

Exploring the Relationship Between
Pornography Consumption and Sexual
Violence: The Role of Perceived Peer Rape
Myth Acceptance
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Abstract

Sexually violent behaviour typically develops in adolescence, when sexual scripts are formed. This development may be influenced by pornography consumption and perceived peer attitudes toward sex. Using an online survey design with university student participants (N = 628; 28.6% male) this study investigated the link between frequent consumption of pornography, and watching violent pornography with sexual violence perpetration. Further, it was investigated whether perceived peer rape myth acceptance (RMA) moderates this relationship. Results showed that participants who watched violent pornography reported a higher number of sexual perpetration incidents. Further, it was found that the more participants perceived their peers as condoning of rape myths the more likely they were to be impacted by watching violent pornography consumption, with higher numbers of sexually violent incidents reported. This study was important to replicate existing literature and to show that research should continue to investigate how other factors combined with pornography consumption may lead to sexual perpetration. The relevant findings from this study should be integrated into social-emotional learning strategies targeting risk factors of sexual violence of on-campus prevention programs (White House Task Force to Protect Students From Sexual Assault, 2014b). These programs focus on increasing awareness, providing empowerment opportunities, supporting victims and ultimately preventing sexual assault (Dills et al., 2016; Wooten, 2016).

Keywords: Sexual violence, pornography consumption, violent pornography, rape myth acceptance (RMA), peer influence, perceived peer RMA.

Exploring the Relationship between Pornography Consumption and Sexual Violence: The Role of Perceived Peer Rape Myth Acceptance

Sexual violence is a common and problematic issue in the public health sector (Borgogna et al., 2021; Iconis, 2011; Trottier et al., 2019). It occurs on a continuum of severity, ranging from coercion to physical assault and rape (CDC, 2023). Sexual violence can lead to negative and long-lasting consequences (Dyer et al., 2022), such as substance abuse, sexually risky behaviour, and sexual victimisation (Davis et al., 2006; Kaufman et al., 2019). According to the United Nations Development Fund for Women, one in three women has been exposed to some form of sexual violence throughout their lifespan (United Nations Development Fund for Women, 2008). Even though the estimates of prevalence that exist in literature vary, these tend to be an underestimation of reality, given the staggering number of cases that go unreported (Paul et al., 2009). One particular context in which sexual violence is especially prevalent is within higher education (Steele et al., 2022). This is in part because adolescents and young adults show the highest incidence of sexual victimisation (Lichty & Gowen, 2018; Steele et al., 2022). Further, the environment surrounding higher education is prone to the enabling of sexual violence, as it has particular characteristics that allow sexual violence. Characteristics such as, having a hierarchical structure, existence of toxic academic masculinity and acceptance of gender-based violence, are conducive to sexual perpetration and sexually violent incidents (Ybarra & Petras, 2020).

It is well established that adolescence is a setting stage for the development of sexuality. It is during this period that individuals develop cognitive scripts that inform how they view the world. These scripts are largely influenced by external experiences, such as exposure to media and affiliation to certain individuals. Therefore, if any sexually aggressive tendencies develop, it

is probable that this takes place during the adolescent period (Dunn & Orchowski, 2021; Waterman et al., 2022). According to a National Youth Survey, 70% of high school boys committed their first sexually violent act before the age of 17 (Dunn & Orchowski, 2021). Additionally, a longitudinal study analysed adolescents and young adults aged between 13 and 25 across seven periods in time between 2006 and 2016. Results from this study showed that three in five adolescents who committed a sexual offence at the early waves of the study, continued to perpetrate sexually violent behaviour over time (Ybarra & Petras, 2020). Finally, a study on youth aged between 14 and 21 years showed that one in 10 participants reported some forms of sexual perpetration throughout their lifetime with 9% reporting attempted or completed rape (Ybarra & Mitchell, 2014).

A large body of research has identified risk factors related to sexual violence, including pornography consumption (Foubert & Bridges, 2016) and acceptance of stereotypical ideas surrounding sexual violence (e.g., rape myth acceptance; Steele et al., 2022). Additionally, several well-established models have been developed to help understand predictive factors of sexual violence. An example of such a model is the confluence model of sexual aggression, which suggests that sexual violence can be explained through a combination of personality traits (e.g., predisposition for aggression), behavioural factors (e.g., peer pressure for sexual activity), and developmental factors (e.g., interaction with peers who approve sexual violence; Huntington et al., 2020; Ybarra & Thompson, 2017). More recently, pornography consumption was added to this confluence model of sexual aggression as a predicting factor for sexual violence. This happened as it was found that after considering all factors that encompass this, pornography consumption significantly predicted sexual aggression, both individually and in combination with the other factors (Baer et al., 2015; Vega & Malamuth, 2007). Exposure to pornography by

itself might not be as problematic as other factors such as predisposition for aggression. However, when combined with pre-existing sexually violent cognitions, and attitudes, the frequent exposure to pornographic content may play a reinforcing role, exacerbating the magnitude of these pre-existing characteristics, and hence leading to sexual violence (Hald & Malamuth, 2014). In fact, Huntington et al., (2020) replicated these findings when applying the confluence model of aggression in a sample of adolescent boys. Particularly, it was found that exposure to violent pornography was a modelling factor in sexual perpetration among adolescent males. This supports the point discussed earlier that during adolescence, one's behaviour and attitudes are substantially influenced by what one is exposed to, in this case violent pornography.

Investigating risk factors for sexual violence is of the utmost importance for the younger population. Sexual violence has its roots in the adolescence, as it is during this developmental stage where individuals are most vulnerable to the influence of many factors that may negatively impact the development of sexual beliefs, attitudes and behaviours (Kaur & Kaur 2016). Therefore, understanding how numerous risk factors impact individuals' development and subsequent behaviour, might contribute to the development and improvement of university-based prevention programs, targeting the prevention of sexual violence. Examples of such risk factors that have been widely investigated in its predictive relation to sexual violence are pornography consumption and rape myth acceptance (RMA).

Pornography consumption

In recent years, pornography has become more popular and easily accessible. Nowadays, and according to internet pornography statistics, there are more than 4.2 million websites containing pornography, with more than 28.000 individuals consuming its content at every second, and 1.5 billion of downloads per month (Ropelato, 2006). For instance, the platform

Pornhub is considered the 9th most viewed website around the globe, and its monthly visits nearly doubled within a ten-year period, between 2006 and 2016 (de Heer et al., 2021; Farrington, 2021). Additionally, a survey on adolescents and young adults found that 100% of men and 81% of women reported to have viewed pornography at least once in their lifetime (Carrotte et al., 2020). Existing literature has focused on several factors associated with pornography, such as what being depicted nowadays in online pornography. Particularly, studies have shown that depictions of violence (Foubert & Bridges, 2016) and gender inequalities are increasingly common in pornography (Carrotte et al., 2020). Recent research has shown that approximately 40% of the existing online pornographic content depicts sexual violence, ranging from verbal to physical violence (Shor & Seida, 2020). Watching violent pornography is associated with condoning of violence against women, sexual coercion, and intention to perpetrate in hypothetical scenarios (Foubert & Bridges, 2016; Wright et al., 2015). Another interesting factor regarding the consumption of pornography relies on the underlying motivation to seek pornographic content in the first place. It is assumed that the primary motivation underlying pornography consumption is to achieve sexual stimulation or gratification. However, Foubert and Bridges (2016) have found that this is not the case for the younger population. The majority of young people who use pornography, do so out of curiosity, by accident, or to seek information.

Adolescence is a central developmental period for acquiring sexual knowledge and experiences (Rothman et al., 2021). Hence, frequently watching pornography as an adolescent may impact the development of healthy sexual relationships and behaviour. It is during this developmental stage that young people become interested in sex, and considering the accessibility of pornography, adolescents turn to it as a source of sexual education (Rothman et

al., 2021). This interest in pornography prevails throughout higher education, as 48% of university students view pornography weekly and approximately 87% watch it yearly (Foubert & Bridges, 2016). Research has suggested that both watching pornography more frequently (Waterman et al., 2022) and watching more violent genres of pornography (Carrotte et al., 2020) are associated with a higher likelihood of sexual violence. This link may be explained by cultivation theory. This is a sociological framework hypothesising that the more people are exposed to media, the more likely they are to perceive the world in a manner consistent with what is being depicted in the media (Waterman et al., 2022). When applying this to pornography consumption, those who frequently watch pornography would be more likely to hold sexual views similar to what is depicted in pornography, namely gender inequalities in sex roles, violent attitudes against women, and sexual violent behaviour. In an attempt to test this reasoning, a study examined the bidirectional temporal order that exists between pornography consumption and sexual violence. For this, at five different points in time over three years, researchers asked high school students whether they watch pornography frequently. Results showed that participants who reported continuously watching pornography at the later waves of the study, reported more incidents of sexual perpetration. However, it was also found that reporting more incidents of sexual perpetration did not predict subsequent pornography consumption, and hence reflecting solely a unidirectional predictive role of pornography consumption on sexual violence (Waterman et al., 2022).

Another important theory to help understand how pornography consumption may impact sexual knowledge and experiences in the younger population is the sexual script theory. This theory suggests that sexuality is largely determined by internalised scripts (Wiederman, 2015). Considering that a large percentage of pornography depicts violence, as adolescents watch

pornography to learn about sex, sexually violent attitudes and behaviour will most likely be what they internalise as normal and desirable for future sexual encounters (Carrotte et al., 2020; Wiederman, 2015). Pornography, therefore, becomes a source of sexual scripts for young people (Tarzia & Tyler, 2020). A meta-analysis showed that exposure to frequent and violent pornography in adolescents was related with the development of more sexually permissive attitudes, stereotypical gender beliefs, objectification of the female gender and sexual aggression (Peter & Valkenburg, 2016). In fact, a study found that high school adolescent boys who were exposed to violent pornography showed to be twice as likely to display dating violence compared to the ones who did not watch violent pornography (Rostad et al., 2019).

Although some studies have shown that pornography may have a cathartic effect and decrease the likelihood of sexual violence (Foubert & Bridges, 2016), the majority of research shows the opposite effect. Particularly that watching pornography more frequently and having interest in more violent types of pornography is associated with higher likelihood of sexual violence (e.g., sexual harassment, rape). This relationship between pornography consumption and sexual violence has also been described as complex (Ferguson & Hartley, 2022). Specifically, pornography consumption in itself is not a significant predictor of sexual violence, however when combined with other variables, it becomes problematic, exacerbating sexual violence. One such example of these variables are hostile views and attitudes against women, including the acceptance of rape myths (Ferguson & Hartley, 2022).

Rape Myth Acceptance (RMA)

Rape myths were first defined in the 1980s as “prejudicial stereotypes and false beliefs about rape, rape victims, and rapists” (Burt, 1980, p. 217). Research suggests that rape myth acceptance enables the rationalisation of problematic behaviour and acts as a “psychological

neutraliser” against sexually inappropriate behaviour (Bohner et al., 2006). Numerous studies have shown that both women and men from divergent backgrounds accept rape myths (Iconis, 2011). Beliefs formed by rape myths also have implications for sexual violence, as they are responsible for shaping one’s perceptions and development of sexual scripts of what is normalised in terms of sexual behaviour. RMA is indirectly linked to sexual violence (Collibee et al., 2019; Trottier et al., 2019). However, research has further suggested that a proclivity for sexual violence may also be indirectly influenced by the perceived RMA of individuals’ counterparts (Bohner et al., 2006). Particularly, and from the sexual script theory perspective, one’s sexuality is largely dependent on internalised scripts (Wiederman, 2015), and as such, interacting with people who condone rape myths will likely influence one to internalise these rape myth scripts as normal and acceptable.

Looking specifically at adolescence, this is a developmental phase in which peers have a tremendous influence on social, cognitive and psychological development (Collibee et al., 2019, Kaur & Kaur 2016). It is during this stage, that adolescents turn to their peers for support and guidance on what is considered acceptable and normalised (Dunn & Orchowski, 2021). Which in turn, has a significant impact on how adolescents and young adults internalise their sexual scripts (Collibee et al., 2019). This is consistent with homophily theory, which suggests that individuals tend to embrace similar attitudes, beliefs and behaviours to the people they are affiliated with (Collibee et al., 2019). Particularly, if adolescents and young adults perceive their peers as condoning rape myths and sexual violence, it is likely they will internalise these into their cognitive sexual scripts (Collibee et al., 2019; Dunn & Orchowski, 2021). Following this, a study analysing high school boys found that perceiving peers as condoning of violence was a positively

associated with less concern for obtaining sexual consent in future sexual encounters, as well as with increase gender equitable attitudes (Dunn & Orchowski, 2021).

Furthermore, research has suggested a link between pornography consumption and RMA (Borgogna et al., 2021). The few studies that have focused on the relationship between these two factors show a positive relationship between frequently watching violent pornography and RMA (Borgogna et al., 2021; Foubert & Bridges, 2016). Specifically, it has been hypothesised that RMA and pornography consumption may maintain and exacerbate one another (Foubert & Bridges, 2016). Nevertheless, there is still a gap in the literature regarding the extent to which the interaction between frequently watching violent pornography and perceived peer RMA is associated with sexual violence.

Present study

Prior research suggests that violent pornography consumption is associated with sexual violence, and that RMA can indirectly influence sexual violence. Nevertheless, to address the gap of knowledge, this study examined the relationship between frequency/genre of pornography consumption and sexual violence as well as how perceived peer RMA moderates this relationship.

Given the existing literature, it is firstly hypothesised that more frequent pornography consumption is associated with higher levels of sexual violence perpetration. Secondly, it is hypothesised that viewing more violent genres of pornography is associated with more sexual violence perpetration. Thirdly, it is hypothesised that perceived peer RMA moderates the relationship between pornography consumption and sexual violence. Pragmatically, it can be predicted that perceiving peers as condoning of rape myths, in combination with frequently

watching violent pornography may lead to internalising sexually violent scripts, leading to higher likelihood of sexually violent behaviour.

Methods

Participants

The initial sample consisted of 775 participants, of which 73 were removed for finishing the questionnaire in under 5 minutes, 45 were removed for completing less than 90% of the questionnaire, and another 29 were removed because they did not answer the question of whether they were students. The final sample consisted of 628 participants eligible for analysis (66.1% female, 28.6% male, 1.5% non-binary). Participants' age ranged from 18 to 42 years ($M = 22.05$; $SD = 3.41$). Overall, the sample consisted largely of heterosexual (71.1%), white individuals (75.8%), in a relationship (44.7%), who were fluent in English (58.3%). For more detailed characteristics of the sample, see Table 1. The only inclusion criteria for this study were that participants must be university students anywhere in the world and that they must be eighteen years or older. Participants were recruited through online platforms, and after completing the questionnaire, they were given the opportunity to win a 25-euro Amazon voucher. Additionally, students participating in the study through the student platform were rewarded with participation credits.

Table 1
Overview of Demographic Factors of Participants

Demographic	Frequency (%)
Sexual orientation	
Heterosexual	467 (71.1%)
Homosexual/Gay/Lesbian	44 (6.7%)
Bisexual	106 (16.1%)
Ethnicity	
White	498 (75.8%)
Hispanic, Latino or Spanish	21 (3.2%)

Black or African American	18 (2.7%)
Asian	38 (5.8%)
American Indian or Alaskan Native	4 (.6%)
Middle Eastern or North African	34 (5.2%)
Other	24 (3.7%)
Sexual Orientation	
Single	277 (42.2%)
Dating	64 (9.7%)
In a Relationship	284 (44.7%)
English first language	
Yes	146 (22.2%)
No	103 (15.7%)
No, but I speak fluently	383 (58.3%)
Employment Status	
Employed fulltime	89(13.5%)
Employed part time	265 (40.3%)
Unemployed, looking for work	83 (12.6%)
Unemployed, not looking for work	112 (17%)
Unable to work	6 (.9%)
Other	78 (11.9%)
Highest level of education	
Less than high school	5 (.8%)
Highschool diploma	233 (35.5%)
Vocational degree	13 (2%)
Some University, no degree	159 (24.2%)
Associate's degree	9 (1.4%)
Bachelor's degree	158 (24%)
Master's degree	54 (8.2%)
Doctoral degree	8 (1.2%)

Materials

This study was part of a larger study looking at views on various issues related to sexual experiences and related measures.

Sexual Experiences Survey-Short Form Perpetrator (SES-SFP)

The SES-SFP is a 38-item questionnaire focused on personal sexual experiences. It is one of the most used questionnaires investigating sexual perpetration (Anderson et al., 2017). It clusters different descriptions of unwanted sexual contact and has the following seven subscales: fondling, oral penetration, vaginal penetration, anal penetration, attempted oral penetration, attempted vaginal penetration, and attempted anal penetration. In the first 35 questions, participants were asked to indicate the number of times (0, 1, 2 or 3+) they had engaged in the respective activity during the period of their studies. Each subscale first presented the sexual outcome (e.g., fondling, oral penetration), followed by five possible strategies to achieve this outcome: verbal pressure, verbal criticism, incapacitation, physical threats, and physical force (Anderson et al., 2017). An example of such an item is the following: “When I was a student, I fondled, kissed or rubbed against the private areas of somebody’s body (lips/breasts, crotch or butt) or removed some of their clothes without their consent (but did not attempt sexual penetration) by: (a) telling lies, (b) showing displeasure, (c) taking advantage, (d) threaten physically, (f) using force”. The remaining three items asked for the gender of the participant, whether the participants did any of the acts described in the questionnaire more than one time, and lastly, whether they acknowledged rape. This last item was not included in the main analysis; however, it was investigated for its frequency scores. For the scoring, each item was reverse coded so that rating of 0 reflects that the participant never engaged in that behaviour and a score and rating of 3 reflects that it happened more than 3 times. For each subscale, all the five strategy scores were added up, to a total score for that subscale. These scores were used to investigate the frequency scores for each subscale. For the main analysis, then all the subscale scores were added up to a total score, reflecting sexual violence. Possible scores ranged from 0 to 105, where scores indicate a greater number on incidents of sexual perpetration/violence. The

original SES is known to have a good internal consistency ($\alpha = .89$; Anderson et al., 2017). For this study, reliability for the SES-SFP was $\alpha = .99$.

Pornography Consumption Questionnaire

The Pornography Consumption Questionnaire is a 9-item questionnaire used to investigate pornography consumption (Hald, 2006). Items include: frequency, perceived realism, genre, age at first use, and acceptability among others. For the purpose of this study, only three items were used: two for frequency and one for genre. For frequency, two questions were asked: “In the past six months, how often did you use pornography?”. This was scored using a 6-point Likert scale ranging from “more than five times per week” to “never in the last six months”. The second question reads: “On average, how many hours a week did you use pornography in the past six months?”. This question was also scored on a 6-point Likert scale ranging from “Never in the last six months” to “More than 10 hours” (Hald, 2006). Higher scores on either of the two frequency-related items reflected a higher frequency in pornography consumption. In terms of genre, participants were asked whether they watched the following genres: vaginal penetration, anal penetration, oral sex, fetish/BDSM, violent sex/rape scenarios, teens and group sex (yes / no). For this study only the violent sex/rape was used in the analysis. Overall reliability for the pornography consumption variables in this study was $\alpha = .65$.

Illinois Rape Myth Acceptance Scale- Short Form (IRMA-SF)

The IRMA-SF is a 20-item scale that measures rape myth acceptance. This questionnaire is scored on a 5-point Likert scale ranging from “strongly agree” to “strongly disagree” (Thelan & Meadows, 2021). For the current study, this questionnaire was used to investigate the perceived peer RMA. Participants were asked to think of their three closest friends and to rate to what extent they think their friends would agree with the given statements. The statements were

clustered into the following topics: (1) she asked for it (e.g., “A woman who “teases” men deserves anything that might happen”), (2) It wasn’t rape (e.g., If the rapist doesn’t have a weapon, you can’t call it rape”), (3) He didn’t mean to (e.g., “Men don’t usually intent to force sex on a women, but sometimes they get too sexually carried away”), (4) She wanted it (e.g., “Many women secretly desire to be raped”), (5) she lied (e.g., “A lot of women lead a man on and then cry rape”), (6) rape is a trivial event (e.g.,” Women tend to exaggerate how much rape affects them”), (7) rape is a deviant event (e.g., “Men from nice middle-class homes almost never rape”), and (8) filler items (e.g., “All women should have access to self-defense classes”) (Thelan & Meadows, 2021). The ratings of all items were added up to a total score with higher scores indicating greater peer RMA. For this study, the reliability for the IRMA was $\alpha = .95$.

Procedure

A flyer with a link to the online questionnaire was posted on social media (e.g., Reddit, Instagram, LinkedIn), student platforms, and shared among WhatsApp groups, etc. Once the students opened the link, they received introductory information and were briefed on the upcoming questionnaire. This included the nature of the study, confidentiality/anonymity, and additional support information. Participants were then asked to provide consent for the study and whether they were currently studying at a university. Participants then answered the questionnaires in randomised order. At the end of the questionnaire, participants were given the chance to provide their details for the raffle of a 25-euro Amazon voucher. Once the data collection was completed, the project raffled a total of ten of these vouchers. Additionally, all students accessing the link through the student platform were granted participation credits.

Statistical analysis

Data were analysed using the IBM SPSS statistics program (Version 25, 2017).

The first step of the data analysis is a univariate analysis, involving descriptives and frequencies of sample characteristics. Additionally, frequencies of the dependent variable (sexual violence) and the two factors (frequency and genre) of the independent variable (pornography consumption) were also investigated. After this, the assumptions of normality, linearity, and homoscedasticity were checked.

The second step in the analysis is a bivariate analysis. This was computed to assess the linear relationship between all the variables. For this, correlations between the following variables were plotted: frequency of pornography consumption, sexual violence, and perceived peer RMA. This was also used to check the assumption of multicollinearity.

The third step of the analysis was a multivariate analysis. As a first analysis, a multiple regression analysis was conducted. For this, the continuous dependent variable was sexual violence, and the independent variables were the following: the two variables on frequency of pornography consumption (all continuous) and the dichotomous variable on genre of pornography consumption. This latter variable was dummy coded before the start of the analysis, with the reference group being 0 equals no.

Lastly, using the PROCESS macro within SPSS, a moderation analysis was conducted to investigate whether perceived peer RMA moderates the relationship between frequency of pornography consumption and sexual violence. For this analysis, sexual violence will be used as the dependent variable, pornography consumption as the independent variable, and perceived peer RMA as the moderator. Particularly for this analysis, a significant moderation effect is

expected, reflecting a significant interaction between pornography consumption and perceived peer RMA.

Results

First, univariate analysis showed that 23% of participants watched pornography 1-2 times per week within the last six months, 22% 3-5 times and 21% never. The results also showed that participants spent less than one hour per week watching pornography (45%) and 22.5% spent between one and three hours. Furthermore, one in five participants watched violent pornography. In terms of perceived peer RMA, scores ranged from 17 to 87 ($M = 27.70$; $SD = 12.56$). Scores on the overall dependent variable, sexual violence, ranged from 0 to 74 ($M = 6.77$; $SD = 17.19$). This means that on average, participants admitted to approximately 7 incidents of sexual perpetration. When breaking down this overall score into the different types of perpetrations, it was observed that one in four participants reported attempted vaginal penetration. Additionally, 9.1% of participants reported that they may have ever raped someone, whereas 90.2% reported never having raped someone. Interestingly, 24.1% of participants reported completed vaginal penetration without consent. For details regarding the different kinds of sexual perpetration see Table 2. Considering the Central Limit Theorem, the assumptions of normality and linearity were met.

Table 2.

Overview on Frequency and Percentage Scores of the Total Sample of Participants who Admitted to Different Types of Sexual Violence

	Admitted to Sexual Perpetration Frequency (%)
Type of Perpetration	
Fondling	143 (22.1%)
Oral Penetration	116 (18%)

Vaginal Penetration	156 (24.1%)
Anal Penetration	157 (24.3%)
Attempted Oral Penetration	111 (17.2%)
Attempted Vaginal Penetration	164 (25.4%)
Attempted Anal Penetration	158 (24.5%)

Secondly, bivariate correlations revealed that all variables showed a significant and positive correlation with each other. For detailed information about the correlations see Table. 3. From the correlation table it was also observed that there is no multicollinearity between the variables as the values do not exceed the cutoff of .8 or .9.

Table 3.

Correlations between Perceived peer RMA, Sexual violence and the three variables of pornography consumption.

	1	2	3	4	5
1. Perceived peer RMA					
2. Sexual perpetration	.71***				
3. Pornography last 6 months	.32***	.24***			
4. Pornography hours a week	.35***	.37***	.68***		
5. Violent pornography	.59***	.59***	.32***	.34***	

Note. ***p<.001, **p<.01, *p<.05

Thirdly, a multiple regression was conducted to predict sexual violence based on average pornography use in last six months, average hours per week watching pornography, and consumption of violent pornography. Outliers were identified, however none of these were removed as the sample size is quite large and an extreme score is still a valid score. Further, Cook's distance (.05) revealed no issue. Finally, multicollinearity characteristics (Tolerance and VIF) showed to be within normal ranges for all variables. This supports the findings abovementioned that there is was multicollinearity in the sample.

The multiple regression model was significant ($F(3, 502) = 104.22, p < .001$) with an $R^2 = .38$, suggesting that 38.4% of the variation in sexual violence was explained by the three variables of pornography use (See Table 4). All three predictors entered in the model were significant, although how often in the last six months had a negative regression coefficient. It is important to mention that this research yield no conclusions regarding the temporal order of events between pornography consumption and sexual violence perpetration.

Table 4.

Results of multiple regression analysis on times, average and genre of pornography consumption

	<i>b</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	<i>CI (95%)</i>	<i>Part correlations</i>
How often last six months	-1.37	.57	-.16	-2.39	.017	(-2.5, -.24)	-.08
Average hours / week	5.05	.92	.27	5.47	<.001	(3.2, 6.8)	.19
Genre: Violent pornography (yes/no)	25.16	1.77	.53	14.18	<.001	(21.67, 28,64)	.50

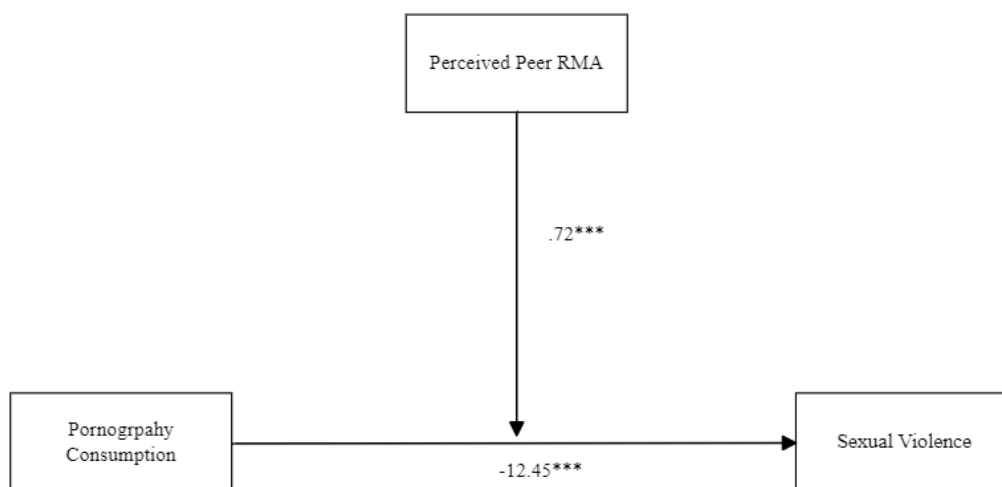
Note. *** $p < .001$, ** $p < .01$, * $p < .05$

Lastly, a simple moderation analysis was conducted using PROCESS. The outcome variable was sexual violence. The predictor variable was watching violent pornography. This is because in the multiple regression analysis, watching violent pornography was the variable that explained the most variance from the dependent variable. The moderator variable used for the analysis was the perceived peer RMA. Results showed that the interaction between watching violent pornography consumption and perceived peer RMA was statistically significant [$b = .72$, 95% C.I (.55, .90), $t = 8.28, p < .001$]. Perceiving peers as condoning of sexual violence exacerbated the impact that watching violent pornography has on sexual violence (See Image 1.). The conditional effects of the frequency of pornography consumption on sexual violence on

different levels of perceived peer RMA showed the following results. At low levels of perceived peer RMA, no significant relation [$b = .66$, 95% C.I (-3.67, 4.98), $t = .30$, $p = .76$], at an average level of perceived peer RMA, a significant positive relation [$b = 4.30$, 95% C.I (.57, 8.02), $t = 2.26$, $p = .02$], and at a high levels of perceived peer RMA, a significant positive relation [$b = 17.87$ 95% C.I (14.83, 20.91), $t = 11.56$, $p < 0.001$].

Image 1.

Results of Moderation of Perceived Peer RMA on Violent Pornography Consumption with Sexual Violence



Discussion

The present study examined the degree to which the frequency of pornography consumption and watching violent pornography contributed to the perpetration of sexual violence. It was hypothesised that watching pornography more frequently would contribute to higher levels of sexual perpetration. The results partially support this hypothesis by showing that watching pornography for more hours a week was linked with more sexual violence perpetration incidents. However, it was also found that participants who watched pornography more frequently over a period of six months reported fewer sexual violence perpetration incidents.

Secondly, it was hypothesised that watching violent pornography would also be associated with higher levels of sexual perpetration. Results support this hypothesis by showing that participants who watch violent pornography reported more sexual perpetration incidents than those who did not. Further, this study examined how perceived peer RMA moderated the relationship between pornography consumption and sexual violence. For this, it was hypothesised that there would be a moderating relationship between these variables. Results supported this latter hypothesis, as it was found that the more participants perceived their peers as condoning rape myths the more, they were impacted by watching violent pornography, with a higher number of sexually violent incidents reported.

The main findings of this study show how peer influences may moderate the impacts of pornography consumption on university students. Particularly, it was found that perceiving peers as opposing rape myths did not affect whether participants were impacted by watching violent pornography or not. However, perceiving peers as condoning rape myths served as a risk factor, aggravating the negative impacts of watching violent pornography. One underlying explanation for this, is that participants who are affiliated with peers who condone rape myths, are likely to internalise these schemas into their cognitive sexual scripts (Collibee et al., 2019; Dunn & Orchowski, 2021). These sexual scripts that are largely influenced not only by peers but also by media (Waterman et al., 2022), are then confirmed by what is being depicted in the violent pornography these participants are exposed to. Which in turn, reinforces cognitive scripts of what is normalised in terms of sexual behaviour. It is well established that individuals' sexuality is mostly dependent on internalised scripts (Wiederman, 2015). Therefore, participants beliefs of what is accepted in regards to sexuality, will reflect how they will behave in future sexual encounters, leading to potentially sexually violent behaviour towards their counterparts. Broadly,

results show that the more participants perceive peers as condoning rape myths, the more likely they are to be impacted by watching violent pornography, and subsequently report more sexually violent incidents. This shows that violent pornography consumption only potentiates sexual violence when combined with a third factor, which is consistent with the confluence model of aggression and the scientific consensus (Ferguson & Hartley, 2022; Huntington et al., 2020; Ybarra & Thompson, 2017). In the scientific field, the impact of pornography consumption on sexual violence has been characterised as complex. In fact, other studies have shown how pornography consumption only leads to more sexually violent behaviour, when moderated by a third variable. For instance, a study observing the different impacts of violent pornography consumption on sexual violence in a sample of young men found that violent pornography consumption exacerbated sexual violence, only when there was a predisposition for aggression (Malamuth et al., 2011). Further, a meta-analysis found that pornography consumption aggravated sexual violence when coupled with high perceived realism for what was being depicted, but not for low perceived realism (Gunnoo & Powell, 2023). This finding is important for future research, as well as for existing higher educational prevention programs on sexual assault, as it is important to educate university students about the power and impacts of peer influences. Ultimately, this education will allow students learn, reflect, and eventually reconsider the peers they are affiliated with.

Unexpectedly, it was found that when frequent pornography consumption was considered within longer periods, participants who watched it more frequently, reported fewer incidents of sexual violence. This is a surprising finding as it was expected that participants who would report consuming pornography more frequently within a week-time frame, would also consistently report the same frequency across different times periods (i.e., past six months). However, no

accurate interpretation was found for the underlying phenomena. Nevertheless, a possible alternative explanation for this unpredictability, may relate to memory bias. Particularly, that asking participants how often they watched pornography in the last six months, uses a period within which the reliability of participants' memory is likely to be compromised. Memory is susceptible to false retrieval and reconstruction, and thus recalling over longer periods is less accurate than within shorter periods, which may lead to less reliable results (Ikier et al., 2022).

Overall, the findings of the current study are particularly relevant from a preventive perspective. Around the world, there are several on-campus prevention programs aimed at decreasing and ultimately preventing sexual violence. The foundation of these programs is to promote social norms, teach skills, provide empowerment opportunities, support victims, and create protective environments, that all together prevent sexual violence. Many of the prevention programs available take on a trauma-informed approach, considering the victim's needs, and vulnerabilities while avoiding re-traumatisation and victim blaming (Dills et al., 2016). Trying to prevent sexual violence through on-campus programs is ideal as there is an opportunity to make a connection between research and practice, with a central focus on increasing students' well-being (Wooten, 2016). The findings from this study are important to be included in the social-emotional learning aspects of prevention programs (Dills et al., 2016). Particularly, it would be relevant to highlight from the findings of this study that even though legally, 24% of students met the criteria for completed rape, solely 9% said yes when asked the question directly. Equally significant is that one in five students watches violent pornography, that students report on average seven perpetration incidents, and that the most common type of perpetration among university students is vaginal penetration, with one in four students reporting it. These are all important findings supporting existing estimates on student populations (Ybarra & Mitchell,

2014), and are hence an added value to be included as a learning component in prevention programs worldwide.

This study is scientifically relevant, not only when considering its findings but also when considering its methodology. The current research was able to gather a large sample of university students, from different universities and backgrounds, which enables more accurate and reliable results. The majority of the questionnaire was focused on sexual violence and tackled perpetration through different angles (e.g., the MeToo movement, sexual perpetration experiences, rape myths). Throughout the questionnaire, participants were asked extensively about perpetration and even though there might be a level of social desirability, this study yielded relevant findings. Additionally, this was the first study to show how peer influence can harm the impacts that pornography consumption has on sexual violence. Despite the strengths of this study, there are limitations to consider. Firstly, this study was not able to examine the temporal order between pornography consumption and sexual violence. It is possible that participants who reported a higher number of sexually violent incidents may seek violent pornography. Instead, this study was only able to establish that there is a relationship, but not its underlying causality. Furthermore, the majority of the sample for this research was heterosexual (71%) and as such, this study can only come to conclusions concerning heterosexual individuals. It has been previously shown that homosexual/bisexual men watch approximately two times more pornography than heterosexual men (Whitfield et al., 2017) and that the LGBTQ population is less susceptible to the impacts of watching pornography (Böthe et al., 2019). Therefore, it can be expected that the role of pornography consumption in exacerbating sexual violence differs as a function of sexual orientation, and as such, this should be examined in the future. Future research should consider the present results, and investigate them further by

thriving for methodological consistency to safeguard reliability. Additionally, future directions should try to establish a temporal order between pornography consumption and sexual violence, as well as investigate more potential moderating variables.

Taken together, by showing that the impacts of pornography consumption on sexual violence are dependent on a third factor, this study makes an important scientific contribution not only to the research field but also for the development and improvement of prevention programs in university campuses. Particularly, it sheds light on potential risk factors (i.e., perceived peer RMA), which is relevant information to be integrated into prevention policies, social-emotional learning, and promoting social norms within the prevention programs (Dills et al., 2016). Existing on-campus prevention programs such as the White House Task Force to Protect Students From Sexual Assault can benefit from the findings of this study, to make their prevention programs more content-rich and successful.

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