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Sex Health. Author manuscript; available in PMC 2025 May 01.

Published in final edited form as:

Sex Health. 2024 May ; 21: . doi:10.1071/SH24025.

Adolescents' Pornography Viewing Frequency and its Relationship with Condom Attitudes

Emily F. Galper[1], **Laura Widman**[2], **Julia Brasileiro**[2], **Seth M. Noar**[1]

[1]Hussman School of Journalism and Media, University of North Carolina at Chapel Hill, NC, USA

[2]Department of Psychology, North Carolina State University, Raleigh, NC, USA

Abstract

Background: This study examined adolescent pornography viewing and its' relationship with condom attitudes.

Methods: Data were from 457 adolescents aged 13–18-years old who completed an online survey assessing pornography viewing frequency and condom attitudes.

Results: Many adolescents in our sample had viewed pornography in the past year (n=188, 41%), with pornography viewing frequency being higher among older adolescents (p=.02), those who had had sex in the past year (p=.001), and those who identified as White (p=.01), LGB+ (p=.05), and male (p=.001). Adolescents who viewed pornography more frequently had more negative condom attitudes (r= −.18, p<.001), and this relationship was invariant across age, gender, race/ethnicity, sexual orientation, and sexual intercourse status.

Conclusions: A substantial proportion of adolescents in our sample viewed pornography and those who view more frequently had more negative condom attitudes. Results indicate a need for experimental studies examining this relationship and interventions addressing pornography literacy among adolescents.

Keywords

pornography; pornography viewing frequency; condom attitudes; adolescents; sexual health; health promotion; media effects; sexuality

The U.S. saw more than 2.6 million cases of chlamydia, gonorrhea, and syphilis in 2019 with cases rising in the newly released 2020 STD surveillance report (1,2). According to the Centers for Disease Control and Prevention (CDC), more than half of reported STD cases occurred in youth aged 15–24 years old, despite representing only 25% of the population (3,4). Preventing STIs during adolescence is crucial due to the potential for long-term health complications, including pelvic inflammatory disease, infertility, and cervical cancer (5). Consequently, addressing STI prevention is a vital public health concern, necessitating efforts to enhance understanding and promote safer sexual behaviors.

Correspondence: Correspondence concerning this article should be addressed to Emily F. Galper, Hussman School of Journalism and Media, 364 Carroll Hall (CB 3365), University of North Carolina at Chapel Hill, NC, 27599-3365, USA. egalper@unc.edu.

Conflicts of Interest: The authors declare no conflicts of interest.

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One factor that may play a role in risky sexual behaviors is pornography viewing. While viewing pornography online has become commonplace – with 94% of adult men and 87% of adult women reporting having ever seen pornography (6) – condom use is rarely depicted in pornographic scenes (7,8). Moreover, a meta-analysis of studies using mostly adult populations found that viewing pornography with condomless-sex depictions was associated with an increased risk of having condomless sex (9). Viewers who consume pornographic content – especially younger viewers – may learn from and model these behaviors (10), contributing to less condom use among sexually active populations at risk of STIs.

Adolescent Pornography Use

Pornographic images are ubiquitous in popular culture and consumption of pornography has become a largely normative behavior among young people (11,12), with 70% of youth aged 14–18 years old reporting ever having seen pornography (13). Findings from a recent, nationally representative survey of U.S. adolescents revealed that only 8.4% of adolescents perceive pornography as the most helpful source of information for learning about how to have sex, which was associated with being older and currently in a romantic relationship (14). Findings from a sample of 1500 Spanish 14–18-year-olds indicate that pornography use was related to being older, male, and bisexual (15). More frequent pornography use was also associated with being male and not exclusively heterosexual in a nationally representative sample of 1,445 Dutch adolescents (10). These data suggest that the typical adolescent viewing pornography is older, male, and identifies as LGB+; however, it is important to note that most of these findings are based on data from outside of the United States.

Theoretical Framework

During adolescence, a developmental phase marked by the initiation of sexual activity and the formation of sexual habits (9,16), there is an elevated risk of adopting sexual scripts portrayed in pornography and engaging in unsafe sexual behaviors. This process of media socialization is explicated in Wright's $_3$AM model. In this three-part model, $_3$AM describes the *acquisition* of behavioral scripts (e.g., condomless sex is normative and pleasurable), *activation* (e.g., exposure to pornography that reinforces this script thereby increasing salience), and *application* of sexual scripts (e.g., having condomless sex) (17). The $_3$AM model is an integrative framework informed by sexual script theory, cultivation theory, social cognitive theory, priming, uses and gratifications, and media dependency models (18). The underlying idea posed by the model is that pornography plays a role in the development of sexual scripts, which impacts a viewer's sexual beliefs and attitudes, which can ultimately impact their sexual behaviors (19). The claim that beliefs and attitudes affect behaviors is supported by meta-analytic findings (20) and cross-sectional studies using health behavior theories like the theory of reasoned action (21–23).

Pornography's potential impact on a viewer's sexual attitudes has been explored in several studies (24–26), namely using sexual script theory and models like the $_3$AM (18). The $_3$AM model would predict that individuals are more likely to engage in condomless sex when they view attractive actors in pornographic videos having pleasurable sex without

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condoms because it depicts condomless sex as both normative and rewarding (27). Although meta-analytic findings suggest a positive relationship between pornography viewing and condomless sex (9), this link is not clearly established in younger adolescent populations. Considering that adolescents are in the early stages of sexual development, exploration of the pornography viewing-sexual attitudes relationship is crucial.

Pornography Viewing and Condom Attitudes

The literature on adolescent pornography use and condoms is limited. A recent study found that early exposure to pornography was longitudinally associated with drug use before sex among males, but it was not associated with condom use (28). Another study also found no relationship between adolescents' pornography viewing and condom use (19). However, one systematic review and meta-analysis found that exposure to sexually explicit websites was associated with condomless sex among young people aged 10–24 years old (29). Given inconsistent findings in the literature (30,31), additional studies on the potential links between pornography viewing and condom use are needed.

Current Study

The current study sought to examine adolescents' pornography viewing and the extent to which it was associated with their condom attitudes. We also examined the possible moderating roles of demographic factors in the pornography viewing-condom attitudes relationship.

H1: There will be a significant association between age, gender and sexual orientation (LGB+) and pornography viewing frequency such that more frequent viewers will be older, male, and LGB+.

H2: There will be a negative relationship between pornography viewing frequency and condom attitudes.

RQ1: Do participant demographics moderate the relationship between pornography viewing frequency and condom attitudes?

Method

Participants and Procedure

The study included 457 high school adolescents from a rural southeastern U.S. school district, all of whom were participants in a larger study to evaluate the impacts of two health interventions (51). Data for this analysis were collected in 2019 and came from the baseline assessment prior to any intervention activities. We obtained active consent from parents and assent from adolescents prior to study participation. All 9th and 11th grade students (n = approximately 1,600) were eligible to participate and were given a paper consent form to take home to their parent.[1] Of these, 616 forms were returned and 488 parents provided consent. Of the 488 adolescents whose parents provided consent, 457 adolescents provided

[1]Students in 10th and 12th grades had already been recruited into an ongoing study and weren't eligible for the current project.

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assent and were eligible to participate. Participants completed surveys administered through Qualtrics on laptop computers, either in the library, cafeteria, or classroom. To preserve confidentiality, students were situated so that no other student could see their screen while they were filling out the survey. Participants received a $5 gift card for their participation in the study. All procedures were approved by the University's Institutional Review Board.

Measures

Pornography Viewing Frequency—Pornography viewing was assessed by asking participants, "In the past year, how often have you viewed pornography ('porn')?" on a 4-point response scale (0 = *never*, 1 = *1 time*, 2 = *a few times*, and 3 = *many times*). This measure was adapted from other measures assessing pornography viewing frequency (32–34). The mean score on this measure was .92 (*SD* = 1.20).

Condom Attitudes—Participants condom attitudes were assessed using an adapted version of the condom attitude scale-adolescent version (35). Participants were instructed to "Please answer these questions how you feel right now even if you have never had sex": (1) using a condom takes the "wonder" out of sex, (2) condoms are messy, and (3) condoms take away the pleasure of sex. The 5-point response scale was 1 = *strongly disagree* to 5 = *strongly agree*. Items were reverse coded and combined to create a composite measure, with higher scores indicating more positive attitudes about condoms (α = .79).

Data Analysis

Descriptive statistics were calculated prior to analysis to check the distribution of each study variable. We calculated descriptives for all participant demographics and H1 was explored by running a series of chi-square tests to examine differences in pornography viewing. To answer H2, a correlation was computed to test for an association between pornography viewing frequency and condom attitudes. RQ1 was explored by conducting moderation analyses using multiple linear regressions via the SPSS MACRO PROCESS V4.1 model 1 to see whether demographic characteristics moderated the relationship between pornography viewing frequency and condom attitudes. All analyses were conducted using SPSS version 28 and alpha was set at the .05 level of significance.

Results

Study Sample

Fifty-nine percent of the participants were girls (n = 268 cisgender girls), 40% boys (n = 183 cisgender boys), and 1% identified as transgender (n = 6; see Table 1). Adolescents were in the 9th grade (61%) or 11th grade (39%) and between the ages of 13–18 years (M = 15.06; SD = 1.09). The sample was racially and ethnically diverse, including 35% White, 33% Hispanic, 25% Black, and 7% another race or ethnicity. Most adolescents identified as heterosexual (78%), with (22%) identifying as LGB+ (i.e., lesbian, gay, bisexual, and other identities). Seventeen percent of participants had engaged in sexual intercourse in the past year.

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Pornography Viewing

Exploration of our first hypothesis revealed differences in pornography viewing across demographic subgroups, as predicted (Table 2). While 41% of adolescents in our sample had viewed pornography in the past year, this differed markedly by several demographic and sexual characteristics. Older adolescents viewed pornography more frequently than younger adolescents, $X^2(3) = 9.6$, $p = .02$, and boys viewed more frequently than girls, $X^2(3) = 66.84$, $p = .001$. White adolescents viewed pornography more frequently than Black and Hispanic adolescents, $X^2(6) = 17.15$, $p = .01$, and LGB+ adolescents viewed pornography more frequently than their heterosexual counterparts, $X^2(3) = 8.05$, $p = .05$. Finally, adolescents who had sex in the past year viewed pornography more frequently than those who had not had sex in the past year, $X^2(3) = 18.58$, $p = .001$. Thus, H1 was supported.

Pornography Viewing and Condom Attitudes

Our second hypothesis explored whether participant's pornography viewing frequency was related to their condom attitudes. There was a small-to-moderate negative correlation between adolescent pornography viewing frequency and condom attitudes ($r = -.18$, $p < .001$), indicating that adolescents who viewed pornography more frequently had more negative condom attitudes. A linear regression revealed the same pattern of findings [B=−.140, t=3.890; p<.001], and the relationship remained significant after controlling for age, gender, race/ethnicity, sexual orientation, and sexual intercourse [B=−.141, t=−3.8; p<.001]. Thus, H2 was supported.

To explore research question 1, we ran five separate models testing whether the relationship between pornography viewing and condom attitudes was moderated by race/ethnicity, gender, age, sexual orientation, or sexual intercourse status (see Table 3). Results indicated non-significance for all interactions between all demographic and sexual factors and pornography viewing. This was the case for race/ethnicity (i.e., White [B = −.0553, 95% C.I. (−.2002, .0896), $p = .45$]; Black [B = .0447, 95% C.I. (−.1178, .2072), $p = .59$]; Hispanic [B = .0266, 95% C.I. (−.1414 .1945), $p = .76$]). It was also the case for gender [B = −.0332, 95% C.I. (−0.1867, .1203), $p = .67$], age [B = −.1024, 95% C.I. (−.2457, .0409), $p = .16$], sexual orientation [B = −.0213, 95% C.I. (−.1823, .1397), $p = .79$], and sexual intercourse status [B = .0007, 95% C.I. (−.1840, .1853), $p = .99$], indicating that these factors did not modify the pornography viewing frequency-condom attitude relationship.

Discussion

Our findings revealed that a substantial percentage of adolescents in our sample viewed pornography (41%), with meaningful differences in viewing across a range of demographic variables. Older (16–18 vs 14–15), White, LGB+, boys, and those who had sex in the past year viewed pornography more frequently than younger, racially diverse, heterosexuals, girls, and adolescents who had not had sex in the past year. These findings are consistent with prior research on pornography and adolescents in the Southeastern U.S. (36), suggesting that sexually active older males are more frequent viewers of pornography. Also corroborating the current study's findings in samples outside of the US, two studies reported

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that LGB+ male adolescents viewed pornography more frequently than heterosexual adolescents in both Swiss (37) and Dutch (10) samples.

Additionally, more pornography viewing was associated with more negative condom attitudes, and this remained the case even after testing a series of demographic variables as effect modifiers. This strongly suggests that this is a stable relationship that exists across diverse subgroups of adolescents. Prior work with a Swiss sample of older adolescent boys and girls (M = 18 years old) demonstrated that pornography viewing frequency was associated with condomless sex during their last sexual intercourse, where males had higher odds of having condomless sex compared with females (37). In a younger sample of adolescent sexual minority men (M = 16 years old), participants who viewed pornography that featured condomless anal sex ≥ 50% of the time had 2.4 times the odds of engaging in condomless anal sex compared to those who reported <50% exposure (38). Thus, the relationship between pornography viewing and condomless sex exists in both older adolescents and younger adolescent sexual minority men. The current study extends the extant literature by being one of the few studies with a younger sample demonstrating a link between pornography viewing and a crucial precursor to condomless sex – i.e., condom attitudes. This finding further necessitates the need for campaigns and interventions that target younger adolescents, as sexual attitudes can mediate the relationship between pornography viewing and sexual behavior (39).

According to the $_3$AM model, the more normative, arousing, and rewarding one perceives pornographic content to be, the more likely they are to adopt and apply those scripts in their own sexual interactions. Moreover, in romantic or sexual relationships where one person views pornography and another does not, also known as discordant pornography use, the person who views pornography and who may hold negative attitudes and beliefs about condoms may influence the partner who does not view pornography to engage in condomless sex. For example, one study found that women's personal and perceived partner beliefs that condoms interfere with pleasure were both were associated with lower self-efficacy to use condoms (40). This effect may be exacerbated in relationships where adolescents are sexually inexperienced and more susceptible to peer pressure (41,42). Considering the high propensity for intentional and incidental pornography viewing among adolescents, and developmental processes characteristic of adolescents (e.g., risk-taking, sensation seeking), it is imperative to correct misconceptions about sex perpetuated in pornography early in life.

One explanation for the current findings is that pornography viewing negatively impacts condom attitudes, a causal explanation posited by sexual scripts theory. Another explanation is that this relationship is spurious. For example, this relationship could be explained by a third variable such as sensation seeking (43), where high sensation seekers are both more likely to view pornography and hold more negative condom attitudes. However, one recent study examined results across six nationally representative surveys and after controlling for multiple indicators of sexual and nonsexual sensation seeking, pornography viewers were still more likely to engage in condomless sex than non-viewers (44). Additionally, meta-analytic findings suggest that sensation seeking is not a confounding variable, but have suggested instead that pornography consumption perhaps increases sensation seeking

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tendencies which serve as predictors of condomless sex (9). This suggests that sensation seeking may function as a state - rather than a trait - in this context. It is also possible that social or environmental factors such as susceptibility to peer influence (42) and prior knowledge of and experiences with condoms may help to explain the negative relationship between pornography viewing and condom attitudes.

Limitations and Future Directions

Findings from this study were based on a cross-sectional, self-report survey; therefore, we cannot determine the causal nature of the observed associations. Moreover, the self-reports of a sensitive and socially stigmatized topic like pornography could have led to under-reporting given the possible influence of social desirability. Finally, because this was a secondary analysis, we had limited control over how the data were collected. For instance, the data did not account for specific types of pornography viewed, including whether participants noticed condoms when viewing pornography, which warrants exploration in future studies (see 7).

Future research should consider whether there is a causal relationship between pornography viewing and condom use utilizing experimental designs. While ethical concerns may arise with adolescents, such studies could be feasible with young adult samples 18 and over. Moreover, investigating factors such as early sexual debut, participation in additional risky sexual practices, relationship dissatisfaction (45), and social/environmental variables could help isolate the key mechanisms in the pornography viewing-condom attitude relationship.

Findings from this study and recent research suggest a need for pornography literacy education among adolescents. Although pornography literacy programs exist (46–49), they tend not to focus specifically on condom use, and only one has been developed with minoritized adolescents in mind (50). Recommendations from recent research include pornography literacy programs that go beyond identifying problematic messaging in pornography and viewing pornographic content critically, as well as including content about navigating sexuality and relationship development (11,50).

Conclusion

This study examined the relationship between U.S. adolescents' pornography use and condom attitudes. Consistent with the $_3$AM model of sexual media socialization, adolescents who viewed pornography more frequently held more negative condom attitudes than those who viewed less frequently. This relationship held across demographic and sexual characteristics. These results indicate a need for a better understanding of this relationship as well as pornography literacy interventions that target misperceptions about pornography.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgements:

The authors would like to thank Dr. Francesca Dillman Carpentier for her feedback on previous drafts.

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Declaration of Funding:

Research reported in this publication was supported by the National Institute of Mental Health of the National Institutes of Health under Award Number 1F31MH126763 awarded to Julia Brasileiro. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Data availability statement:

Data available on request due to privacy/ethical restrictions.

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Table 1.

Participant demographics ($N = 457$)

	n	(%)
Age, M years (SD)	15.06 (1.09)	
[age range]	[13–18]	
Grade level		
9th grade	279	61
11th grade	178	39
Gender		
Female	268	59
Male	183	40
Transgender	6	1
Race/Ethnicity		
White	158	35
Hispanic	151	33
Black	114	25
Another or mixed race/ethnicity	34	7
Sexual Orientation		
100% heterosexual	355	78
LGB+	102	22
Sexual Intercourse (past year)		
No	377	83
Yes	79	17

Note. M = Mean; SD = Standard deviation. LGB+ includes these responses: “mostly heterosexual” (30, 6.6%), “bisexual” (29, 6.3%), “mostly homosexual” (7, 1.5%), “100% homosexual” (14, 3.1%), and “Don’t know/other” (22, 4.8%). Other/mixed race participants were those who identified as Asian/Pacific Islander or mixed race.

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Table 2.

Pornography viewing frequency by participant demographics ($N = 456$)

		Never	1 time	A few times	Many times	X^2	*p*
	Total *n*	***n* (%)**	***n* (%)**	***n* (%)**	***n* (%)**		
Overall		268 (59%)	40 (9%)	66 (14%)	82 (18%)		
Age						9.6	.02
13–15	277	176 (64%)	26 (9%)	35 (13%)	40 (14%)		
16–18	179	92 (51%)	14 (8%)	31(17%)	42 (24%)		
Gender						66.8	.001
Female	268	196 (73%)	25 (9%)	24 (9%)	23 (9%)		
Male	183	71 (39%)	15 (8%)	40 (22%)	57 (31%)		
Transgender	5	1 (20%)	0 (0%)	2 (40%)	2 (40%)		
Race						17.2	.01
White	158	86 (55%)	10 (6%)	24 (15%)	38 (24%)		
Hispanic	150	98 (65%)	16 (11%)	24 (16%)	12 (8%)		
Black	114	68 (59%)	12 (11%)	12 (11%)	22 (19%)		
Sexual Orientation						8.05	.05
Heterosexual	355	216 (61%)	34 (10%)	50 (14%)	55 (15%)		
LGB+	101	52 (51%)	6 (6%)	16 (16%)	27 (27%)		
Sexual Intercourse (past year)						18.58	.001
Yes	79	30 (38%)	9 (12%)	20 (25%)	20 (25%)		
No	376	238 (64%)	31 (8%)	46 (12%)	61 (16%)		

Note. All values are reported as frequencies; The other/mixed race participants are not included in this table or the X^2 statistical test due to the small number of participants in those groups.

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Table 3.

Moderation analyses for condom attitudes

	Condom Attitudes				
Predictor	***b* (SE)**	**Lower**	**Upper**	***t***	***p***
Pornography viewing X Age	−.1024 (.07)	−.2457	.0409	−1.40	.16
Pornography viewing X gender	−.0332 (.08)	−.1867	.1203	−.43	.67
Pornography viewing X sexual orientation	−.0213 (.08)	−.1823	.1397	−.26	.79
Pornography viewing X race (White)	−.0553 (.07)	−.2002	.0896	−.75	.45
Pornography viewing X race (Black)	.0447 (.08)	−.1178	.2072	.54	.59
Pornography viewing X race (Hispanic)	.0266 (.09)	−.1414	.1945	.31	.76
Pornography viewing X sexual intercourse	.0007 (.09)	−.1840	.1853	.01	.99