

PARAPHILIAS

Is Pornography Consumption Related to Risky Behaviors During Friends With Benefits Relationships?



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ABSTRACT

Background: Friends with benefits encounters are a relatively new pattern of relating among emerging adults where risky sexual behavior may occur.

Aim: To understand whether pornography consumption is associated with riskier behaviors during friends with benefits encounters.

Methods: Cross-sectional study of 2 samples of emerging adults who have engaged in friends with benefits relationships (study 1, N = 411; study 2, N = 394). For binary outcomes, we used logistic regression and report odds ratios. For ordinal outcomes, we used ordered logistic regression and reported odds ratios. We tested for moderation by biological sex.

Results: Men who consumed pornography more frequently were more likely to engage in risky sexual behaviors during their friends with benefits encounters. More frequent pornography consumption was associated with increased likelihood and amount of intoxication for both the respondent and his partner, less frequent condom use, and a higher probability of having penetrative friends with benefits encounters while intoxicated and not using a condom. For each of these outcomes, our parameter estimates from study 2 fell within the 95% confidence intervals from study 1. These associations persisted when controlling for the effects of binge drinking frequency, broader patterns of problematic alcohol use, trait self-control, openness to experience, and permissive attitudes toward casual sex. The findings of this study may inform interventions to reduce risky behaviors among emerging adults.

Limitations: Our cross-sectional studies examined only emerging adults in college with measurement that was exclusively self-reported.

Conclusions: These results are discussed in terms of sexual script theory, and several implications for intervention are outlined. **Henderson E, Aaron S, Blackhurst Z, et al. Is Pornography Consumption Related to Risky Behaviors During Friends with Benefits Relationships?. J Sex Med 2020;17:2446–2455.**

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Emerging adulthood, which has typically been defined as the age range between 18 and 25 years, is a developmental period associated with exploration, identity construction, and participation in higher stakes romantic and sexual relationships.¹ The exploration that characterizes this period makes emerging adulthood a time of fun, growth, and intellectual broadening; however, this exploration is also fraught with risks that have the potential to initiate disruptive changes in a person's life

trajectory, such as contracting a sexually transmitted infection or experiencing an unplanned pregnancy. A pattern of relating among emerging adults where these risks come to the fore are friends with benefits. Friends with benefits relationships are relationships in which friends occasionally engage in sexual behavior without the expectation of romantic commitment.² Between 33% and 60% of emerging adults in college report having friends with benefits relationships.^{3–6} Although 25% of men and 40% of women hope that friends with benefits relationships are a prelude to something more,⁴ 80% of friends with benefits relationships do not transition into committed romantic relationships.^{5,7,8} In fact, friends with benefits relationships often lead to the end of friendships, especially when the relationship was more rooted in sex than friendship.⁵ This

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study aims to further explore the risks associated with friends with benefits relationships.

FRIENDS WITH BENEFITS RELATIONSHIPS AND RISKY SEXUAL BEHAVIOR

The Centers for Disease Control have classified having multiple sexual partners, sex without protection (eg, condoms), and sex while intoxicated as risky sexual behaviors.⁹ Research examining a link between these risky behaviors and friends with benefits relationships has recently begun and has several public health implications: First, those who engage in friends with benefits relationships are more likely to have multiple concurrent sexual partners.¹⁰ Second, friends with benefits relationships are associated with inconsistent condom use during intercourse¹¹ and even less frequent condom use during oral sex encounters.¹² This may be due to the increased trust placed in a sexual partner who has been a friend, compared with other forms of casual sex where condom use may be more frequent.¹¹ Finally, patterns of alcohol use are a key predictor of engaging in friends with benefits relationships and other sexual behaviors,⁴ but the relationship between alcohol use during the friends with benefits encounter and sexual risk-taking has not yet been established.

Who is most likely to engage in risky friends with benefits encounters? Knowing key predictors helps to inform prevention efforts so that they may optimally target those who are most likely to benefit from intervention. Given the association between pornography and risky sexual behaviors such as decreased condom use¹³ and more unique sexual partners,^{14,15} it is plausible that pornography use is related to riskier friends with benefits encounters. Indeed, research shows that pornography use is associated with riskier behaviors during other casual sexual encounters such as hookups.¹⁶ In the present study, we examine whether more frequent pornography use is associated with the likelihood of engaging in risky sexual behaviors during friends with benefits encounters.

SEXUAL SCRIPTS AND PORNOGRAPHY

Sexual script theory posits that conceptions of sexuality are influenced by a person's perceptions of their culture and social groups as well as mass media.^{17,18} Wright's¹⁹ script acquisition, activation, and application model (₃AM) predicts that sexual media help individuals acquire and internalize scripts through repeated exposure to implicit messages in media (eg, "friends sometimes have sex without any strings attached") followed by application of the script. Regarding the most common scripts that people tend to internalize, researchers have suggested that conceptions of sexuality can be primarily procreational, relational, and/or recreational.^{20,21} Pornography—audio/visual material that typically intends to arouse the viewer and depicts sexual activities and genitals in unconcealed ways, usually with close-ups on oral, anal, and vaginal penetration¹³—tends to present sexuality as recreational.

The messages about sexuality in pornography typically consumed by men present a world where situations quickly transition from the mundane into something sexual. This alternate reality has been dubbed "pornotopia".²² More exposure to this world is associated with the modification of sexual scripts through the processes of normalization and empowerment, leading people to enact them in real life.²² This higher order schema can easily translate into the notion that "friends sometimes have sex without any strings attached",^{23,24} especially when inhibitions are lowered in the context of college parties with heavy drinking.²⁵ Indeed, research involving random assignment to the condition of viewing pornography indicates that those who view pornography begin to endorse more permissive sexual scripts,²⁶ and longitudinal research shows that permissive sexual scripts mediate the effect of pornography consumption on casual sexual behavior.¹⁶ Because sexual scripts can be shaped by pornography and scripts tend to be enacted, we predict that themes presented in pornography will be associated with a higher likelihood of risky behaviors during friends with benefits encounters among those who more frequently view pornography.

Studies examining safe-sex practices in pornography suggest that pornography rarely portrays condom use during vaginal intercourse and never during oral sex.²⁷ The link between pornography consumption and condom use is equivocal. Most studies show that exposure to sexually explicit media is correlated with less condom use,^{13,28,29} some studies find no association,^{16,30,31} and one study finds a positive association.²¹ To date, no research has examined the link between pornography consumption and condom use in the context of friends with benefits relationships. Based on existing research, we predict a negative but weak association between pornography consumption and condom use during friends with benefits encounters.

Although pornography has been shown to be correlated with alcohol use, most of the studies on this topic examine only general patterns of alcohol use (eg, frequency and intensity of drinking) rather than alcohol use during casual sex encounters.^{32–34} In addition to personal intoxication, people may be at higher risk of intoxication when their partner seeks out pornography that endorses aggressive, violent, or coercive scripts and adopts those scripts.³⁵ For example, in one study, 40% of men and 26% of women reported using sexual coercion, including attempting to intoxicate their partner to gain sexual rewards.³⁶ Alcohol consumption, regardless of gender, motivates one's motivation for pornography consumption.³⁷ Braithwaite et al¹⁶ showed an association between pornography use and alcohol use during hookups among college students and found that the direction of the association between these variables differed across genders. Specifically, they found that men who more frequently viewed pornography were more likely to be intoxicated during their most recent hookup, but that women who frequently viewed pornography were less likely to be intoxicated during hookups. These authors postulated the moderating effect of gender might have occurred because female pornography use and its implications

have been found to be distinct from male pornography use.^{38–40} The authors suggested a possible gender difference in sexual maturity and/or that the type of pornography typically preferred by women may be imbued with less risky scripts than pornography typically favored by men. In light of this finding, we predict that male pornography use will be positively associated with intoxication and other risky sexual behaviors during friends with benefits encounters, whereas female pornography use will be negatively associated with risk.

The study has 4 research questions: (i) Is pornography use associated with the incidence of intoxication during friends with benefits encounters? (ii) Is pornography use associated with how frequently participants were intoxicated during friends with benefits encounters? (iii) Is pornography use associated with condom use during friends with benefits encounters? (iv) How does pornography use relate to high-risk sexual encounters in friends with benefits relationships (ie, penetration without condom while intoxicated)? To address these research questions, we use data from 2 samples of emerging adults in college who reported friends with benefits encounters in the past 12 months. Following the most recent recommendations for multistudy articles,⁴¹ we included a direct replication of our findings and conducted an internal meta-analysis of our effects by combining the samples from both studies and analyzing the combined sample to obtain aggregate effect sizes and confidence intervals.

METHOD

Participants and Procedure

Participants in both studies were recruited from an undergraduate family science course that fulfilled a university-wide general education requirement at a large, public university in the Southeastern United States. Informed consent was obtained from participants before data collection. Participation in this study was one of the multiple options for students to receive course credit. Data for study 1 and study 2 come from larger data-collection efforts examining the course of emerging adulthood in the context of college (authors masked for review). Participants provided data via an online survey that they completed wherever they chose to access the internet. Before collecting data, we obtained institutional review board approval for all procedures and content.

For the studies presented in this article, participants were excluded if they did not fall in the age range associated with emerging adulthood.^{18–25} From our initial study 1 sample of $N = 1,002$, we excluded 18 participants who were older than 25 years and 4 participants who were younger than 18 years. We included only those who reported having engaged in a friends with benefits relationship in the last 12 months, excluding the 580 who did not. Thus, the analyzed sample for study 1 comprised 411 participants (255 women, 156 men); the average age for men was 19.6 ($SD = 1.4$); the average age for women was 19.3 ($SD = 1.3$). Most respondents were freshmen (41%), followed by sophomores (34%), juniors (18%), and seniors (7%).

Caucasians comprised 69% of the sample, African Americans 12%, Latino 15%, Asian 2%, and “other” (eg, Native American, mixed, and so on) 2%.

Participants in study 2 were recruited, and data were collected using the same procedures as study 1. Participants from study 1 were not eligible to participate in study 2. Again, we included only emerging adults (those aged 18–25 years). From our initial sample of $N = 978$, we excluded 14 participants who were older than 25 years and 4 participants who were younger than 18 years. We included only those who reported having engaged in a friends with benefits relationship in the last 12 months, excluding the 563 who did not. Thus, the analyzed sample for study 2 was 394 participants (237 women, 157 men); the average age for men was 19.6 ($SD = 1.4$); the average age for women was 19.2 ($SD = 1.2$). Most respondents were freshmen (40%), followed by sophomores (37%), juniors (17%), and seniors (6%). Caucasians comprised 63% of the sample, African Americans 16%, Latino 14%, Asian 3%, and “other” (eg, Native American, mixed, and so on) 4%.

Measures

Friends With Benefits Relationship Encounters

In both studies, we used the following item to assess whether participants had a friends with benefits relationship: “Some people say that a ‘friend with benefits’ is a friendship in which there are also physical encounters, but no ongoing committed relationship (eg, not boyfriend/girlfriend).” After reading this definition, participants were asked how many “friends with benefits” relationships they had in the past 12 months. 11 response options ranged in increments of one from 0 to 10 or more. Those who indicated that they had a friends with benefits relationship in the past year were then asked about how frequently the following had occurred during the times they were physically intimate with their friends with benefits partner: “Were you typically under the influence of a substance (eg, alcohol)?” “Was your partner typically under the influence of a substance (eg, alcohol)?” “How often did you or your partner use condoms?” response options were 1 (*Never*), 2 (*Rarely*), 3 (*About half*), 4 (*Most times*), and 5 (*Always*).

In study 2, those who indicated that they had a friends with benefits encounter were then asked to “check all the types of physical intimacy that occurred with your friends with benefits.” The options provided were *kissing*, *petting*, *oral sex*, and *intercourse (vaginal or anal)*.

Frequency of Pornography Viewing

We assessed pornography viewing with an item asking, “Approximately how many times in the past 30 days have you viewed pornography (eg, video, magazine, internet)?” Answer selections included 1 (*never*), 2 (*once*), 3 (*a few times*), 4 (*about weekly*), 5 (*a few times a week*), 6 (*daily*), and 7 (*a few times a day*). This is an item commonly used to assess patterns of pornography

use; for example, the General Social Survey uses this item, and a number of studies examining associations between patterns of pornography use and sexual outcomes have been published from this data set using this item.^{21,24}

Control Variables

To examine whether these results are robust to plausible alternate explanations, we included a measure of trait self-control⁴² ($\alpha = 0.84$ in study 1, $\alpha = 0.84$ in study 2), a single item assessing binge drinking (“How often in the last 30 days did you have 5 or more drinks on one occasion?”),⁴³ a measure of broader problematic patterns of alcohol use among students in college⁴⁴ ($\alpha = 0.84$ in study 1, $\alpha = 0.85$ in study 2), and a measure of attitudes toward casual sex from the sociosexuality inventory⁴⁵ ($\alpha = 0.86$ in study 1, $\alpha = 0.88$ in study 2). We also included a 2-item measure of openness to experience from a brief personality measure that is particularly used when scale brevity is important for the study and trait is used as a control variable⁴⁶ ($\alpha = 0.40$ in study 1, $\alpha = 0.38$ in study 2). While internal consistency for this measure is low, it is explained by the use of only 2 items for a likely multifaceted facet,⁴⁶ and it has adequate levels for convergent and discriminant validity for other personality measures ($r = 0.65$, $P < .01$), test-retest reliability (0.62), and patterns of external correlates (r range = 0.08–0.42, $P < .01$).

Analysis Plan

Before conducting analyses with covariates, we tested for problems with collinearity and found none. We conducted 2 types of analyses. For binary outcomes (eg, whether or not a condom was used during a friends with benefits sexual encounter), we used logistic regression and reported odds ratios (OR). For ordinal outcomes (eg, how intoxicated a participant was during the last friends with benefits sexual encounter), we used ordered logistic regression and reported OR—OR, in this case, indicate the probability of being in a higher or lower ordered category (eg, *not intoxicated*, *somewhat intoxicated*, and so on). Because of well-established differences between male and female patterns of pornography use, we tested for moderation by biological sex and reported outcomes separately for male and female candidates when significant moderation was observed.

Before interpreting results, we screened for influential observations using procedures recommended by Hosmer, Lemeshow, and Sturdivant⁴⁷ and Long and Freese⁴⁸; no problematic patterns were detected. After we examined the relationship between pornography use and our outcome variable, we tested for robustness by examining whether the observed associations remain when we control for variables that are known to be correlated with risky behaviors during emerging adulthood (ie, trait self-control, binge drinking, problematic patterns of alcohol use, openness to experience, and attitudes toward casual sex). We tested for problems with multicollinearity in each of these models and detected none. Following the most recent best practices for statistical inference,⁴⁹ we report 95% confidence intervals rather

than P values. Findings are considered “statistically significant” if the 95% confidence interval does not include a null effect (in the case of logistic regression, a 1.00). Our data and code are posted on the Open Science Framework at (link omitted for review).

RESULTS

Descriptive Statistics

In study 1, 46% of respondents reported viewing pornography in the past 30 days: 13% reported viewing pornography once, 15% a few times a month, 6% about weekly, 8% a few times a week, 3% daily, and 1% a few times a day. Men viewed pornography more frequently than women ($d = 1.82$, 95% CI: 1.58, 2.07). In our sample (comprised entirely of those who reported a friends with benefits relationship in the previous 12 months), 47% reported having only one unique friends with benefits partner; the median number of partners was 2. Men reported having more friends with benefits partners than women ($d = 0.58$, 95% CI: 0.38, 0.78). 80% of respondents reported self-intoxication during friends with benefits encounters, and 78% reported partner-intoxication. There were no differences between men and women for self or partner intoxication. Descriptive statistics for study 1 are reported in [Figure 1](#) [Statistical findings for study 1 and study 2 are in reported in [Table 1](#)].

In study 2, 49% of respondents reported viewing pornography in the past 30 days: 9% reported viewing pornography once, 20% a few times a month, 4% about weekly, 12% a few times a week, 3% daily, and 1% a few times a day. Men viewed pornography more frequently than women ($d = 1.98$, 95% CI: 1.73, 2.22). In our sample (comprised entirely of those who reported a friends with benefits relationship in the previous 12 months), 54% reported having only one unique friends with benefits partner; the median number of partners was one. Men reported having more friends with benefits partners than women ($d = 0.28$, 95% CI: 0.07, 0.48). 74% of respondents reported self-intoxication during friends with benefits encounters; 72% reported partner-intoxication. There were no differences between men and women for self or partner intoxication. Descriptive statistics for study 2 are reported in [Figure 2](#).

Is Pornography Use Associated With the Incidence of Intoxication During Friends With Benefits Encounters?

Either Partner Intoxication Incidence

To examine this outcome, we created a dummy variable where 1 indicates whether either partner in the friends with benefits encounter was intoxicated. For men, more frequent pornography consumption was associated with a higher likelihood of either partner being intoxicated during friends with benefits encounters (study 1: OR = 1.85, 95% CI = 1.31, 2.60; study 2: OR = 1.48, 95% CI = 1.14, 1.91; aggregate estimate OR = 1.57, 95% CI = 1.30, 1.89). Specifically, each unit increase in pornography viewing frequency was associated with a

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Mean	0.62	2.12	0.82	0.80	0.78	2.50	2.46	3.57	0.48	3.80	2.11	3.10	0.08	5.01
Standard Deviation	0.49	1.50	0.38	0.40	0.42	1.10	1.10	1.67	0.50	2.58	0.88	0.68	0.74	2.60
Skewness †		1.18	†	†	†	0.33	0.39	-0.60	†	0.51	0.57	-0.10	-0.69	0.01
Kurtosis †		3.31	†	†	†	2.31	2.49	1.62	†	1.98	2.42	2.71	3.33	1.75
1. Female	1.00													
2. Porn Frequency	-0.67***	1.00												
3. Either Intoxicated	-0.01	0.11*	1.00											
4. Self-Intoxication (Binary)	-0.05	0.09	0.93***	1.00										
5. Partner-Intoxication (Binary)	0.04	0.05	0.87***	0.80***	1.00									
6. Self-Intoxication (Ordinal)	-0.05	0.11*	0.63***	0.69***	0.63***	1.00								
7. Partner-Intoxication (Ordinal)	0.04	0.08	0.61***	0.57***	0.71***	0.87***	1.00							
8. Condom Use	-0.11*	0.03	-0.04	-0.02	-0.06	-0.06	-0.05	1.00						
9. Always Use Condom	-0.07	-0.01	-0.10	-0.09	-0.11*	-0.09	-0.06	0.85***	1.00					
10. Binge Drinking	-0.27***	0.23***	0.30***	0.32***	0.39***	0.29***	0.29***	-0.06	-0.10	1.00				
11. CAPS	-0.09	0.15**	0.31***	0.36***	0.28***	0.39***	0.31***	-0.03	-0.09	0.44***	1.00			
12. Self-Control	-0.04	-0.14**	-0.03	-0.06	-0.03	-0.21***	-0.16**	0.01	0.05	-0.25***	-0.29***	1.00		
13. Openness	0.05	-0.04	-0.09	-0.08	-0.07	-0.02	-0.06	0.08	0.05	0.00	-0.08	0.02	1.00	
14. Casual Sex Attitudes	-0.53***	0.43***	0.07	0.12*	0.08	0.22***	0.13*	0.09	-0.02	0.39***	0.23***	-0.23***	0.02	1.00

Figure 1. Descriptive statistics for study 1. Note. * $P < .05$, ** $P < .01$, *** $P < .001$, †Binary variable. CAPS = College Alcohol Problems Scale.

57% increase in the odds that either partner was intoxicated during friends with benefits encounters. To illustrate this association for men, we generated the predicted probabilities for each of the pornography viewing frequency levels. 56% of men (95% CI = 49%, 63%) who had not viewed pornography in the past 30 days were predicted to have friends with benefits encounters where either partner is intoxicated compared to 83% (95% CI = 71%, 95%) of those who viewed pornography *about weekly* and 95% (95% CI = 88%, 100%) of those who had viewed pornography *a few times a day*. For women, there was not a significant association between pornography consumption and whether either partner was intoxicated.

In a second model where we controlled for binge drinking frequency, broader patterns of problematic alcohol use, trait self-control, openness to experience, attitudes toward casual sex, and men's frequency of pornography consumption retained significant associations with whether either person in the friends with benefits encounter was intoxicated (aggregate OR = 1.36, 95% CI = 1.03, 1.81).

Self-Intoxication Incidence

To examine this outcome, we created a dummy variable where 1 indicates whether the respondent was intoxicated during the friends with benefits encounter. The interaction term between biological sex and pornography use was not significant for this model ($P = .08$), indicating that the observed parameter

estimates are not significantly different for men and women. With this in mind, we present outcomes separately for men and women to be consistent with other outcomes. For men, more frequent pornography consumption was associated with an increased likelihood of self-intoxication during friends with benefits encounters (study 1: OR = 1.84, 95% CI = 1.31, 2.57; study 2: OR = 1.43, 95% CI = 1.11, 1.85; aggregate estimate: OR = 1.53, 95% CI = 1.24, 1.89). For women, study 1 showed an association between pornography consumption and a decreased likelihood of intoxication (study 1: OR = 0.66, 95% CI = 0.47, 0.94), but there was not a significant association in study 2 (study 2: OR = 1.08, 95% CI = 0.74, 1.56) and the confidence interval for the aggregate effect included zero (OR = 0.84, 95% CI = 0.53, 1.33); thus, our data do not suggest an association between pornography consumption and self-intoxication during friends with benefits encounters for women. When accounting for controls, the association between pornography consumption and male self-intoxication became marginal (OR = 1.33, 95% CI = 0.97, 1.80).

Partner-Intoxication Incidence

To examine this outcome, we created a dummy variable where 1 indicates whether the respondent's partner was intoxicated during the friends with benefits encounter. For men, more frequent pornography consumption was associated with an

Table 1. Summary of findings

Does pornography use predict	Men aggregate effect [95% CI]	Women aggregate effect [95% CI]	Findings robust to inclusion of covariates? [95% CI]
Either partner intoxication incidence	OR = 1.57 [1.30, 1.89]	OR = 0.93 [0.85, 1.03]	Yes (OR = 1.36 [1.03, 1.81])
Self-intoxication incidence	OR = 1.53 [1.24, 1.89]	OR = 0.84 [0.53, 1.33]	No (OR = 1.36 [0.97, 1.80])
Partner-intoxication incidence	OR = 1.36 [1.28, 1.45]	OR = 0.87 [0.79, 0.96]	Yes for men (OR = 1.20 [1.08, 1.33]) No for women (OR = 0.91 [0.79, 1.04])
Self-intoxication frequency	OR = 1.36 [1.33, 1.38]	OR = 0.92 [0.79, 1.08]	Yes (OR = 1.19, 95% CI [1.07, 1.32])
Partner-intoxication frequency	OR = 1.30 [1.28, 1.31]	OR = 1.08 [0.79, 1.48]	Yes (OR = 1.16, 95% CI [1.06, 1.27])
Condom use	OR = 0.82 [0.76, 0.89]	OR = 1.01 [0.82, 1.24]	Yes (OR = .84, 95% CI [.76, .93])
Being in the riskiest category*	OR = 2.51 [1.30, 4.81]	OR = 0.70 [0.31, 1.57]	Yes (OR = 2.89, 95% CI [1.36, 6.10])

Bolded entries indicate that the confidence interval did not include a null effect, equivalent to criterion $P < .05$.

*Being in the riskiest category = having penetrative friends with benefits encounters without a condom while intoxicated.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Mean	0.59	2.30	0.76	0.73	0.72	2.41	2.37	3.67	0.47	3.51	2.09	3.20	0.01	5.63	0.61
Standard Deviation	0.49	1.60	0.43	0.44	0.45	1.17	1.16	1.60	0.50	2.53	0.91	0.66	0.81	2.42	0.49
Skewness †		0.97	‡	‡	‡	0.45	0.49	-0.74	‡	0.71	0.73	0.04	-0.50	-0.27	‡
Kurtosis †		2.78	‡	‡	‡	2.26	2.32	1.88	‡	2.25	2.86	2.77	2.71	2.01	‡
1. Female	1.00														
2. Porn Frequency	-0.70***	1.00													
3. Either Intoxicated	0.04	0.07	1.00												
4. Self-Intoxication (Binary)	0.01	0.09	0.94***	1.00											
5. Partner-Intoxication (Binary)	0.07	0.01	0.91***	0.86***	1.00										
6. Self-Intoxication (Ordinal)	0.05	0.05	0.69***	0.73***	0.67***	1.00									
7. Partner-Intoxication (Ordinal)	0.12*	-0.01	0.67***	0.66***	0.74***	0.92***	1.00								
8. Condom Use	-0.02	-0.02	0.00	0.05	0.00	0.00	-0.01	1.00							
9. Always Use Condom	0.02	-0.08	-0.10	-0.07	-0.07	-0.09	-0.08	0.82***	1.00						
10. Binge Drinking	-0.25***	0.25***	0.33***	0.37***	0.30***	0.42***	0.35***	-0.04	-0.08	1.00					
11. CAPS	0.02	0.07	0.30***	0.34***	0.26***	0.43***	0.37***	-0.15**	-0.18***	0.45***	1.00				
12. Self-Control	0.05	-0.08	-0.21***	-0.20***	-0.17***	-0.33***	-0.30***	0.10	0.11*	-0.31***	-0.42***	1.00			
13. Openness	0.09	-0.02	-0.02	-0.01	-0.03	-0.03	-0.06	0.03	0.04	0.00	-0.01	0.04	1.00		
14. Casual Sex Attitudes	-0.38***	0.39***	0.10*	0.11*	0.06	0.12*	0.09	0.09	-0.00	0.31***	0.09	-0.25***	0.09	1.00	
15. Penetrate	-0.11*	0.16**	0.10	0.08	0.07	0.07	0.06	0.08	0.00	0.05	0.13*	-0.10*	0.05	0.28***	1.00

Figure 2. Descriptive statistics for study 2. Note. * $P < .05$, ** $P < .01$, *** $P < .001$, †Binary variable. CAPS = College Alcohol Problems Scale.

increased likelihood that the partner was intoxicated during friends with benefits encounters (study 1: OR = 1.44, 95% CI = 1.10, 1.88; study 2: OR = 1.34, 95% CI = 1.06, 1.70; aggregate estimate: OR = 1.36, 95% CI = 1.28, 1.45). There was no association between these variables for women in the individual studies, but the aggregate effect suggested women who viewed pornography were less likely to have an intoxicated partner during a friends with benefits encounter (OR = 0.87, 95% CI = 0.79, 0.96). The association between men's frequency of pornography consumption retained significant associations with partner-intoxication during friends with benefits encounters (aggregate OR = 1.20, 95% CI = 1.08, 1.33) in our second model that included our control variables. The effect for women was not robust to the inclusion of control variables (OR = 0.91, 95% CI = 0.79, 1.04)

Is Pornography Use Associated With How Frequently Participants Were Intoxicated During Friends With Benefits Encounters?

Self-Intoxication Frequency

Because a higher number of intoxicated friends with benefits encounters increases risk, we analyzed the frequency of intoxication separately from incidence. For men, more frequent pornography consumption was associated with a higher likelihood of their own report of being intoxicated during friends with benefits encounters (study 1: OR = 1.39, 95% CI = 1.13, 1.70; study 2: OR = 1.36, 95% CI = 1.13, 1.65; aggregate effect: OR = 1.36, 95% CI = 1.33, 1.38). Specifically, each unit increase in pornography viewing frequency was associated with a 36% increase in the odds of moving up the frequency scale (eg, from *never* to *rarely*). There was no association between these variables for women. The association for men remained in our second model where we included our control variables (OR = 1.19, 95% CI = 1.07, 1.32).

Partner-Intoxication Frequency

Biological sex did not moderate the degree of partner intoxication ($P = .28$); again results are presented for both sexes for the

sake of consistency. For men, more frequent pornography consumption was associated with more frequent partner intoxication during friends with benefits encounters (study 1: OR = 1.30, 95% CI = 1.07, 1.60; study 2: OR = 1.32, 95% CI = 1.09, 1.60; aggregate effect: OR = 1.30, 95% CI = 1.28, 1.31). There was no association between these variables for women. The association between men's frequency of pornography consumption retained significant associations with partner-intoxication during friends with benefits encounters (OR = 1.16, 95% CI = 1.06, 1.27) in our second model that included our control variables.

Is Pornography Use Associated With Condom Use During Friends With Benefits Encounters?

We first examined how frequently condoms were used during friends with benefits encounters (ordinal data). Biological sex did not moderate the influence of pornography use ($P = .08$). We found that men who viewed pornography more frequently were less likely to use a condom during friends with benefits encounters, although this finding was not statistically significant in study 1 (study 1: OR = 0.86, 95% CI = 0.70, 1.06; study 2: OR = 0.79, 95% CI = 0.65, 0.97; aggregate effect: OR = 0.82, 95% CI = 0.76, 0.89). There was no association between pornography and condom use frequency for women. The association between males' frequency of pornography consumption retained significant associations with condom use during friends with benefits encounters in our second model that included our control variables (aggregate OR = 0.84, 95% CI = 0.76, 0.93).

We then examined whether someone "always" uses a condom because this is the only way for the participant to fully mitigate risk during friends with benefits encounters. To examine this outcome, we created a dummy variable where 1 indicates whether the respondent reported that they "always" used a condom during the friends with benefits encounters. For men, more frequent pornography consumption was associated with a lower likelihood of always using a condom during friends with benefits encounters (study 1: OR = 0.81, 95% CI = 0.65, 1.01; study 2: OR = 0.76, 95% CI = 0.62, 0.95; aggregate effect: OR = 0.78, 95% CI = 0.74, 0.82). There was no association between pornography

consumption and whether women “always” used a condom during friends with benefits encounters. The association for men was retained in our second model that included our control variables (aggregate OR = 0.80, 95% CI = 0.74, 0.87).

Here, it is worth noting that these data do not provide information about whether the friends with benefits encounter was penetrative, so it is likely that this effect is diluted by people who are reporting less frequent condom use during friends with benefits relationships because they are not engaging in behaviors that require a condom. Study 2 had data about whether friends with benefits encounters were penetrative, so we re-ran this model but included only those who reported having penetrative friends with benefits encounters. In this model, the effect for men had the same general pattern but was slightly stronger (OR = 0.69, 95% CI = 0.53, 0.89). There was still no association between these variables for women, even when accounting for whether friends with benefits encounters were penetrative. This effect for penetrative friends with benefits encounters remained when accounting for controls (OR = 0.71, 95% CI = 0.53, 0.94).

What About the Riskiest Category: Penetrative Friends With Benefits Encounters While Intoxicated Without Condoms?

Finally, we examined the riskiest possible outcome: that an individual engaged in a penetrative friends with benefits encounter without a condom while intoxicated. Because only study 2 had data on penetration, we used only data from study 2 to answer this question. To do this, we created a binary variable indicating whether a participant fell into this category (coded as 1) or not (coded as 0); 7% of participants fell into this category. For men, pornography use was significantly associated with being in the riskiest category (OR = 2.51, 95% CI = 1.30, 4.81). There was no association between these variables for women. Therefore, for men, 0.002% (95% CI = 0%, 1%) of those who never viewed pornography are predicted to be in this riskiest category compared to 3% (95% CI = 0%, 7%) who viewed about weekly and 36% (95% CI = 3%, 69%) of those who viewed pornography several times a day. This association for men remained when we accounted for binge drinking frequency, broader patterns of problematic alcohol use, trait self-control, openness to experience, and attitudes toward casual sex (OR = 2.89, 95% CI = 1.36, 6.10).

DISCUSSION

Friends with benefits encounters are a relatively new pattern of relating among emerging adults where risky sexual behavior may occur. This study aimed to understand whether pornography consumption is associated with riskier behaviors during friends with benefits encounters. In 2 samples of emerging adults in college who had a friends with benefits relationship in the past 12 months, we found that men who consume pornography more

frequently were more likely to engage in risky sexual behaviors during their friends with benefits encounters. This relationship was not statistically significant in women. This finding may possibly be explained by the notion that pornography must fit a person's sexual script in order for deep involvement to occur.⁵⁰ Prior research has found that male-targeted pornography is typically focused on physical pleasure and recreation, whereas female-targeted pornography is emotionally focused.^{13,51} It is possible that men perceive alcohol use with more relevance in sexual encounters than women do and might encourage their sexual partners to drink alcohol to fit their sexual scripts.

More frequent pornography consumption was associated with more likely and increased intoxication for both the respondent and his partner, less frequent condom use, less likelihood of “always” using a condom, and a higher likelihood of being in the riskiest category (having penetrative friends with benefits encounters while intoxicated and not using a condom). For each of these outcomes, our parameter estimates from study 2 fell within the 95% confidence intervals from study 1, providing strong evidence for the reliability of these point estimates. Finally, these associations persisted when controlling for binge drinking frequency, broader patterns of problematic alcohol use, trait self-control, openness to experience, and permissive attitudes toward casual sex, suggesting that pornography use has an incremental association with risky sexual outcomes which is not better explained by more general tendencies toward casual sex, novel experiences, impulse control, or broader patterns of alcohol use.

Our findings are statistically and practically significant across multiple outcomes. Risk factors associated with an 18–22% lower likelihood of condom use have the potential to inform and improve intervention efforts. The robust effect for the distal variable of patterns of pornography consumption is especially useful because enactment stage variables (ie, implementing the intention to use a condom) are usually the ones strongly associated with condom use.⁵² Furthermore, pornography consumption was as strongly associated with intoxication during friends with benefits encounters as variables that are designed specifically to assess risky substance use behavior (ie, binge drinking frequency and problematic patterns of alcohol use). This could be related to sexual script theory and the presented involvement of alcohol consumption and friends with benefits sexual encounters in pornography.

We found these associations emerged for men, but not for women. This pattern of greater risk for men has been observed in previous studies,^{13,16} but this pattern is somewhat different from what Braithwaite et al¹⁶ observed for pornography consumption and hookups. Although they similarly observed that pornography consumption was associated with increased risk for men, they also observed that women who viewed pornography had a lower likelihood of and decreasing amounts of intoxication during hookups. Regarding the differences between genders and the risky effects of pornography, Wright's 3AM ¹⁹ predicts that sexual media help individuals to acquire and internalize scripts through

repeated exposure to themes followed by application of the script. So, the specific scripts portrayed in pornography should be associated with specific risk behavior. It is possible that scripts in pornography favored by men are more likely to lead to risky behaviors because they convey riskier scripts than the pornography that is favored by women. Research on the content of pornography suggests that men prefer pornography that focuses on novel, pleasure-centered experiences, whereas women tend to prefer relational, person-centered scripts that humanize the participants rather than presenting them as sexual objects only.⁵⁰ There is also an association between arousal and degree of explicitness for men.⁵³

Another conjecture made by Braithwaite et al¹⁶ suggests pornography may have a negative association with risky behavior among women because female pornography use is less common and may be a marker of being sexually savvy, hence the negative association for women. If this is true, why did we observe a null finding between pornography and risk in friends with benefits encounters for women? One possibility is that friends with benefits encounters are distinct from hookups because they occur in the context of an existing relationship. If women know their partners as a friend, they may be less likely to perceive risk in a friends with benefits encounter than in a hookup. This may be especially true because women are more likely than men to hope that friends with benefits encounters will turn into something more,⁴ and more familiarity with a sexual partner is associated with less condom use, perhaps because of less perceived risk.^{11,54} Future research would examine the content of pornography that people view to determine whether the scripts in pornography relate to risk behavior in vivo, influence of personality traits such as sexual sensation seeking, and the utility of pornography literacy programs in society and risky sexual behavior.^{55,56}

Limitations

Our study has limitations. The cross-sectional nature of our data does not allow us to establish the direction of variable effects. Our sample was comprised only of college students, and therefore, we cannot make inferences about the proportion of the population that has not sought higher education. Our data did not ask about the theme of pornography that was used. Our data were largely self-reported, potentially presenting a more positively biased view of risk behavior than is accurate. Finally, friends with benefits relationships are complexly determined, and even though we ruled out some plausible alternate explanations, we did not rule out proximal factors that occur in the moments leading up to the encounter, which are known to impact condom risk.⁵²

Our studies are among the first to examine sexual behaviors defined by the Centers for Disease Control and Prevention as risky in the context of friends with benefits relationships among college students. We controlled for a host of relevant variables that could explain the link between pornography and risky friends with benefits encounters, establishing the specificity of

this effect and showing incremental prediction. Each of our analytic approaches was specifically designed for the measures and outcomes involved rather than using ordinary least squares regression regardless of the nature of the data. Finally, we cross-validated our findings and established an aggregate effect following current best practices, as direct replications are rare in psychology.⁴⁹

Implications

These strengths relate to the clinical implications of our work. To effectively implement public health interventions, risk and protective factors must be known and interventions efforts implemented that target those who are most at risk. Although college students are at risk broadly, this study and other research¹⁶ have identified that male college students who frequently view pornography are more likely to engage in risky sexual behaviors, even within this notably risky group of emerging adults who engage in casual sexual encounters. Given this knowledge at the level of specific risk behaviors, and with point-estimates that were cross-validated at the confidence interval level, we can make specific predictions about risk within specific groups to optimally target those who are most likely to engage in risky friends with benefits encounters. There is some evidence that interventions that use social proof can reduce problematic alcohol use among college students.⁵⁷ Perhaps interventions could be supplemented with social proof messages relevant to the broader casual sex culture. For example, positive social proof messages show that those who are not intoxicated or who practice safe sex feel less regret after casual sexual encounters.^{4,58}

In conclusion, our findings highlight the risky behavior within friends with benefits relationships. Our data demonstrate a robust association between men's pornography consumption and risky sexual behaviors, as defined by the Centers for Disease Control and Prevention,⁹ during friends with benefits relationships. Taken together with other findings linking pornography to risky sexual behavior^{14–16} and to restricted relationship and sexual scripts,^{19,59} it is worth considering ways to offer countervailing views of sexuality, ideally views that promote more expansive, inclusive sexual scripts in pornography that encourage safe sexual practices in real life.

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