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## Women's Age of First Exposure to Internet Pornography Predicts Sexual Victimization

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# Women's Age of First Exposure to Internet Pornography Predicts Sexual Victimization

## Abstract

Increases in the availability and accessibility of Internet pornography have led growing numbers of children to become consumers of sexually explicit media. Research has identified negative behavioral and attitudinal outcomes associated with Internet pornography use in childhood and adolescence, but few studies have examined sexual victimization as a correlate. The current study aimed to examine the association between age of first Internet pornography exposure and sexual victimization. Data from 154 undergraduate women yielded several important findings. Women who viewed Internet pornography unintentionally at a younger age reported more sexual victimization. Specifically, compared to women who were first unintentionally exposed to Internet pornography at age 14 or older, women with unintentional first Internet pornography exposure before the age of 14 reported more childhood sexual abuse, sexual abuse in adulthood, and more instances of sexual coercion and aggression. Women with younger age of unintentional Internet pornography exposure also reported more interpersonal sexual objectification than women who had never viewed Internet pornography at all. Age of first intentional exposure to Internet pornography was not related to women's self-reported experiences of objectification, although this may be because women's intentional exposure tended to happen at older ages. Overall, the results of this study suggest that women's unintentional Internet pornography exposure at a young age may contribute to a potentially harmful sexual socialization. Early Internet pornography exposure in childhood should be considered a potential risk factor for women's sexual victimization.

## Keywords

Internet pornography, sexual media, sexual violence, sexual victimization, sexualization, objectification

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## WOMEN'S AGE OF FIRST EXPOSURE TO INTERNET PORNOGRAPHY PREDICTS SEXUAL VICTIMIZATION

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### ABSTRACT

Increases in the availability and accessibility of Internet pornography have led growing numbers of children to become consumers of sexually explicit media. Research has identified negative behavioral and attitudinal outcomes associated with Internet pornography use in childhood and adolescence, but few studies have examined sexual victimization as a correlate. The current study aimed to examine the association between age of first Internet pornography exposure and sexual victimization. Data from 154 undergraduate women yielded several important findings. Women who viewed Internet pornography unintentionally at a younger age reported more sexual victimization. Specifically, compared to women who were first unintentionally exposed to Internet pornography at age 14 or older, women with unintentional first Internet pornography exposure before the age of 14 reported more childhood sexual abuse, sexual abuse in adulthood, and more instances of sexual coercion and aggression. Women with younger age of unintentional Internet pornography exposure also reported more interpersonal sexual objectification than women who had never viewed Internet pornography at all. Age of first intentional exposure to Internet pornography was not related to women's self-reported experiences of objectification, although this may be because women's intentional exposure tended to happen at older ages. Overall, the results of this study suggest that women's unintentional Internet pornography exposure at a young age may contribute to a potentially harmful sexual socialization. Early Internet pornography exposure in childhood should be considered a potential risk factor for women's sexual victimization.

### KEYWORDS

Internet pornography, sexual media, sexual violence, sexual victimization, sexualization, objectification

**T**HE PREVALENCE OF INTERNET-ENABLED personal devices has provided unprecedented access to pornography online. Internet pornography has consequently become a ubiquitous media genre over the past couple of decades. Although it is difficult

to estimate the full scale of Internet pornography, visitor traffic to individual pornographic websites indicates that it rivals mainstream, non-pornographic websites in popularity. Internet pornography site Pornhub was the 7<sup>th</sup> most-visited website in the United States in March 2021, making it more popular than Twitter or Instagram among Americans (“Top 100: The Most Visited Websites in the US,” n.d.). Prior to removing millions of videos in 2020 due to reports of content featuring child sex abuse (Valinsky, 2020), Pornhub announced that nearly 7 million new videos were uploaded to its site in 2019 alone (Pornhub, 2019). Other Internet pornography websites like Xvideos.com, while not as popular as Pornhub, still attract hundreds of millions of visits per month (Top 100: The most visited websites in the US, 2021).

Young adult men comprise online pornography’s biggest audience (Price et al., 2016), but a substantial proportion of Internet pornography consumers are children. By the time they are 18, nearly all boys and more than half of girls have viewed pornography online (Sabina et al., 2008; Svedin et al., 2011). The frequency of Internet pornography consumption among non-adults suggests that it is a normative activity for youth, especially among certain groups. A recent survey of nearly 3,000 Canadian teens found that 52% view pornography on a weekly basis, with 70.5% of cis-gender/heterosexual boys reporting pornography use at this frequency (Bóthe et al., 2020).

On average, boys first see Internet pornography around 11-13 years old, with girls following a few years later at 13-17 years old (Lim et al., 2017; Sinković et al., 2013). Research has shown that it is common for children to accidentally come across Internet pornography (see Peter & Valkenburg, 2016 for a review). For example, a survey of Australian youths reported that most of their sample – 84% of boys and 60% of girls – had unintentionally viewed Internet pornography (Flood, 2007). Forty-one percent of teenagers in the UK have visited an Internet pornography website by accident and 44% have seen pop-up advertisements for pornography while browsing the web (Livingstone & Helsper, 2010). Among American children ages 10-17 years, 66% of those who had viewed Internet pornography within the past year had done so unintentionally and only 34% had viewed Internet pornography intentionally (Wolak et al. 2007). Girls may be especially likely to be exposed to Internet pornography by accident. A survey of undergraduates found that 35% of women’s first exposure to pornography was intentional but nearly half (45%) was unintentional (Camilleri et al., 2021). In contrast, the men in this study reported that their first exposure to pornography was more likely to have been intentional (45%) than accidental (32.9%). Perhaps because it is relatively common for children to unintentionally find Internet pornography, children may have a sense of wariness about Internet pornography. A survey of thousands of European children found that pornography was children’s biggest concern regarding viewing disturbing content online (Livingstone et al., 2014).

Children’s access to Internet pornography is concerning given the high prevalence of aggressive and extreme content. Fritz and colleagues (2020) coded for acts of physical aggression in approximately 4,000 pornographic scenes from randomly selected videos hosted on Pornhub and Xvideos.com. Physical aggression, such as spanking, slapping, gagging, hair pulling, and choking, was in 45% of the analyzed Pornhub scenes and in 35% of the Xvideos.com scenes. Nearly all instances of physical aggression (97%) targeted women in the scenes. Although other content analyses have identified higher (88%; Bridges et al., 2010) or lower (31%; Fritz & Paul, 2017) rates of physical aggression in pornography, it seems likely that viewers of Internet pornography will be exposed to at least some sexualized aggression while watching pornography online. Research supports this presumption. In a survey of adolescents and

young adults living in Australia, 72% had seen violence or aggression toward women and 74% had seen violence in pornography within the past year (Davis et al., 2018). Exposure to more extreme content during childhood is not rare, either. Before the age of 18, 32% of boys and 18% of girls report seeing sexual activity between human and animals, 18% of boys and 10% of girls have been exposed to rape or sexual violence, and 15% of boys and 9% of girls have come across sexual pictures of children (Sabina et al., 2008).

Exposure to such content during childhood and adolescence is believed to have important consequences for youth's psychosexual development (Ševčíková & Daneback, 2014). Reviews synthesizing the research on pornography use among children and adolescents find that viewing sexually explicit content online is generally associated with more permissive sexual attitudes, less progressive beliefs about gender, and more engagement in casual or experimental sexual behaviors (Owens et al., 2012; Peter & Valkenburg, 2016; Wright, 2014). Since aggression is portrayed in pornography as an exciting part of sex, some research has examined correlations between boys' pornography use and sexual aggression perpetration. These studies typically find that boys and young men who consume high levels of pornography also perpetrate more sexual aggression (Brown & L'Engle, 2009; de Heer et al., 2020; Malamuth & Huppín, 2005; Stanley et al., 2018; Ybarra et al., 2011).

Less research, however, has examined associations between young people's pornography use and sexual victimization. Correlational studies have identified a positive association between girls' general pornography use and sexual victimization (Bekele et al., 2011; Dong et al., 2013; Ybarra et al., 2014). However, little is known about possible associations between girls' age of first exposure to pornography and sexual victimization. While not directly measuring sexual victimization, research investigating age of first pornography exposure and risky sexual behaviors offers some insight. One survey of Croatian young adults found that age of first exposure to pornography was negatively correlated with risky sexual behaviors like inconsistent condom use and early age of first intercourse, meaning that younger age of pornography exposure was related to higher rates of victimization (Sinković et al., 2013). However, these results were not reproduced in a separate survey of Australian youth, which reported non-significant associations between age of first pornography exposure and high-risk sexual behaviors (Lim et al., 2017).

Despite its potential utility as a predictor of sexual experiences, age of first pornography exposure has rarely been used in inferential analyses. The aim of the current study is to address this gap in the literature by using retrospective reports of college-age women. Surveying young adult women offers the opportunity to examine age of first Internet pornography exposure in association with sexual victimization occurring in both childhood and adulthood. While this line of research is new and largely exploratory, we predicted that earlier age of first Internet pornography exposure would be associated with more sexual victimization. As previous research has proposed, it is possible that viewing pornography at a young age normalizes sexual aggression (Ybarra et al., 2014). Additionally, we were interested in separately evaluating age of first unintentional Internet pornography exposure and age of first intentional Internet pornography exposure as predictors of sexual victimization. These analyses were intended to be exploratory and so we did not generate specific hypotheses for them.

## METHOD

### PARTICIPANTS

Participants were 154 undergraduate women attending a public university in the Pacific Northwest. On average, these women were 19.68 years old ( $SD = 1.50$ ). Most participants identified as white/Caucasian (65.6%), with smaller proportions identifying as Asian or Pacific Islander (19.5%), Multiracial (6.5%), Latina/Chicana/Hispanic (3.2%), Black/African American (1.9%), or Native American/Native Alaskan (0.6%). Four women (2.6%) identified as a race not listed on the survey. Participants reported their sexual orientation as heterosexual (92.9%), bisexual (3.2%), gay or lesbian (1.3%), or a sexual orientation not listed in the survey (2.6%).

### MATERIALS

#### *Internet Pornography*

Several questions evaluated Internet pornography experience and current use. The first item prompted respondents to indicate which of the following best described their overall experience with Internet pornography: (1) "I have never viewed internet pornography, intentionally or unintentionally;" (2) "I have only viewed internet pornography unintentionally;" and (3) "I have intentionally viewed internet pornography on at least one occasion."

Age of first Internet pornography exposure was measured with two items. The first asked participants to report the age at which they first unintentionally viewed pornography, and the second asked about the age at which they first intentionally viewed pornography. Several items related to recent or current Internet pornography use. Dichotomous questions asked participants to report (*Yes, No*) if they were unintentionally exposed to Internet pornography over the past six months, had intentionally viewed Internet pornography over the past six months, and whether they had masturbated to Internet pornography over the past six months. Current Internet pornography use frequency was represented by the item, "How often during the past month have you used internet pornography to masturbate?" Responses to this item ranged from 1 = *Never* to 8 = *More than 3 times a day*.

#### *Sexual Victimization*

Sexual victimization was measured with the Brief Betrayal Trauma Survey (BBTS; Goldberg & Freyd, 2006), Sexual Experiences Survey (SES; Koss & Oros, 1982), and the Interpersonal Sexual Objectification Scale (ISOS; Kozee et al., 2007). The BBTS is a 12-item self-report measure of traumas categorized by level of interpersonal betrayal. Scale items include non-interpersonal traumas (i.e., car accidents and natural disasters), interpersonal traumas perpetrated by individuals close to the victim, and interpersonal traumas perpetrated by individuals not close to the victim.

For the present study, we were interested only in BBTS items related to sexual victimization. These items were, "You were made to have some form of sexual contact, such as touching or penetration, by someone with whom you were very close (such as a parent or lover)," and "You were made to have such sexual contact by someone with whom you were not close." Participants indicated how often they experienced each item (0 = *Never*, 1 = *One or two times*, 2 = *More than that*) at two time periods: before the age of 18 and at age 18 or older. Childhood sexual abuse was determined by summing the two items for victimization that occurred prior to 18 years. Similarly,

the variable for adulthood sexual abuse was created by summing the two items describing events happening at 18 years or older. In the current sample, internal reliability was .85 for all items in the BBTS and was .64 for the four BBTS sexual victimization items.

A slightly modified version of the 13-item SES was used to measure a wider range of sexual aggression victimization, including verbal coercion and forceful sexual assault. Three modifications to the scale were made to address limitations of the scale that might exclude important forms of sexual victimization. First, wording of the original items specified only male perpetrators for female respondents, so “man/he” were replaced with “someone/them” to reflect a genderless perpetrator. Second, the first (“Have you ever had sexual intercourse with a man when you both wanted to”) and last (“Have you ever been raped?”) items on the original scale were not included in the present study. Finally, an item about intoxication was added (“Have you ever found out that someone had obtained sexual intercourse with you by getting you high or drunk?”). Responses to all items on the scale were a dichotomous 1 = *Yes* or 0 = *No*. Although this scale was originally developed to individually measure the prevalence of different types of sexual victimization, we used the items on the SES to create a continuous variable in order to better conduct inferential analyses. An aggregate SES variable was created by averaging the 12 items on the scale. Internal reliability was .76 for the SES items.

The ISOS is an inventory of sexually objectifying experiences. The 15 items on this scale describe leering (e.g., “How often have you noticed someone staring at your breasts or groin when you were talking to them?”), sexual comments and cat-calling (e.g., “How often have you been whistled at while walking down the street?”), and unwanted sexual contact and sexual harassment (e.g., “How often has someone grabbed or pinched one of your private body areas against your will?”). Responses to the items on this scale ranged from 1 = *Never* to 5 = *Very often*. Items were averaged to form an aggregate variable representing participants’ ISOS scores. The internal reliability for the ISOS was .96 in our sample.

## PROCEDURE

Measures in the current study were part of a larger survey of self-report questionnaires. Participants were recruited through the university’s human subjects pool and completed the study via an online survey hosted on Qualtrics. Measures were presented in the same order for all participants, starting with demographic questions and ending with the sexual victimization scales. Upon completion of the survey, participants were awarded with research credit that partially fulfilled a class requirement. All study procedures were approved by the university’s Institutional Review Board.

## DATA ANALYSIS PLAN

Prior to conducting analyses, study variables were examined for missing data. Descriptive statistics for the study variables were then computed, including endorsement frequency for Internet pornography-related items and the sexual victimization scales. We then generated bivariate correlations between age of first unintentional and intentional Internet pornography exposure, Internet pornography use frequency, and sexual victimization measures. Finally, multivariate analyses of variance (MANOVAs) were conducted to evaluate age of first unintentional and intentional Internet pornography exposure as predictors of scores on the BBTS sexual victimization items, the SES, and the ISOS.



## FINDINGS

### MISSING DATA

Missing data were highest for the BBTS items on adulthood sexual victimization, which resulted in missing data from 16 participants. Childhood sexual victimization items on the BBTS had seven missing responses, the ISOS had five missing responses, and the SES had only three missing responses. Among Internet pornography items, age of first unintentional exposure had 10 missing responses. The remaining Internet pornography items had only minimal missing data. Analyses used listwise deletion to deal with missing data.

### WOMEN'S INTERNET PORNOGRAPHY EXPOSURE AND USE

Less than half (46.1%) of the women in our sample reported intentionally viewing Internet pornography on at least one occasion. Exclusively unintentional exposure to Internet pornography was reported by 31.2% of women and 21.4% had never viewed Internet pornography at all. This means that 77.3% of women viewed Internet pornography, but 40.3% of Internet pornography viewers were exposed to it unintentionally. Among women who had seen Internet pornography, the average age of first unintentional Internet pornography exposure was 14.04 years old ( $SD = 3.15$ ) and ranged from five to 21 years old. Approximately 32% of this subsample of women (or 25.3% of all women in the survey) also reported that they had unintentionally viewed Internet pornography within the past six months at the time of the survey. Age of first intentional Internet pornography exposure was calculated for women reporting that they had intentionally viewed Internet pornography. On average, these women were 16.34 years old ( $SD = 2.28$ ) at the time they first intentionally viewed Internet pornography, with responses ranging from 12 years to 23 years. Over half (63.4%) of intentional Internet pornography viewers – 29.2% of the total sample – indicated that they had intentionally viewed Internet pornography within the past six months. A slightly smaller proportion of recent intentional Internet pornography viewers (53.5%) had used Internet pornography to masturbate within the same six-month period. Approximately 71% of the whole sample, or half (49.3%) of intentional Internet pornography viewers, indicated that they did not use Internet pornography to masturbate within the past month. Of women who masturbated to Internet pornography within the past month, most reported doing so only 1-2 times total (76%). Three women indicated that they masturbated to Internet pornography once a week and another three responded their Internet pornography masturbation frequency as 2-3 times a week. Higher frequencies (i.e., 4-6 times a week and 1 time a day), were endorsed by a single participant each. No women reported masturbating to Internet pornography more than once a day.

### WOMEN'S SEXUAL VICTIMIZATION

Responses on the BBTS items revealed that 21.1% of women experienced at least one instance of sexual abuse in childhood ( $M = .38, SD = .82$ ). The rate of women who experienced adulthood sexual abuse ( $M = .31, SD = .70$ ) as measured by the BBTS (21%) was essentially identical to the prevalence of child sex abuse. In total, 62.3% of women reported that they had experienced at least one of the items on the SES ( $M = .15, SD = .17$ ). The vast majority of women (90.3%) indicated that they had experienced at least one of the items on the ISOS ( $M = 2.64, SD = .83$ ).



## AGE OF FIRST INTERNET PORNOGRAPHY EXPOSURE AND SEXUAL VICTIMIZATION

Bivariate correlations were computed for the two Internet pornography exposure variables and the four sexual victimization variables (see Table 1). All the victimization variables were positively correlated. Age of first unintentional Internet pornography exposure was negatively correlated with the victimization variables, although the correlation between adult sex abuse on the BBTS and age of first unintentional Internet pornography exposure was only marginally significant,  $r(100) = -.192$ ,  $p = .056$ . Generally, however, younger age of first unintentional Internet pornography exposure was associated with greater levels of sexual victimization. Age of first intentional Internet pornography exposure was correlated only with age of first unintentional Internet pornography exposure,  $r(62) = .555$ ,  $p < .01$ .

**Table 1**

*Bivariate Correlations of Study Variables*

	1	2	3	4	5
1. Age of First Unintentional Exposure	--				
2. Age of First Intentional Exposure	.555**	--			
3. BBTS – CSA	-.192*	.026	--		
4. BBTS – ASA	-.192 <sup>†</sup>	.127	.529**	--	
5. SES	-.345**	-.102	.421**	.406**	--
6. ISOS	-.259**	-.049	.224**	.193*	.498**

<sup>†</sup> $p = .056$ , \* $p < .05$ , \*\* $p < .01$ . Correlations with age of first unintentional Internet pornography exposure are based on the subsample of participants with any Internet pornography exposure. Correlations with age of first intentional Internet pornography exposure are based on the subsample with intentional Internet pornography exposure. BBTS – CSA = Child Sex Abuse items on the Brief Betrayal Trauma Scale; BBTS – ASA = Adult Sex Abuse items on the Brief Betrayal Trauma Scale; SES = Sexual Experiences Scale; ISOS = Interpersonal Sexual Objectification Scale.

To more closely examine the relationship between age of first unintentional Internet pornography exposure and sexual victimization, unintentional Internet pornography exposure was transformed into a categorical variable with three levels: unintentional Internet pornography exposure before the age of 14 (the average age of unintentional Internet pornography exposure); unintentional Internet pornography exposure at age 14 or older; and no Internet pornography exposure. A MANOVA was then computed using this categorical variable as the independent variable and the four measures of sexual victimization (childhood sexual abuse and adulthood sexual abuse on the BBTS, SES, and ISOS) as the dependent variables. Overall, sexual victimization did vary by unintentional Internet pornography exposure,  $F(8, 244) = 3.65$ ,  $p < .001$ , Wilk's  $\Lambda = .80$ , partial  $\eta^2 = .11$ . Tests of between-subjects effects revealed that scores for childhood sexual abuse ( $F(2, 125) = 3.72$ ,  $p = .03$ , partial  $\eta^2 = .06$ ), adulthood sexual abuse ( $F(2, 125) = 4.63$ ,  $p = .01$ , partial  $\eta^2 = .07$ ), SES scores ( $F(2, 125) = 8.88$ ,  $p < .001$ , partial  $\eta^2 = .12$ ), and ISOS scores ( $F(2, 125) = 9.10$ ,  $p < .001$ , partial  $\eta^2 = .13$ ) were different depending on age of first Internet pornography exposure. Post-hoc analyses with Tukey's HSD revealed mean differences within each measure of sexual victimization. Table 2 contains the group means, standard deviations, and results for these analyses. In most cases, women who unintentionally viewed Internet

pornography before the age of 14 reported greater victimization than those who unintentionally viewed Internet pornography at age 14 or older. Scores on the ISOS, however, were not statistically different between these two groups. Moreover, women with no Internet pornography exposure generally reported lower levels of sexual victimization (with the exception of childhood sexual abuse) than women who unintentionally viewed Internet pornography before the age of 14.

**Table 2**

***Means, Standard Deviations, and Post-Hoc Comparisons for Sexual Victimization Measures Categorized by Age of Unintentional Internet Pornography Exposure***

	Unintentional Internet Pornography Exposure < 14 years <i>n</i> = 37		Unintentional Internet Pornography Exposure ≥ 14 years <i>n</i> = 62		No Internet Pornography Exposure <i>n</i> = 29	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
BBTS – CSA	0.65 <sub>a</sub>	1.06	0.24 <sub>b</sub>	0.62	0.24 <sub>a,b</sub>	0.58
BBTS – ASA	0.59 <sub>a</sub>	1.01	0.24 <sub>b,c</sub>	0.59	0.10 <sub>c</sub>	0.31
SES	0.26 <sub>a</sub>	0.12	0.14 <sub>b,c</sub>	0.17	0.10 <sub>c</sub>	0.13
ISOS	3.04 <sub>a</sub>	0.83	2.67 <sub>a</sub>	0.76	2.22 <sub>b</sub>	0.71

For each row (i.e., measure of victimization), means with different subscripts (a, b, c) are statistically different at  $p < .05$ . Means with the same subscript in a row are not statistically different. BBTS – CSA = Child Sex Abuse items on the Brief Betrayal Trauma Scale; BBTS – ASA = Adult Sex Abuse items on the Brief Betrayal Trauma Scale; SES = Sexual Experiences Scale; ISOS = Interpersonal Sexual Objectification Scale.

A second MANOVA was conducted with age of first intentional Internet pornography exposure as a three-level categorical independent variable predicting sexual victimization scores. The three levels are based on the average age of first intentional Internet pornography exposure (16.3 years old): intentional Internet pornography exposure before the age of 16, intentional Internet pornography exposure at age 16 or older, and no Internet pornography exposure. The multivariate test was significant, indicating that sexual victimization differed by age of first intentional Internet pornography exposure,  $F(8, 166) = 2.06, p < .05$ , Wilk's  $\Lambda = .83$ , partial  $\eta^2 = .09$ . Tests of between-subjects effects revealed that age of first intentional Internet pornography exposure predicted ISOS scores,  $F(2, 86) = 4.64, p < .01$ , partial  $\eta^2 = .14$ . Average SES scores were only marginally significant between levels of the independent variable,  $F(2, 86) = 2.90, p = .06$ , partial  $\eta^2 = .06$ . Post-hoc comparisons for the ISOS scores indicated that women who intentionally viewed Internet pornography before the age of 16 reported more objectifying experiences ( $M = 3.01, SD = .93$ ) than women who reported no Internet pornography exposure at all ( $M = 2.22, SD = .71$ ),  $p < .01$ . Similarly, women reporting intentional Internet pornography exposure at age 16 or older had higher ISOS scores ( $M = 2.83, SD = .82$ ) than women with no Internet pornography exposure,  $p < .01$ . No other mean comparisons were found to be significant. Table 3 displays the means, standard deviations, and results for the Tukey's HSD post-hoc tests.

**Table 3*****Means, Standard Deviations, and Post-Hoc Comparisons for Sexual Victimization Measures Categorized by Age of Intentional Internet Pornography Exposure***

	Intentional Internet Pornography Exposure < 14 years <i>n</i> = 21		Intentional Internet Pornography Exposure ≥ 14 years <i>n</i> = 39		No Internet Pornography Exposure <i>n</i> = 29	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
BBTS – CSA	0.48 <sub>a</sub>	0.87	0.36 <sub>a</sub>	.75	0.24 <sub>a</sub>	0.58
BBTS – ASA	0.33 <sub>a</sub>	0.91	0.44 <sub>a</sub>	0.79	0.10 <sub>a</sub>	0.31
SES	0.21 <sub>a</sub>	0.19	0.20 <sub>a</sub>	0.21	0.10 <sub>a</sub>	0.13
ISOS	3.01 <sub>a</sub>	0.93	2.83 <sub>a</sub>	0.82	2.22 <sub>b</sub>	0.71

For each row (i.e., measure of victimization), means with different subscripts (a, b, c) are statistically different at  $p < .05$ . Means with the same subscript in a row are not statistically different. BBTS – CSA = Child Sex Abuse items on the Brief Betrayal Trauma Scale; BBTS – ASA = Adult Sex Abuse items on the Brief Betrayal Trauma Scale; SES = Sexual Experiences Scale; ISOS = Interpersonal Sexual Objectification Scale.

## DISCUSSION

The aim of the current study was to evaluate the relationship between women's age of first Internet pornography exposure and experiences of sexual victimization. We predicted that women who were exposed to Internet pornography at earlier ages would report higher levels of sexual victimization. Analyses largely supported this prediction. Women who were unintentionally exposed to Internet pornography at a young age (i.e., before the age of 14, the average age of unintentional Internet pornography exposure in the current sample) reported more sex abuse in childhood, sex abuse in adulthood, and other forms of sexual aggression victimization compared to women who reported unintentionally viewing Internet pornography at ages 14 or older. Women who had never been exposed to Internet pornography reported lower levels of adulthood sex abuse, sexual aggression victimization, and interpersonal objectifying experiences compared to women with unintentional Internet pornography exposure at a younger age. Age of first intentional exposure to Internet pornography was generally not related to sexual victimization, although women with no Internet pornography exposure reported less interpersonal sexual objectification than women who had intentionally viewed Internet pornography at any age.

There may be several reasons why we found unintentional exposure to Internet pornography before the age of 14 to be related to a range of sexual victimization experiences. One possible pathway is through the influence of Internet pornography on sex scripts, which are socially constructed ideas about normal and desirable sexuality that guide sexual behaviors (Simon & Gagnon, 1986). Viewing Internet pornography during developmentally sensitive periods (i.e., younger ages at which unintentional exposure occurs) might make Internet pornography especially salient in sex script development. In this way, exposure to Internet pornography normalizes its potentially risky or dangerous characteristics, like aggression, which then can lead to the incorporation of Internet pornography into individuals' own sex scripts (Bridges et al., 2016). Viewing Internet pornography at very young ages may further bolster the adoption of Internet pornography-normalizing sex scripts, which may make identifying or interrupting risky sexual situations difficult. Supporting this idea, research with young adults has found that high levels of pornography consumption is associated

with diminished sexual refusal assertiveness (Terán & Dajches, 2020). A second pathway from women's early Internet pornography exposure to sexual victimization is through self-objectification, or the perception of oneself as a sexual object (Fredrickson & Roberts, 1997). Exposure to sexual media, including Internet pornography, is linked to women's self-objectification (Karsay et al., 2018). Greater self-objectification among women is subsequently associated with higher levels of sexual victimization through decreased sexual assertiveness (Franz et al., 2016). This suggests that some women who use Internet pornography may engage in more self-objectification and subsequently be less sexually assertive.

The association between young age of first unintentional Internet pornography exposure and sexual victimization may also be explained by girls' social environments. The contexts in which girls inadvertently view Internet pornography at a young age could signal an abusive or unsafe environment. For instance, some women's unintentional Internet pornography exposure may be the result of being deliberately shown explicit imagery online by other individuals. Exposing children to pornography is a grooming tactic used by child sex abusers to normalize sexual contact or instill feelings of guilt among victims (Berliner & Conte, 1990; McAlinden, 2006). Research also indicates that sending pornographic media online to nonconsenting recipients is a fairly common form of sexual harassment (Staupe-Müller et al., 2012). Since girls experience sexual harassment in grade school (Murnen & Smolak, 2000), it is possible that they unintentionally first view Internet pornography via sexually harassing peers who may also perpetrate sexual harassment in person. Although research on this topic is very limited, interviews with elementary school girls revealed some had received unwanted pornographic images online from peers while also experiencing other types of harassment in school (Gådin, 2012). Generally, sexualized environments in which unintentional Internet pornography exposure is likely to occur at young ages may also be likely to facilitate sexual victimization.

Our data did not, however, indicate an association between age of first intentional Internet pornography exposure and participants' self-reported experiences of sexual abuse or sexual coercion. There may be myriad reasons for this non-significant finding, including the possibility that age of girls' first intentional Internet pornography viewing is simply unrelated to these types of sexual victimization. Importantly, though, the youngest reported age of first intentional Internet pornography viewing in our sample was 12 years old; in comparison, the youngest reported age of unintentional Internet pornography exposure was five years old. Our results finding an effect for age of first unintentional Internet pornography but not age of first intentional Internet pornography exposure may be driven by the difference in overall age between the two variables. A larger sample that includes women who intentionally viewed Internet pornography at very young ages (e.g., prior to the age of 10) might produce different findings for intentional Internet pornography exposure than what we found in the present study.

Analyses also indicated that women with no Internet pornography exposure at all reported the lowest levels of interpersonal objectification. The reasons for this finding may reflect the pathways discussed above. First, sex scripts and self-objectification of women in this group may be less likely to be influenced by Internet pornography, which may make it easier for women to identify (and subsequently avoid) some sexually objectifying situations; second, social environments in which women have no exposure to Internet pornography may be overall less sexualizing and therefore less likely to cultivate sexual objectification.

In addition to testing the relationship between Internet pornography exposure and sexual victimization, our study offers descriptive information about women's experiences with Internet pornography. Although approximately 70% of women in our sample reported seeing Internet pornography, 40% of these women had only ever viewed Internet pornography unintentionally. At the time of the survey, a quarter of the women in the survey reported unintentionally seeing Internet pornography within the past six months. While rates of unintentional exposure to Internet pornography have been explored among children (Peter & Valkenburg, 2016), the current study indicates that accidental exposure to Internet pornography remains an issue in adulthood for a sizeable number of women. We did not assess whether women perceived these unwanted exposures to Internet pornography as negative, but research suggests that women often disapprove of the aggressive or degrading content that is common in pornography (Ashton et al., 2018). It is therefore possible that many instances of unintentional Internet pornography exposure are also unwanted. Many women in our sample, however, did report intentionally viewing Internet pornography. Just less than half (46.1%) of the women surveyed had ever accessed Internet pornography on purpose, but fewer (29%) reported intentionally viewing Internet pornography within the past six months. These results are similar to other recent studies on college women's Internet pornography use frequency (Carroll et al., 2008; Maas & Dewy, 2018).

The present study makes a few notable contributions to the literature. Internet pornography and sexual victimization have typically been investigated in terms of frequency of Internet pornography use and sexual victimization (Bekele et al., 2011; Dong et al., 2013; Ybarra et al., 2014). Age of first exposure to Internet pornography has previously been linked to risky sexual behaviors (Sinković et al., 2013), but to the best of our knowledge, the findings presented here are among the first to demonstrate an association between age of first unintentional Internet pornography exposure and sexual victimization. We also present findings on sexually objectifying experiences, which are an understudied form of sexual victimization. The current study may be among the first to examine associations between women's sexually objectifying experiences and Internet pornography exposure. Moreover, descriptive statistics on women's Internet pornography exposure and current use add to the relatively limited research on women's Internet pornography consumption.

## LIMITATIONS AND FUTURE DIRECTIONS

There are a few important limitations of the present study. First, the sample size was relatively small, especially for certain analyses that used subsamples of the total dataset (e.g., women with no Internet pornography exposure). Some of the study's inferential analyses, particularly those that resulted in marginal significance, would likely be stronger with a larger sample size. However, since this line of research is very limited, the present findings still offer insights that can be used to guide future research. A second limitation of the study is that we were unable to control for potential order effects since participants completed the survey's measures and items in the same sequence. Research on this topic would benefit from controlling for order effects (e.g., half of participants could respond to questions about Internet pornography use then sexual victimization, and the other half could respond first to questions about sexual victimization, followed by Internet pornography use).

A particularly notable limitation of the current study is its cross-sectional design. Our results suggest an important relationship between early age of first unintentional Internet pornography exposure and sexual victimization, but we are only able to

speculate exactly why this association exists. We are also not able to empirically identify why we found women with no Internet pornography exposure reported the lowest levels of interpersonal objectification. Qualitative research on this topic could uncover rich narratives that better contextualize women's exposure to Internet pornography with sexually victimizing experiences. Similarly, longitudinal studies could provide more precise information about the temporal relationship between Internet pornography exposure and sexual victimization. Research in this area would also benefit from more sophisticated models that include psychosexual developmental variables. For instance, examining sex scripts would allow researchers to evaluate whether it mediates the relationship between early Internet pornography exposure and sexual victimization. Additionally, future research should disentangle whether unintentional Internet pornography exposure is related to sexual victimization because of the involuntariness of the exposure or because unintentional Internet pornography exposure happens to occur at younger ages than intentional exposure. It is possible that any Internet pornography exposure at a very young age, regardless of intention, is related to sexual victimization.

## CONCLUSION

Women who unintentionally viewed Internet pornography before the age of 14 were found to experience more sexual victimization than women with later Internet pornography exposure or no Internet pornography exposure at all. This suggests that early unintentional exposure to Internet pornography may constitute a risk factor for women's sexual victimization. Based on these results, we think it is vital that children receive developmentally appropriate education about bodily autonomy, consent, and sex. A large amount of Internet pornography showcases a version of sex that targets women with aggression, violation, and degradation, making it a poor and potentially harmful way for children to learn about sexual behavior. Moreover, sex education that helps youths critically evaluate Internet pornography (i.e., porn literacy) may be especially important. Providing adolescents with tools to interrogate Internet pornography may aid in de-normalizing its content and reducing its influence on personal sex scripts.

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