levels of partnered pornography use frequency ($\beta = -.14$ [95% CI = $-.27$, $-.01$], $p = .041$) were associated with their own lower levels of sexual distress, with a small effect size. No significant partner effects were observed. Overall, the model explained 44.8% of the variance in men's and 42.0% of the variance in women's sexual distress (Figure 1).

Pornography Use and Past-Month Partnered Sexual Frequency in Mixed-Sex Couples

Men's higher levels of sexual curiosity motivation ($\beta = .15$ [95% CI = .01, .29], $p = .031$) were associated with the couples' higher levels of past-month partnered sexual frequency, with a small effect size. *Women's* higher levels of individual pornography use frequency ($\beta = .33$ [95% CI = .17, .48], $p < .001$) were associated with the couples' higher levels of past-month partnered sexual frequency, while their higher levels of sexual pleasure motivation were associated with lower levels of past-month partnered sexual frequency ($\beta = -.35$, [95% CI = $-.56$, $-.11$], $p = .002$), with moderate effect sizes. Overall, the model explained 34.8% of the variance in past-month partnered sexual frequency in the couple (Figure 1).

Discussion

The present study examined the associations between partners' individual and partnered pornography use frequency, pornography use motivations, and sexual wellbeing, while controlling for depressive and anxiety symptoms, and sexual approach and avoidance goals. Findings indicated that pornography use frequency and motivations might play prominent roles in couples' sexual wellbeing and may differentiate between favorable and less optimal correlates. *Men's* higher levels of emotional avoidance motivations were related to their own lower sexual wellbeing, while their higher levels of sexual curiosity motivations were associated with their own greater sexual wellbeing. *Women's* higher pornography use frequency (partnered and individual) was associated with their own greater sexual wellbeing. Findings support the Antecedents-Context-Effects (ACE) model of pornography use (Campbell & Kohut, 2017), which suggests that the context in which pornography is used may play a crucial role in the associations between pornography use and its potential outcomes.

Associations between Pornography Use Frequency and Sexual Wellbeing

Results partially supported our hypothesis that men's higher pornography use frequency would be associated with their lower sexual wellbeing, while women's higher pornography use frequency would be associated with their greater sexual wellbeing. In contrast with prior findings generally suggesting that men's pornography use frequency, particularly their individual pornography use frequency, is negatively associated with their sexual wellbeing (Vaillancourt-Morel et al., 2019; Wright et al., 2017), men's pornography use frequency (both individual and partnered pornography use frequency) was unrelated to their own or to their partner's sexual wellbeing

in the present study. These results suggest that, in the case of men, pornography use frequency itself may not be affecting their sexual wellbeing, and that other factors, such as motivations underlying their use, could play a role (Campbell & Kohut, 2017). These findings resonate with those of prior studies reporting that pornography use frequency may not differentiate well between favorable and less optimal sexual correlates (Bőthe, Tóth-Király, Potenza et al., 2020).

Concerning *women's* pornography use frequency, our hypothesis was supported. Women with higher levels of individual pornography use frequency reported more frequent partnered sexual activities. Moreover, women reporting higher levels of partnered pornography use frequency also reported greater sexual function and lower sexual distress. Women's more frequent pornography use, particularly partnered pornography use, could reflect more openness in sexual communication, as pornography use may provide opportunities for discussing sexual preferences (Hertlein et al., 2020; Kohut et al., 2017; McNabney et al., 2020; Vaillancourt-Morel et al., 2019). In a recent qualitative study, women reported that by selecting pornographic videos for their partnered pornography use, they did not have to explicitly disclose their sexual preferences, but were still able to share information about sexual preferences with their partners (e.g., they could "give hints" by selecting pornographic videos), potentially resulting in their greater sexual wellbeing (Hertlein et al., 2020). In sum, while men's pornography use frequency itself may not be related to their own or their partner's sexual wellbeing, women's more frequent pornography use may result in their own greater sexual wellbeing.

Associations between Emotional Avoidance Motivation and Sexual Wellbeing

Results partially supported our hypothesis that both partners' higher levels of emotional avoidance would be related to their own lower sexual wellbeing. *Men's* emotional avoidance motivation had a negative association with their own sexual function, and a positive association with their own sexual distress. In contrast with prior findings suggesting that men's pornography use frequency may have a negative association with their sexual wellbeing (Dwulit & Rzymski, 2019; Vaillancourt-Morel et al., 2019; Wright et al., 2017), our results suggest that men's pornography use frequency itself may not be related to their lower sexual wellbeing, but that emotional avoidance motivation underlying pornography use may be a more relevant predictor.

When men try to reduce their negative emotions and stress (i.e., emotional avoidance motivation), they may turn to pornography, as prior findings suggest that men reported higher levels of calmness and overall better mood after pornography use (Laier & Brand, 2017). However, this mood improvement was accompanied by lower levels of sexual arousal (Laier & Brand, 2017), suggesting that men using pornography to reduce their negative emotions may engage in less partnered sexual activities and may experience lower sexual wellbeing. From another perspective, using pornography for emotional avoidance purposes was also linked to higher levels of hypersexuality and problematic pornography use (Bőthe, Tóth-Király, Bella et al., 2020;

Reid et al., 2011), which in turn, were associated with lower levels of sexual wellbeing (Bőthe et al., 2017, 2020; Bőthe, Tóth-Király, Potenza et al., 2020; Štulhofer, Jurin et al., 2016; Wéry & Billieux, 2016). Thus, using pornography to reduce negative emotions and stress may be an indicator of potential underlying problematic pornography use (Bőthe, Tóth-Király, Bella et al., 2019; Khantzian, 1997), that in turn, may reduce men's sexual wellbeing.

Women's emotional avoidance motivation was not associated with any sexual wellbeing indicators. These results may relate to previous findings suggesting that women use pornography less frequently to cope with negative emotions and stress as 33% of men, but only 18% of women, reported using pornography for this reason in mixed-sex couples (Bridges & Morokoff, 2011). Thus, as emotional avoidance motivation may be less prevalent among women, it may not play a role in their own and their partner's sexual wellbeing.

Associations between Sexual Curiosity Motivation and Sexual Wellbeing

Our hypothesis that both partners' higher levels of positive motivations would be related to their own greater sexual wellbeing was only partially supported. *Women's* sexual curiosity motivation was unrelated to their own sexual wellbeing. In contrast, *men's* sexual curiosity motivation was positively associated with their own sexual function and satisfaction, and the couple's sexual frequency, while it was negatively associated with their own sexual distress. Our preliminary results with same-sex couples also showed that the actor's sexual curiosity motivation was positively associated with their own sexual function.

Men (and women) using pornography out of curiosity may not only learn about sexual activities, but may be more likely to try them in the form of sexual experimentation (Kohut et al., 2017), resulting in a higher frequency of partnered sexual activities. Moreover, pornography use may contribute to a higher erotic climate in the couple. Using pornography to learn about new sexual practices may result in more extensive knowledge about sexual activities, and lower levels of anxiety, shame, and guilt around sexual behaviors, resulting in lower sexual distress (Kohut et al., 2017; Staley & Prause, 2013; Wincze & Caird, 1976). Moreover, learning about new sexual practices may promote sexual responsiveness and normalize different sexual behaviors (e.g., oral sexual activities), thus providing a wider sexual repertoire, resulting in higher levels of sexual arousal, and desire (i.e., greater sexual function; Kohut et al., 2017; Prause & Pfaus, 2015).

Associations between Sexual Pleasure and Excitement Seeking Motivations and Sexual Wellbeing

Prior studies suggested that men's pornography use may reduce the couple's sexual wellbeing because men use pornography in a solitary manner for masturbation, and women may perceive it as men taking something away from the relationship (Bridges & Morokoff, 2011). However, in our study, *men's* sexual pleasure and excitement seeking motivations were unrelated to their sexual wellbeing. These findings are in accordance with recent results in individuals in mixed-sex

relationships (Kohut et al., 2017), showing that, in most cases, partners do not experience any adverse effects of pornography use on the relationship. Men may not use pornography for sexual fantasies and masturbation instead of partnered sexual activities. Rather, they may use it as a complementary sexual activity in the romantic relationship. Nevertheless, in some cases, one partner's pornography use may be related to their decreased interest in partnered sexual activities (Kohut et al., 2017), warranting further investigation.

Women's sexual pleasure motivation had a negative, moderate association with the couple's past-month partnered sexual frequency, suggesting that women who use pornography for sexual pleasure may engage in partnered sexual activities less frequently, presumably as a result of masturbation during pornography use (Baćak & Štulhofer, 2011; Prause, 2019). Nevertheless, as the present study used a cross-sectional design, it is also possible that those women who use pornography for sexual pleasure may do so because they have higher levels of sexual desire, and they are not satisfied with the frequency of partnered sexual activities. Prior results support this notion as women with high levels of sexual desire used pornography more frequently than women in the control group (Štulhofer, Bergeron et al., 2016).

Partner Effects in the Associations between Pornography Use and Sexual Wellbeing

As for partner effects, both *women and men's* pornography use motivations were unrelated to their partner's sexual wellbeing. Nevertheless, men's higher levels of sexual curiosity motivation, and women's higher individual pornography use frequency, were associated with a higher frequency of partnered sexual activities. These results are in line with prior findings and propositions that women's pornography use frequency may have a more positive association with the couple's sexuality because it represents more openness regarding sexual activities and a higher erotic climate in the couple (Bridges & Morokoff, 2011; Brown et al., 2017; Grov et al., 2011; Newstrom & Harris, 2016). Moreover, the use of pornography for knowledge expansion about sexual practices may be related to trying these new activities in one's sexual life, resulting in a higher frequency of partnered sexual activities (Kohut et al., 2017; Olmstead et al., 2013).

Implications

The present findings supported the proposition of the ACE model of pornography use (Campbell & Kohut, 2017), which emphasizes that a complex pattern of associations may be present concerning the associations between pornography use and the outcomes of pornography use in couples, and the context of pornography use may differentiate between favorable and less optimal outcomes. Our results suggest that motivations underlying pornography use may be considered as important differentiating factors in couples' sexual wellbeing, and as such, should be considered in theoretical models describing the potential effects of pornography use on couples. Moreover, our results highlight the importance of the need to examine additional, context-related characteristics of pornography use, such as secret use of pornography (Vaillancourt-

Morel et al., 2019) or problematic versus non-problematic use (Bőthe, Tóth-Király, Potenza et al., 2020) to better understand these complex, often intertwined associations between pornography use and sexual wellbeing in couples (Campbell & Kohut, 2017).

Therapists working with couples reporting sexual problems could dedicate more attention to identify not only partners' frequency of pornography use, but their pornography use motivations as well. As men's emotional avoidance motivation may reflect more general underlying difficulties in coping with negative emotions, promoting more adaptive emotion regulation strategies may be beneficial (Dhuffar & Griffiths, 2015; Sniewski et al., 2018; Wéry & Billieux, 2017). Given that men's sexual curiosity motivation was also related to their own sexual wellbeing and the frequency of partnered sexual activities, more attention should be paid to pornography literacy programs (Dawson et al., 2019; Vandenbosch & van Oosten, 2017; Wright et al., 2018).

Our results support the notion that more positive correlates may exist for women's pornography use (McNabney et al., 2020; Newstrom & Harris, 2016). Nevertheless, given that women using pornography may feel pressured to perform the sometimes unrealistic sexual acts in their partnered sexual interactions, or feel jealous of or try competing with the women in the videos (Grov et al., 2011; Kohut et al., 2017), the context of pornography use should always be considered when the associations between pornography use and sexual wellbeing are assessed (Campbell & Kohut, 2017).

Limitations and Future Directions

Although this study had several strengths, such as the use of multiple indicators of sexual wellbeing in a dyadic design, the findings should be considered alongside some limitations. Biases due to self-report scales (e.g., recall bias) and self-selection (i.e., using a convenience sample) may limit the validity and generalizability of the findings. Causality cannot be inferred from the present cross-sectional, correlational design; longitudinal studies are needed to examine the directionality of the associations between partners' pornography use motivations and sexual wellbeing. Cronbach's alphas for the excitement motivation in men and women, and depressive symptoms in men, were low in the present study, which may have biased the findings. The number of same-sex couples was small, resulting in non-significant associations. Same-sex couples included both woman-woman and man-man couples, but their data were analyzed together, which may further bias the findings. As important gender-based differences were observed in prior studies concerning pornography use and its associations with sexual wellbeing (Vaillancourt-Morel et al., 2019; Wright et al., 2017), woman-woman and man-man couples may report different experiences (Vaillancourt-Morel et al., 2020). Future studies should oversample sexual and gender diverse couples to further our preliminary results.

The present study only included four potential motivations underlying pornography use, and women reported significantly lower levels of all these motivations. These results may simply derive from the fact that in general, women are less inclined to use pornography than men (e.g., fewer women use pornography, and they use it less frequently than men (Bőthe et al., 2018; Grubbs, Kraus et al., 2019). However, it is also possible that the motivations assessed in the present study did not include those that may be more prevalent or as prevalent in women as in men, such as a self-exploration motivation (Bőthe, Tóth-Király, Bella et al., 2020). Future studies should include a more diverse set of potential pornography use motivations. Moreover, the moderating role of pornography use frequency in the associations between pornography use motivations and sexual wellbeing indicators should also be examined in future studies.

Conclusions

This study moved beyond previous intra-individual designs by using a dyadic framework and multiple indicators of pornography use and sexual wellbeing, which allowed for the examination of the associations between each partner's individual and partnered pornography use frequency, pornography use motivations, sexual satisfaction, sexual function, sexual distress, and the frequency of partnered sexual activities in romantic relationships. While men's emotional avoidance motivations were related to their own lower levels of sexual wellbeing, their sexual curiosity motivations were associated with their greater sexual wellbeing. At the same time, women's individual and partnered pornography use frequency were associated with their own greater sexual wellbeing. Findings highlighted that examining partners' pornography use motivations as well as their individual and partnered pornography use frequency may provide a better and more nuanced understanding of pornography use's association with couples' sexual wellbeing than examining the mere frequency of pornography use. This supports the Antecedents-Context-Effects (ACE) model of pornography use (Campbell & Kohut, 2017), which suggests that the context of use may play a crucial role in the outcomes of pornography use.

ORCID

Beáta Bőthe ⓘ http://orcid.org/0000-0003-2718-4703
Marie-Pier Vaillancourt-Morel ⓘ http://orcid.org/0000-0002-8634-3463
Sophie Bergeron ⓘ http://orcid.org/0000-0001-8601-761X

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