

# Nonconsensual Pornography Among U.S. Adults: A Sexual Scripts Framework on Victimization, Perpetration, and Health Correlates for Women and Men

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**Objectives:** This study examines rates of nonconsensual pornography victimization and perpetration in the United States, as well as health correlates of victimization. Nonconsensual pornography (aka “revenge porn”) is defined as the distribution of sexually explicit images without consent, and is a growing form of image-based sexual abuse. In this study, we assessed rates of nonconsensual pornography victimization and perpetration among online U.S. adults using an inclusive definition of nonconsensual pornography (i.e., distributed through any method for any reason). **Method:** Online surveys were made available to adult U.S. residents via Facebook. Facebook Ads Manager was used to apply a proportional quota sampling technique to target and collect data from men and women in each of the 50 U.S. states proportionate to their representation in the nation’s populace. **Results:** Of the 3,044 adult participants (54% women), 1 in 12 reported at least one instance of nonconsensual pornography victimization in their lifetime, and 1 in 20 reported perpetration of nonconsensual pornography. As predicted from a sexual scripts framework, which describes norms for men and women’s sexual interactions, women reported higher rates of victimization and lower rates of perpetration than men. Women victims had lower psychological well-being and higher somatic symptoms than women non-victims, and also higher somatic symptoms than men victims. **Conclusions:** Results support nonconsensual pornography as a gendered form of sexual abuse that emerging adults are especially susceptible to. In addition, nonconsensual pornography victimization has a negative relationship with well-being for women, consistent with narrative accounts and qualitative research.

**Keywords:** cybersex, cyberbullying, partner abuse, nonconsensual pornography, sexual scripts

Technology is an essential mechanism for social communication today. Most Americans, across all ages, races, and socioeconomic levels, are active Internet and cell phone users, with 95% of Americans owning cell phones (Anderson, 2015) and 89% using the Internet (Pew Research Center, 2018). Unfortunately, alongside increased connectivity, technology has provided people new means to perpetrate interpersonal abuse, including technology-facilitated sexual abuse (Henry & Powell, 2016). One growing form of technology-facilitated abuse is image-based sexual abuse, which includes “upskirting,” sexualized photoshopping, and nonconsensual pornography (Henry & Powell, 2015; McGlynn, Rackley, & Houghton, 2017). The purpose of this article is to quantitatively examine rates of nonconsensual pornography victimization and perpetration among online U.S. women and men, using an inclusive definition of nonconsensual pornography. In addition, we assess

health correlates of nonconsensual pornography victimization, and how these vary by victim gender. In doing so, we set the foundation for understanding nonconsensual pornography as a form of gender-based sexual abuse.

Nonconsensual pornography is defined as the distribution of sexually graphic images of individuals without their consent (Citron & Franks, 2014), excluding commercially distributed pornography. The nonconsensual distribution of sexually explicit images, not necessarily the production or reception of the images, is the characterizing feature of nonconsensual pornography. Though the media has often used the term *revenge porn* to describe nonconsensual pornography, there are important distinctions between those two terms. First, revenge porn implies the dissemination of images for the purpose of humiliating or harming the victim (Citron & Franks, 2014). Nonconsensual pornography, however, is not always motivated by revenge (McGlynn et al., 2017). Second, the term revenge porn implies that the victim instigated the harm by doing something for which the perpetrator is seeking revenge, supporting rape myths that blame victims for their own abuse (Grubb & Turner, 2012). For these reasons, and others, scholars and advocates tend not to use the term revenge porn (Maddocks, 2018).

Research on the frequency and nature of technology-facilitated sexual abuse is still scarce. Using a nationally representative sample of U.S. adults, Lenhart, Ybarra, and Price-Feeney (2016)

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found that one in 25 online Americans had someone threaten to post/or post their nude or nearly nude image without their consent. However, the operationalization of nonconsensual pornography in that study was restricted to images distributed online and disseminated with the intent to embarrass or harm (Lenhart et al., 2016). This may have led to an underestimation of the problem, as nonconsensual pornography occurs across all domains of technology, including e-mail and text message. In addition, there are varied motivations for committing nonconsensual pornography, ranging from financial gain to entertainment (Isaac, 2014; Segall, 2015).

A subsequent online study of nonconsensual pornography prevalence in Australia using a broader definition of nonconsensual pornography found a higher prevalence rate than Lenhart and colleagues (2016), estimating that as many as one in 10 Australians had a sexual or nude image of themselves distributed without consent (Henry, Powell, & Flynn, 2017). The current study will further contribute to the literature on digital sexual abuse by examining U.S. adults' experience with nonconsensual pornography using an inclusive definition that does not limit the method of dissemination, relationship between perpetrator and victim, or perpetrator motives. In a further extension of current knowledge, we also examine health correlates of women's and men's victimization using a sexual scripts framework.

### Sexual Scripts and Nonconsensual Pornography

An exploratory analysis of nonconsensual pornography among U.S. college students found that victims were predominantly female, and perpetrators were predominately male (Branch, Hilinski-Rosick, Johnson, & Solano, 2017). Additionally, previous research has shown that men are more likely to be perpetrators of various forms of image-based abuse (Henry et al., 2017), and women are more likely to have someone threaten to post/or post nearly nude or nude images of them online to harm or embarrass them (Lenhart et al., 2016). Given that nonconsensual pornography is a potentially gendered form of sexual abuse, a sexual scripts framework is fitting for understanding this phenomenon.

Sexual scripts are learned guidelines for sexual interactions informed by cultural contexts (Simon & Gagnon, 1984). Traditional gender roles, which dictate that women behave with passivity and restraint whereas men are assertive and independent (Eaton, Rose, Interligi, Fernandez, & McHugh, 2016; Wiederman, 2005), serve as the basis for sexual scripts (Byers, 1996). For example, the sexual script for a heterosexual couple's first date dictates that the male partner asks for the outing, prepares for the outing, and pays for the outing (Eaton & Rose, 2012; Eaton, Rose, Interligi, Fernandez, & McHugh, 2016).

Among Hispanic and White emerging adults, women are consistently labeled sexual gatekeepers whereas men are expected to be initiators who are always ready for sex (Eaton & Matamala, 2014; Eaton et al., 2016). Thus, the performance of sexual scripts requires a gender-based power imbalance in agency and control, which supports male-perpetrated violence (IPV) in heterosexual relationships (Santana, Raj, Decker, Marche, & Silverman, 2006). The gender role norms that inform sexual scripts are so strong and prevalent that they are even present in same-sex relationships and among members of the lesbian, gay, and bisexual (LGB) community. For example, lesbian women are stereotyped as having low

sexual desire, and gay men are stereotyped as hypersexual (Hequembourg & Brallier, 2009; Rosenkrantz & Mark, 2018).

Further, sexual scripts contribute to polarized attitudes about men's and women's sexual experiences, also known as sexual double standards (Bordini & Sperb, 2013; Crawford & Popp, 2003). Sexual double standards are guidelines for acceptable sexual behavior that give men greater freedom to express their sexuality than women (Crawford & Popp, 2003). For example, young women who sext endanger their social reputation and face harsh labeling, whereas young men who sext can gain status because of their sexual pursuits (Burkett, 2015; Walker, Sanci, & Temple-Smith, 2013). Similarly, online pictures of women in partial clothing are perceived as "slutty" and shameful, whereas sexually explicit images of men are seen as uninteresting (Daniels & Zurbriggen, 2016).

Thus, a sexually explicit image of a woman places her in greater jeopardy of social stigmatization and repercussions than an otherwise equivalent man. Public narratives around sexting and nonconsensual pornography hold women who sent sexts accountable for the production and distribution of the image, diminishing her partner's accountability for violating her bodily autonomy (Burkett, 2015). The gendered nature of sexual scripts informing digital sexual interactions and sexual double standards for behavior appears to create a dynamic by which women are at greater risk for victimization of nonconsensual pornography as well as victim-blaming.

### Emerging Adults and Nonconsensual Pornography

One of the most "wired" groups in the United States is emerging adults (Greenwood, Perrin, & Duggan, 2016; Perrin & Duggan, 2015). Emerging adulthood is a culturally constructed developmental stage in the United States between adolescence and adulthood that takes place roughly from age 18 to 29 (Arnett, 2014). Individuals in this developmental period are heavily engaged in both online communications as well as the exploration of romantic and sexual relationships (Arnett, 2014). Sexting, or the practice of sending or receiving sexually explicit images or texts within the context of romantic relationships (Chalfen, 2009), is normative among emerging adults (Burkett, 2015), with prevalence rates ranging from 55% to 78% (Drouin, Vogel, Surbey, & Stills, 2013).

### Health Correlates of Nonconsensual Pornography Victimization

As with other forms of sexual abuse, victims of nonconsensual pornography may experience poor mental and physical health. A vast body of research finds that victims of sexual harassment (Wolff, Rospenda, & Colaneri, 2017), sexual assault (for a review, see Campbell, Dworkin, & Cabral, 2009; Kimerling & Calhoun, 1994), and other forms of sexual abuse (Ullman & Brecklin, 2003), experience more somatic symptoms and lower psychological well-being than nonvictims. Given the burgeoning frequency and recognition of nonconsensual pornography as a form of sexual abuse, and the fact that it is perpetrated using nonphysical methods, it is possible, however, that victims of nonconsensual pornography do not see themselves as survivors of assault. Indeed, sexual assault that does not involve physical force is less likely to be labeled as "rape" by victims (Abbey, BeShears, Clinton-Sherrod, & McAuslan,

2004), and great variability exists in victim responses to and perceptions of sexual assault (Fanflik, 2007). Nonetheless, even when they do not formally acknowledge their experience as “rape,” victims of sexual assault have more frequent and intense health complaints than nonvictims (Conoscenti & McNally, 2006; Layman, Gidycz, & Lynn, 1996).

Qualitative research by Bates (2017) supports the idea that nonconsensual pornography has many of the same health consequences for victims as in-person sexual assault. In individual interviews with 18 female “revenge porn” survivors, participants reported posttraumatic stress disorder, anxiety, depression, suicidal thoughts, other negative mental health outcomes as a result of their victimization (Bates, 2017). Recent research on cyber dating abuse victimization (which can include nonconsensual pornography) finds that youth victimized by cyber dating abuse are more frequently engaged in heavy drinking and risky sexual behavior (Van Ouytsel, Ponnet, Walrave, & Temple, 2016). However, no quantitative research to date has specifically examined the relationship between nonconsensual pornography victimization and well-being. Demonstrating a link between nonconsensual pornography victimization and well-being is therefore an important first step toward defining nonconsensual pornography as a form of sexual abuse, and understanding the potential public health consequences of this phenomenon.

Finally, given that sexual scripts stigmatize women, but not men, who engage in sexual behavior (Green & Faulkner, 2005), we will also examine how victims’ mental and physical health varies based on gender. Because women are more likely to receive negative social reactions as a result of victimization, and because negative social reactions are one of the strongest predictors of negative health among sexual assault survivors (Black et al., 2011; Dworkin, Ullman, Stappenbeck, Brill, & Kaysen, 2018), we expect women victims to report lower well-being than men victims.

In sum, on the basis of sexual scripts theory, as well as the literature on digital sexual interactions and abuse, we predict the following:

*Hypothesis 1:* Nonconsensual pornography victimization and perpetration rates will vary by gender, with women having higher rates of victimization than men (Hypothesis 1a), and men having higher rates of perpetration than women (Hypothesis 1b).

*Hypothesis 2:* Participants’ likelihood of experiencing nonconsensual pornography will vary with age, with participants being more likely to report that they were victims (Hypothesis 2a) and perpetrators (Hypothesis 2b) of nonconsensual pornography during emerging adulthood (age 18–29) than during any other developmental period.

*Hypothesis 3:* Psychological well-being will be lower among victims of nonconsensual pornography compared with nonvictims (Hypothesis 3a), and somatic symptoms will be higher among victims of nonconsensual pornography compared with nonvictims (Hypothesis 3b).

*Hypothesis 4:* Women victims of nonconsensual pornography will have lower psychological well-being (Hypothesis 4a) and higher levels of somatic symptoms (Hypothesis 4b) than men victims.

We also assessed the victim–perpetrator relationship and victims’ help-seeking behaviors, though we had no formal hypotheses about these variables. Additionally, we conducted exploratory analyses based on participants’ sexual orientation.

## Method

### Participants

Eligible participants were adults 18 years of age or older and residing in the United States. To safeguard the accuracy of participants’ self-reports, participants were asked to enter their year of birth at the start and end of the survey. Participants who reported different birth years were omitted from the study, under the presumption that they were not answering honestly or thoughtfully. Participants who reported a birth year indicating an age under 18 at the time of the survey were also excluded. To confirm participants’ locations within the United States, Facebook analytics targeted user profiles that indicated residence in the United States, including the state in which the participant reported residing. Participants who self-reported living outside the United States in the survey were also omitted from analyses. Data was collected from 3,088 participants. Forty-four of these participants (1%) were removed from analyses because they either reported inconsistent birth years, being minors, and/or lived outside of the United States, leaving us with a sample of 3,044.

### Procedures

Participants were recruited on the social media platform Facebook, and Facebook advertisements were used to invite participants to take an online survey. The invitation included a variation of the following statement: “Help us understand more about what Americans think about sharing nude images online. Take our survey and voice your opinion.” The images on the advertisements were unrelated to sexual content, such as computer screens or raised hands.

Facebook Ads Manager was used to apply a proportional quota sampling technique to achieve a sample of men and women adult participants in each U.S. state proportional to that state’s population. Proportional quota sampling is a nonprobability sampling technique that selects participants nonrandomly in accordance to a fixed quota (Trochim, Donnelly, & Arora, 2015). Unique to this technique is that the sample gathered is proportional to a prespecified characteristic of the population. In this case, the sample is derived from the U.S. population proportionate to the men and women populace per state (Trochim et al., 2015). In other words, we used this sampling technique to target an equal number of men and women proportional to the representation of each state in the United States. For example, according to the 2016 U.S. census demographics ~3.99% of the American population was located in Illinois. Thus, we recruited 4% of our total sample from Illinois. After the desired quota of participants from each state was reached, the ads no longer targeted that state.

The study was approved by the institutional review board at the author’s university. Completion of the survey was voluntary and completely anonymous, as explained in the online consent form, and individuals were not compensated for their participation. A list

of resources related to nonconsensual pornography and dating violence was given to all participants after survey completion.

## Measures

First, participants were asked to complete an online consent form approved by the authors' institutional review board. Participants then completed the first two measures of the study: measures of psychological well-being and somatic symptoms. We assessed participants' recent psychological well-being and somatic symptoms before asking about their experiences with nonconsensual pornography. This was done so that participants' reports of well-being would not be biased by the recollection and reporting of experience with nonconsensual pornography, potentially inflating the negative correlation between victimization and the health we anticipated. After reporting their well-being, participants received questions assessing experiences of nonconsensual pornography victimization and perpetration. Participants completed demographic questions last.

**Mental Health Inventory five-item scale.** The Mental Health Inventory five-item scale was used to assess psychological well-being (Cronbach's  $\alpha = .88$ ). It is a short version of the Mental Health Inventory 18-item scale (Berwick et al., 1991) with satisfactory validity (Rumpf, Meyer, Hapke, & John, 2001). The symptoms measured are anxiety, positive affect, depression, and behavioral/emotional control (Berwick et al., 1991). For example, anxiety was assessed with the question: "How much of the time during the last month have you been a very nervous person?" (Lee et al., 2016). Participants responded on 6-point Likert-type scales from 1 (*all of the time*) to 6 (*none of the time*; Berwick et al., 1991; Van Leeuwen, Van Der Woude, & Post, 2012). Responses were summed and transformed to a score ranging from 0 to 100, with a higher score corresponding to better psychological well-being (Van Leeuwen et al., 2012).

**Somatic Symptomology eight-item scale.** The eight-item Somatic Symptomology Scale was used to assess somatic symptoms (Cronbach's  $\alpha = .79$ ). It is the abridged version of the Patient Health Questionnaire 15-item scale (Kroenke, Spitzer, & Williams, 2002) with good construct validity (Gierk et al., 2014). This scale includes eight items assessing participants' somatic symptoms in the past 30 days, such as headaches and backpains, on 5-point Likert-type scales from 1 (*not at all*) and 5 (*very much*; Gierk et al., 2014). Possible eight-item Somatic Symptomology Scale scores range from 0 to 32, with a higher score indicating higher somatic symptoms (Gierk et al., 2014).

**Nonconsensual pornography victimization.** Nonconsensual pornography victimization was assessed with the following question: "Has anyone ever shared a sexually explicit image or video of you without your consent?" We further clarified this question with the following statement: "by 'sexually explicit' we mean images or videos of full or partial nudity, or of sexual acts (such as penetration/intercourse, oral sex, masturbation, and the use of sexual toys). Sharing could include distributing or uploading images or videos via email, text message, social media, apps, websites, DVDs, or printed photos. This does NOT include commercially-distributed pornography." Response options were "No, never (or not to my knowledge)," "Yes, once," and "Yes, more than once." Participants who selected either of the last two options were classified as victims of nonconsensual pornography. The question and clarifying

statement used to assess nonconsensual pornography in this study extend the distribution of nonconsensual pornography beyond images posted online, and include all means of possible distribution, like texts or e-mail. Participants who responded affirmatively to the question about nonconsensual pornography victimization were then asked, "How old were you at the time the image(s) was shared?"

**Nonconsensual pornography perpetration.** We assessed nonconsensual pornography perpetration with the following question: "Have you ever knowingly shared a sexually explicit image or video of someone else without his/her consent?" and the same clarifying statement as before. Response options were "No, never (or not to my knowledge)," "Yes, once," and "Yes, more than once." Participants who selected either of the last two options were classified as perpetrators, and then asked to provide the age at which perpetration occurred.

**Relationship between victims and perpetrators.** To identify their relationship with their perpetrator, victims of nonconsensual pornography were also asked "Who shared the video or image of you?" Similarly, perpetrators of nonconsensual pornography were asked "Who was in the video or image you shared (select all that apply)?" Participants could select from 10 choices, such as "A current friend at the time" to "a coworker" to "an intimate partner at the time."

**Victims' help-seeking behaviors.** We assessed victims' help-seeking behaviors for use in a white paper with our organizational partner, Cyber Civil Rights Initiative. Participants classified as victims were asked "Who did you turn to for help when you discovered that images of you had been shared without your consent?" If participants selected "no one," then they were able to select as many of the following options as applied: "it didn't bother me," "I was embarrassed or ashamed," "I was afraid," "I didn't have time," or "other." Because we had no formal hypotheses about help seeking, we analyze men's and women's help seeking in an exploratory fashion.

## Results

### Participant Demographics

Of our 3,044 participants, 53.8% were female ( $n = 1,639$ ), and the average age was 40.31 ( $SD = 19.02$ ), ranging from 18–97. A total of 82.6% of participants self-identified as White ( $n = 2,514$ ), 4.4% as Hispanic ( $n = 1,335$ ), 1.9% as Black ( $n = 59$ ), 2.0% as Asian ( $n = 62$ ), and 8.6% as other and/or multiracial ( $n = 261$ ). A total of 70.2% of participants self-identified as heterosexual ( $n = 2,138$ ), 7.5% as gay or lesbian ( $n = 228$ ), 16.5% as bisexual ( $n = 501$ ), 5.7% as other ( $n = 172$ ), and .2% did not respond ( $n = 5$ ).

A total of 8.02% of the sample ( $n = 244$ ) reported being victims of nonconsensual pornography, and 5.12% of the sample ( $n = 156$ ) reported perpetrating nonconsensual pornography. On average, participants reported being victims of nonconsensual pornography 8.72 years before taking the survey. Most victims (70.90%,  $n = 173$ ) reported that their perpetrator(s) was either a current or ex romantic partner at the time (31.15% current and 39.75% ex). They also reported that their images were sent by a friend at that time (16.80%,  $n = 42$ ), a stranger or unsure (15.98%,  $n = 39$ ), an acquaintance (12.70%,  $n = 39$ ), a former friend (5.33%,  $n = 13$ ),

a family member (1.6%,  $n = 4$ ), and a coworker (0.82%,  $n = 2$ ). Victims reported a mean of 1.26 ( $SD = .66$ ) perpetrators.

Perpetrators of nonconsensual pornography also reported their relationship to their victim(s). As with victim reports, most perpetrators (65.38%,  $n = 102$ ) reported that their victim was a current or ex romantic partner (39.10% current and 24.36% ex). The other options chosen included a friend at that time (24.36%,  $n = 38$ ), a stranger or unsure (23.08%,  $n = 36$ ), an acquaintance (17.95%,  $n = 28$ ), a former friend (5.13%,  $n = 8$ ), a family member (1.28%,  $n = 2$ ), and a coworker (1.28%,  $n = 2$ ). Seven perpetrators (4.49%) reported they were in the image themselves, along with a partner. Perpetrators reported a mean of 1.43 ( $SD = .98$ ) victims.

### Power Analyses

Before beginning data analyses, we conducted power analyses to ensure our subsamples were large enough to detect the effects of interest. All power analyses used R Version 3.5.0, and set the  $\alpha$  level at .05 and the power level at .80. First, we assessed the sample size needed to detect an effect of gender on victimization and perpetration status (Hypothesis 1). With a presumed small effect size for victimization of  $R^2 = 0.10$  (based on work on gender differences in sexual assault victimization, Hines, Armstrong, Reed, & Cameron, 2012), and one categorical predictor variable with two levels (gender), a  $\chi^2$  power analysis found that the minimum sample size needed for this test was 784.89. The harmonic mean of our sample size for victimization is 898,<sup>1</sup> suggesting we have ample power to detect an effect of gender on victimization. A similar power analysis assuming a medium effect of  $R^2 = 0.30$  of gender on perpetration status (based on work on gender differences in sexual assault perpetration, Black et al., 2011) suggested the minimum sample size needed was 87.21. The harmonic mean of our sample size for perpetration is 298.5, suggesting we have ample power to detect an effect of gender on perpetration. To detect an effect of age on victimization and perpetration status (Hypothesis 2), with a presumed small effect size of  $R^2 = 0.2$  (based on work on first instances of dating violence over the life course, Capaldi, Shortt, & Kim, 2005), and one categorical predictor variable with five levels (age), a power analysis found that the sample size needed for this test was 298.38. Our harmonic mean sample sizes exceeded this.

To detect an effect of victimization on psychological well-being and somatic burden (Hypothesis 3), with a presumed medium effect size of  $R^2 = 0.3$  (based on research on the long-term well-being of adult sexual assault victims compared with nonvictims, Elliott, Mok, & Briere, 2004), one categorical predictor variable with two levels (victimization status), and two continuous criterion variables (psychological well-being and somatic burden), a power analysis found that the minimum total sample size for this test was 350.77. Our harmonic mean sample size for victimization exceeded this minimum. To detect the effect of gender and victimization together on psychological well-being and somatic burden (Hypothesis 4), with a presumed small effect size of  $R^2 = 0.1$  (based on work findings greater negative consequences for women, such as Banyard et al., 2007), two categorical predictor variables with two levels each (victimization status and gender), and two continuous criterion variables (psychological well-being and somatic burden), a power analysis found that our minimum

sample size for this test was 3,141.47. As our harmonic mean sample size for victimization was 898, this test may be underpowered.

### Nonconsensual Pornography Victimization and Perpetration by Gender

To test Hypothesis 1a, that women would report higher rates of nonconsensual pornography victimization than men, we performed a  $\chi^2$  test conducted with SPSS 20. The analysis revealed that rates of victimization differed significantly between men and women participants,  $\chi^2(1, N = 3,044) = 6.90, p = .009$ . Women reported higher rates of nonconsensual pornography victimization (9.21%;  $n = 151/1,639$ ) than men (6.61%;  $n = 93/1,405$ ). To examine differences in rate of perpetration by gender, a  $\chi^2$  test was conducted,  $\chi^2(1, N = 3,044) = 24.46, p < .001$ . As predicted by Hypothesis 1b, women reported significantly lower rates of perpetration (3.29%;  $n = 54/1,639$ ) than men (7.26%;  $n = 102/1,405$ ). Thus, Hypothesis 1 was supported by the analyses.

### Nonconsensual Pornography Victimization and Perpetration by Developmental Stage

To test Hypothesis 2a, that individuals would most often report being victimized during emerging adulthood (age 18–29), we conducted a one sample  $\chi^2$  test with age of victimization divided into developmental stages as defined by Arnett (2014) and Newman and Newman (2018). The age range for emerging adulthood was 18–29, young adulthood was 30–44, middle adulthood was 45–59, older adulthood was 60 and higher, and those victimized as minors (17 and under) were another age category. The analysis indicated that age-groups for victimization did not occur with equal probabilities in each developmental stage,  $\chi^2(4) = 155.92, p < .001$ . Visual inspection of observed versus hypothesized frequencies of the  $\chi^2$  test revealed that Level 1, ages 18–29, was highest when compared against all other age-groups (see Figure 1). This finding was supported by the reported mean age of victimization, which was 25.99 years ( $SD = 11.65$ ).

To examine Hypothesis 2b, that individuals would most frequently report perpetrating nonconsensual pornography during their emerging adulthood, we conducted a  $\chi^2$  test with age of perpetration divided into developmental stages. The analysis indicated that age-groups for perpetration did not occur with equal probabilities,  $\chi^2(4) = 97.66, p < .001$ . Inspection of observed versus hypothesized frequencies revealed that Level 1, age 18–29, was highest compared against all other age-groups (see Figure 2). This is further supported by the reported mean age of perpetration, which was 26.61 ( $SD = 14.38$ ) years. In sum, analyses support Hypothesis 2a and Hypothesis 2b.

### Psychological Well-Being and Somatic Symptoms

To test that victims of nonconsensual pornography would report lower levels of psychological well-being (Hypothesis 3a) and

<sup>1</sup> Although we have 3,044 total participants in our sample, and similar number of men and women (53.8% women), they were not evenly distributed into the categories of victim and nonvictim ( $n = 244$  and  $n = 2,800$ ) and perpetrator and nonperpetrator ( $n = 156$  and  $n = 2,888$ ). Thus, we used the harmonic mean of two sample sizes (Cohen, 1988) for our power analyses of victimization and of perpetration.

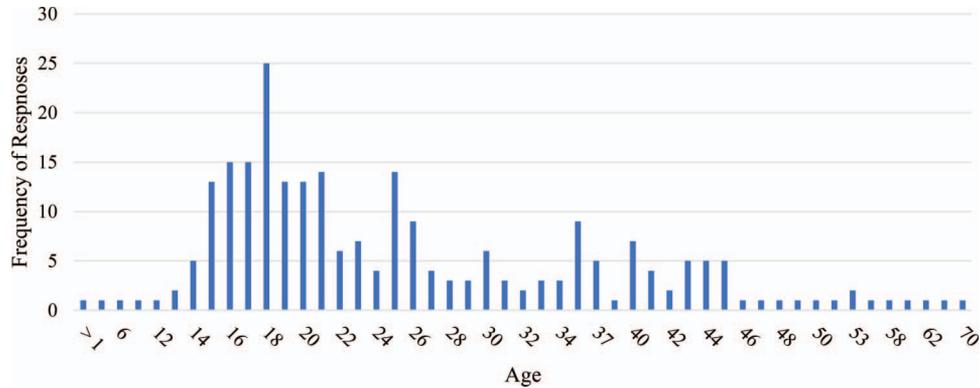


Figure 1. Age of nonconsensual porn victimization. The graph depicts the distribution of age of first incidence of nonconsensual porn victimization as reported by the sample. See the online article for the color version of this figure.

higher levels of somatic symptoms (Hypothesis 3b) than nonvictims, a  $2 \times 2$  multivariate analysis of variance was performed. Victim status, gender, and the interaction between victim status and gender were entered as predictor variables, and psychological well-being scores and somatic symptoms scores served as dependent variables. The multivariate test indicated a significant difference between victims and nonvictims,  $F(2, 3039) = 8.97, p < .001$ , Pillai's Trace = .006,  $\eta^2 = .006$ . Importantly, a main effect of gender was present on psychological well-being scores, and somatic symptoms scores, with women having lower psychological well-being scores than men, and higher somatic symptoms scores than men overall (see Table 1). The interaction between gender and victim status was nonsignificant for psychological well-being scores,  $F(1, 3040) = .45, p = .501, \eta^2 = .00$ , and significant for the somatic symptom scores,  $F(1, 3040) = 6.91, p = .009, \eta^2 = .002$ .

Because women's well-being was lower than men's overall, and because women were more often victims than men, the relationship between victimization and well-being was confounded with gender. Therefore, we moved to analyze the relationship between victimization and well-being within each gender separately, com-

paring women victims to women nonvictims and men victims to men nonvictims (see Table 1). Among women, we found a significant difference in psychological well-being between victims and nonvictims, with women victims having lower psychological well-being. Women victims also reported higher somatic symptoms scores than women nonvictims. Interestingly, no differences in psychological well-being scores or somatic symptoms scores emerged when comparing men victims to men nonvictims (all  $ps > .27$ ). However, this may be due to a lack of power. Thus, Hypothesis 3 was partially supported, as only women victims demonstrated lower well-being correlates than their same-gender counterparts.

To test Hypothesis 4, that women victims would report lower well-being than men victims, we examined the interaction of victim status and gender on psychological well-being and somatic symptoms. The multivariate test indicated a significant difference between women victims and men victims,  $F(2, 3039) = 3.64, p = .026$ , Pillai's Trace = .002,  $\eta^2 = .002$ . The interaction between victim status and gender on somatic symptoms scores was significant,  $F(1, 3038) = 6.86, p = .009, \eta^2 = .002$ , with women victims reporting higher somatic symptoms scores (see Table 1 for

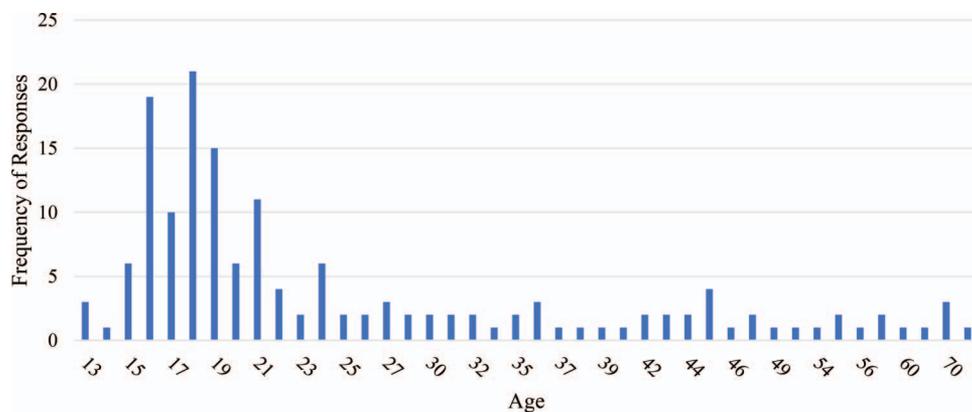


Figure 2. Age of nonconsensual porn perpetration. The graph depicts the distribution of age of first incidence of nonconsensual porn perpetration as reported by the sample. See the online article for the color version of this figure.

Table 1

*Psychological Well-Being Scores and Somatic Symptom Scores by Gender and Victimization Status*

Gender and victimization status	Psychological well-being scores			Somatic symptom scores		
	<i>M</i> ( <i>SD</i> )	<i>F</i> value	$\eta^2$	<i>M</i> ( <i>SD</i> )	<i>F</i> value	$\eta^2$
All women participants ( <i>n</i> = 1,639)	20.03 (5.03)	53.91***	.017	10.57 (5.77)	78.72***	.025
All men participants ( <i>n</i> = 1,405)	22.36 (4.92)			8.02 (5.21)		
Women victims ( <i>n</i> = 151)	19.26 (4.97)	3.88*	.002	12.91 (6.05)	27.95***	.017
Women nonvictims ( <i>n</i> = 1,488)	20.11 (5.03)			10.33 (5.69)		
Men victims ( <i>n</i> = 93)	22.00 (5.21)	0.54	.000	8.58 (5.43)	1.17	.001
Men nonvictims ( <i>n</i> = 1,312)	22.39 (4.90)			7.98 (5.20)		
Women victims ( <i>n</i> = 151)	19.26 (4.97)	0.41	.001	12.91 (6.05)	6.86**	.002
Men victims ( <i>n</i> = 93)	22.00 (5.21)			8.58 (5.43)		

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

means). However, no significant differences in psychological well-being scores were found based on victim gender. The results partially support Hypothesis 4, with women victims showing lower well-being than men victims on the measure of somatic symptoms only.

### Gender and Sexual Orientation of Victims and Perpetrators

We conducted exploratory analyses looking at the interaction of participant gender and sexual orientation on victimization and perpetration rates. These analyses should be interpreted with caution because the sample sizes for some groups are very small. Based on sexual scripts, which support men's sexual dominance, one might expect all individuals with male partners (i.e., heterosexual women and gay men) to be at increased risk for victimization, as these partners may be more likely to exert dominance and control through the dissemination of nonconsensual pornography. On the other hand, one might expect all female participants (irrespective of their sexual orientation and partner gender) to be at greater risk for victimization than male participants, as women are uniformly stigmatized for sexual expression.

Tables 2 and 3 explore the breakdown of participant gender and sexual orientation on victimization and perpetration rates. A significant difference in rates of victimization between gay and heterosexual men was found, with gay men having higher rates of victimization than heterosexual men,  $\chi^2(1, N = 1,241) = 4.91$ ,  $p = .027$  (rates in Table 2). These findings support the first perspective, which suggests that those in relationships with men are more vulnerable to nonconsensual pornography victimization.

Table 2

*Rate of Victimization by Gender and Sexual Orientation*

Gender and sexual orientation	<i>n</i> of victims	<i>n</i> of nonvictims	Total	Rate of victimization
Lesbian women	3	68	71	4.23%
Gay men	16	141	157	10.19%
Bisexual women	66	318	384	17.19%
Bisexual men	15	102	117	12.82%
Heterosexual men	61	1,023	1,084	5.63%
Heterosexual women	71	983	1,054	6.74%

Note. Total sample size = 3,044; 172 participants selected "other" for their sexual orientation and five were missing.

Critically, however, not all instances of nonconsensual pornography took place in the context of intimate relationships, and these findings are underpowered. Gay men also reported significantly higher rates of perpetration than heterosexual men,  $\chi^2(1, N = 1,241) = 4.24$ ,  $p = .040$ .

No significant difference emerged between lesbian women and heterosexual women in rate of victimization,  $\chi^2(1, N = 1,125) = .68$ ,  $p = .41$ , or perpetration,  $\chi^2(1, N = 1,125) = .41$ ,  $p = .52$  (means in Tables 2 and 3). These findings support the second perspective, that lesbian women and heterosexual women are similarly susceptible to victimization. However, these analyses are again underpowered. Finally, bisexual women have the highest rate of victimization of all groups.

### Victims' Help-Seeking Behaviors

We also conducted exploratory analyses looking at victims' help-seeking behaviors. Victims of nonconsensual pornography were asked "Who did you turn to for help when you discovered that images of you had been shared without your consent?" The three most common responses were no-one (72.95%), friends (20.08%), and website(s) where the image(s) was posted (7.49%). Most victims (66% of women and 82% of men) did not seek any help. Of the women who reported not seeking help, 39.07% reported it was because "I was embarrassed," 14.57% selected "I was afraid," 12.58% selected "It didn't bother me," and 6.62% selected "I didn't have time." Of the men who reported not seeking help, 12.90% reported it was because "I was embarrassed," 4.30% selected "I was afraid," 59.14% selected "It didn't bother me," and 3.23% selected "I didn't have time."

Table 3

*Rate of Perpetration by Gender and Sexual Orientation*

Gender and sexual orientation	<i>n</i> of perps	<i>n</i> of nonperps	Total	Rate of perpetration
Lesbian	1	70	71	1.41%
Gay	17	140	157	10.83%
Bisexual women	19	365	384	4.95%
Bisexual men	13	107	117	11.11%
Heterosexual men	69	1,015	1,084	6.37%
Heterosexual women	28	1,026	1,054	2.66%

Note. perps = perpetrators. Total sample size = 3,044; 172 participants selected "other" for their sexual orientation and five were missing.

## Discussion

### Research Implications

This study investigated the prevalence of nonconsensual pornography victimization and perpetration among U.S. adult online social media users. In our sample of 3,044 participants (54% women), one in 12 (8%) reported having been victims of nonconsensual pornography at some point in their lives, and one in 20 (5%) reported having perpetrated nonconsensual pornography. Participants in this study reported higher rates of victimization than in some previous research on U.S. online adults (Lenhart et al., 2016), likely due to the more inclusive operational definition of nonconsensual pornography we used.

Supporting Hypothesis 1, women experienced higher rates of nonconsensual pornography victimization than men overall, whereas men reported higher rates of perpetration. These gender differences are consistent with research on IPV (Black et al., 2011; Breiding, 2015; Jewkes et al., 2017), and may reflect a power imbalance informed by sexual scripts and double standards (Green & Faulkner, 2005). Although motivations for nonconsensual pornography perpetration are vast, anecdotal evidence reveals it is common for a woman's sext to be distributed without consent as a form of punishment or control by a partner or ex-partner (Cyber Civil Rights Initiative, 2018a). Even for LGB individuals, and people in same-sex relationships, the distribution of a woman's intimate image may have worse repercussions than the distribution of a man's image, as sexual minority individuals are (a) held to the same gender role norms by society as heterosexuals (Dwyer, 2015), (b) assumed to be heterosexual (Nadal et al., 2011), and (c) even held to heteronormative standards in their own relationships (Rosenkrantz & Mark, 2018). Our exploratory analyses further suggest that gay men and bisexual men are at greater risk for victimization and perpetration than heterosexual men, and that bisexual women may be the most at risk group. Future work with larger samples of sexual minorities and greater power should further examine the combined risks of gender and sexual orientation.

Supporting Hypothesis 2, age is a critical factor in contextualizing nonconsensual pornography victimization and perpetration. Participants in our study most often reported nonconsensual pornography victimization and perpetration in emerging adulthood. It is important to consider that the age distribution of first incidence of victimization and perpetration of nonconsensual pornography emerges during adolescence and then peaks during emerging adulthood. The emergence of nonconsensual pornography during adolescence reflect a similar pattern like IPV in adolescence (Centers for Disease Control and Prevention, 2016), or teen dating violence, and this makes sense because it is a developmental time where individuals start to form lasting relationship dynamics.

Additionally, women victims of nonconsensual pornography in this study reported lower levels of psychological well-being and higher levels of somatic symptoms compared with women non-victims (Hypothesis 3). This is consistent with qualitative studies that examined nonconsensual pornography victimization outcomes among women (Bates, 2017). Women victims reported higher somatic symptoms compared with men victims (Hypothesis 4), consistent with a sexual scripts framework and sexual double standards (Green & Faulkner, 2005). Previous research on IPV also finds that women experience higher mental and somatic pain

than men post victimization (Ansara & Hindin, 2011; Devries et al., 2013). This is not to negate the adverse health outcomes related to IPV for men; however, the degree and severity of impact is gender differentiated (Devries et al., 2013).

### Research Limitations

There are limitations to address with this study. The sample was collected using proportional quota sampling, which is a form of nonprobability sampling. This method of nonprobability sampling carries risk of selection bias (Lohr, 2010). The use of the Facebook ads specifying the general content of the study could also lead to selection bias. Further, although a sociodemographic quota (i.e., gender) was implemented to be proportional to the U.S. population, the results of this study cannot be generalized to the entire U.S. population of online users (Bornstein, Jager, & Putnick, 2013), as we only recruited on one social media website.

Second, the relationship between victimization and psychological well-being and somatic symptom scores is not necessarily causal. We measured well-being before inquiring about nonconsensual pornography victimization status and perpetration to avoid biasing reports of health with the salience of victimization and perpetration experiences. However, we are unable to tie the health differences between victims and nonvictims in this study to their victimization by nonconsensual pornography, especially as victims of one form of sexual abuse are at greater risk for other forms of violence and abuse that negatively relate to health (Black et al., 2011). The relationship between health outcomes and nonconsensual pornography victimization in this study is thus restricted to correlative inferences. Future research could use longitudinal methods to examine possible changes in women's health that follow nonconsensual pornography victimization. In addition, victimization in this study occurred on average 8.7 years before the time of taking this study, and the mental and physical health questions asked about symptoms from the last month. The lag between time of victimization and the reports of well-being further restricts us from making inferences about a causal link between victimization and health.

### Clinical and Policy Implications

The results highlight the pervasiveness and negative health correlates related to nonconsensual pornography for women, which has important clinical and policy implications. Nonconsensual pornography is a form of gender-based sexual abuse that must be recognized by health professionals. Nonconsensual pornography victimization is associated with negative physiological and mental health for women. This is consistent with qualitative research that finds victims of nonconsensual pornography experience a wide range of negative mental health outcomes like anxiety, depression, and even posttraumatic stress disorder (Bates, 2017), which were dealt with using coping mechanisms such as denial, self-medication, and drinking (Bates, 2017).

However, future research should investigate individual differences in the extent to which nonconsensual pornography is experienced as problematic by victims, as well as individual variability in coping and responses to victimization. In this study, we did not ask victims whether they perceived the nonconsensual distribution of their intimate image(s) as a form of sexual assault, nor did we

ask them to report how troublesome or painful their victimization was, and previous work on sexual assault supports individual differences in victim responses to and perceptions of sexual abuse (Fanflik, 2007). Interestingly, and consistent with sexual script, we did find that women victims in our study did not seek help for their victimization primarily because of embarrassment and fear, whereas men victims did not seek help mainly because it didn't bother them. Sexual scripting theory would also predict that individuals who violate any other aspect of heteronormative gender roles, such as being gay, would encounter additional challenges if that violation is exposed via nonconsensual pornography. Risk factors for nonconsensual pornography victimization and distress from victimization, such as sexual identity, should be explored in future research.

Particular forms of nonconsensual pornography may also be related to more or less distress among victims (Pieschl, Kuhlmann, & Porsch, 2015). For example, nonconsensual pornography showing the victim's face, images distributed directly to people in the victim's network (e.g., employers and colleagues), or images that reveal a stigmatized identity of the victim's (e.g., being gay or transgender), may be especially harmful to the victim's well-being and relationships. Finally, different types of nonconsensual pornography may systematically elicit different coping strategies from victims. Experimental research on cyberbullying, for example, finds that students who were publicly "outed" via cyberbullying (i.e., those who had an embarrassing secret about them disclosed) were more likely to use passive coping strategies than those who were publicly harassed with insults (Pieschl, Porsch, Kahl, & Klockenbusch, 2013).

Most victims in our sample were victimized by a current or ex romantic partner. As some research finds that sexual assault by a partner (vs. nonintimate partner) is most strongly related with stress outcomes (Temple, Weston, Rodriguez, & Marshall, 2007), nonconsensual pornography may be an especially traumatic form of digital sexual abuse. Despite the potential for increased stress, however, researchers find that sexual assault survivors are least likely to report the assault to the police when the perpetrator is someone they knew, due to shame and fear of not being believed (Ahrens, 2006; Koss, 2006). For these reasons, making a variety of supportive, nonjudgmental coping and health resources available to victims of nonconsensual pornography is an important clinical implication.

In terms of policy, 40 U.S. states and DC have laws criminalizing nonconsensual pornography (Cyber Civil Rights Initiative, 2018b; Franks, 2015). However, a national law has yet to be passed in the United States. This is concerning, as state laws vary widely in their definitions of nonconsensual pornography in ways that make the protection of victims and prosecution of perpetrators variable across the nation. For example, the current Florida State Law on "Sexual Cyberharassment" specifies that nonconsensual pornography is only criminal when (a) posted to an Internet website and (b) when it is disseminated for the purpose of "causing substantial emotional distress to the depicted person" and both "willfully and maliciously" (Sexual Cyberharassment, 2016). This law, therefore, does not protect victims whose images were disseminated via e-mail or text, or those victims who cannot prove their perpetrator had malicious intent. Future research on nonconsensual pornography should examine perpetrator methods and motives to assess whether laws like this accurately reflect the

experiences of victims and perpetrators, and to develop evidence-based policies.

Because the prevalence of sexting has increased among adolescents and teens in recent years, and increases as youth age (Madigan, Ly, Rash, Van Ouytsel, & Temple, 2018), the potential for nonconsensual pornography perpetration and victimization among young people is likely growing. In fact, a recent systematic review and meta-analysis with over 100 thousand youth participants found that 12.0% have forwarded a sext without consent, and 8.4% have had a sext forwarded without their consent (Madigan et al., 2018). Therefore, prevention and intervention efforts for preteens and early teens are of vital and immediate importance. Including information on the nature and risks of digital sexual communications in sex education classes, helping youth understand that nonconsensual pornography is correlated with reduced well-being for victims, and teaching youth about laws criminalizing nonconsensual pornography in their states, are some steps that could help to prevent the continued rise of this form of digital sexual abuse.

Finally, although our findings highlight the potential role for sexual scripts to support nonconsensual pornography, it is important to consider that nonconsensual pornography perpetration is not limited to romantic partners. People across social relationships have been reported to perpetrate nonconsensual pornography (e.g., friends or coworkers), and about 30% of victims in this study were victimized by people other than romantic partners. It is equally important to recognize that despite nonconsensual pornography victimization and perpetration being common among emerging adults, it occurs across all stages of life span development and across genders.

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