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## **How Risky is Online Sexting by Minors?**

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#### **ABSTRACT**

What proportion of minors who engage in sexting find themselves involved in an episode of image abuse? The data come from a US nationally representative sample of 2639 respondents aged 18-28 reporting about experiences before the age of 18, of whom 23% had engaged in sexting as minors. Among those who sexted the rate of image abuse was 37%, a risk ratio of 13.2 compared to those who did not engage in sexting. For females who sexted the victimization rate was particularly high, but sexting increased risk for females and males. Among the minors who only sexted occasionally (vs those who sexted frequently) the rate of abuse was still high (35%) and the reduction in risk modest. When we controlled for other background and demographic risk factors like adversities and prior sexual abuse, it did not substantially reduce the large risk entailed with sexting. Various harm reduction strategies may be needed to supplement messages about dangers and risks.

#### **ARTICLE HISTORY**

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#### **KEYWORDS**

Online sexual abuse; sextortion; child pornography; image abuse; child sexual abuse materials

Youth sexting is a significant new phenomenon in the realm of adolescent development. There are signs that a substantial segment of the youth population is making and sharing sexual images of themselves and others. For example, meta-analyses have estimated that rates among the youth population are 15–19% for sending sexual images and 27–35% for receiving them (Madigan et al., 2018; Mori et al., 2021). Some observers note a growing normative environment of acceptability for sexting within various adolescent social groups (Bianchi et al., 2021; Englander, 2019).

Unfortunately, sexting has not acquired a clear, consensual definition, particularly regarding whether it requires images or could be just textual messages. This present research will define it in the more narrow way as the sharing of youth-made images that reveal nudity, female breasts or any minor's genitals for purposes of romance, flirtation, sexual gratification, harassment or humor (Albury et al., 2017; Strasburger et al., 2019)

Sexting can contain dynamics that make it abusive and criminal, what has been termed aggravated or nonconsensual sexting (Wolak et al., 2012). These include images that are taken, made or shared without consent. They can also include images that are constructed for malicious purposes,

sometimes called deepfakes (Flynn et al., 2022). Other sexting offenses have colloquial names like revenge pornography, sextortion and image based sexual exploitation and abuse (Branch et al., 2017; Gámez-Guadix et al., 2022; Wolak et al., 2018).

Consistent with typical societal reactions to changing youth sexual behavior over the years, much of social commentary on youth sexting emphasizes concerns about impulsiveness, naivete, recklessness, short-term thinking and brain underdevelopment (van Zwanenberg, 2023). But some developmental scientists point out that sexting can play a functional role in intimacy promotion and anxiety management that make sexting an appealing option for teens trying to navigate the challenges of romantic relationships (Levine, 2013). Moreover, teens are to a great degree mimicking practices of other segments of society – young adults, social media influencers and celebrities – who also seem to be engaged in sexting and contending with its embarrassments and harms (Howard et al., 2022; Weisskirch et al., 2017). Parents and child protection professionals have concerns besides the norms of propriety. Sexting can pose risks of exploitation, victimization and psychological harm (Crimmins & Seigfried-Spellar, 2014; Mori et al., 2019). There is considerable evidence that such outcomes are not rare (Finkelhor et al., 2022).

Much advice is being proffered to parents that they should warn their children that sexting can lead to intense embarrassment and severe life course consequences: that it can endanger college acceptances, job possibilities, and future romantic relationships and even lead to criminal prosecution (Chassiakos Reid, 2023; Giroux, 2011). Prevention programs exist that try to discourage youth by giving them examples of what can happen when images end up in the wrong hands (Albury et al., 2017). Examples often include youth who have suffered ostracism, extortion and even suicide (Internet Matters.org, 2023; National Center on Sexual Exploitation, 2021).

The prevention education field appears to be divided on what approach to take in prevention messaging. On the one hand, some education emphasizes the dangers of sexting and urges youth to abstain – this may be called the "abstentionist" approach (Childline, 2023; Childnet, 2023). Given past experiences with abstentionist approaches to youth sexual behavior, some have argued that this approach will not work and is unlikely to be credible to youth, who may see their peers engaging in sexting without negative consequences (Döring, 2014; Hasinoff, 2015).

In contrast, some educators want to instruct youth in safe sexting (Patchin & Hinduja, 2020). This is sometimes termed the harm reduction approach. It argues for more cautious sexting practices that will reduce the likelihood of victimization and harm. Some maintain that sexting is not particularly risk (Dir & Cyders, 2015; Englander, 2012).

Many empirical questions are relevant to the debate about how to advise about youth sexting. One concerns the actual riskiness of the practice: Does a substantial portion of youth who sext find themselves suffering misuse and harm as a result? Youth may have doubts about the claims of alarmist parents and hold the impression that their friends and peers are sexting without harm. A second empirical question is, can the risk of misuse be minimized by more cautious sexting practices?

In a US national sample of young adults, we have gathered information both about sexting behaviors and about image abuse experiences prior to age 18. We look at the first question (the riskiness of sexting behavior) by calculating what the risk is for image victimizations of different types among those who did and did not engage in sexting. We look at the second question (can risk be minimized by cautious sexting) by examining whether those who sext less often can substantially reduce their victimization risk exposure by such restraint.

### Method

### Sample

The study was conducted using the nationally representative KnowledgePanel (KP). KP is a sample that the survey firm Ipsos has recruited via address-based sampling, from mail addresses obtained from national address data bases. After the mail recruitment, panel participants agreed to participate in regular online surveys. Digital devices were provided to any recruited sample members who lacked devices to participate. All the KP panelists in the age range 18-to-28 years old (n = 13,884) were invited to participate in the current survey. In total, 2639 panel members participated in the survey by the end of data collection, with an overall participation rate of 20%. The study was approved and overseen by the Human Subjects Review Board of the University of New Hampshire.

The final participating sample was slightly older and had more females compared to the US population of 18- to 28-year-olds. Weights were developed for the sample to compensate for any age and gender disproportions and also to adjust for non-response and the prioritization of lower base-rate incidents among those with multiple exposures. More details on the sample and the weighting procedures are available elsewhere (Finkelhor et al., 2022).

The weighted sample was 48.5% (95% CI [45.6, 51.4) male, 49.8% (95% CI [46.9, 52.6]) female, and 1.8% (95% CI [1.2, 2.7]) other gender, 54.0% (95% CI [51.0, 56.8]) Non-Hispanic White, 12.6% (95% CI [10.6, 14.9]) Non-Hispanic Black, 23.7% (95% CI [21.3, 26.2]) Hispanic, 4.8% (95% CI [3.7, 6.2]) Non-Hispanic other, and 5.0 (95% CI [3.8, 6.4]) 2 or more races. Approximately 7.2% (95% CI [5.6, 9.2]) of respondents had less than a high school education, while 31.5% (95% CI [28.6, 34.6]) received a high school diploma, 37.3% (95% CI [34.6-40.1]) had some college education, and 24.0% (95% CI [22.2, 25.9]) had earned a bachelor's degree or higher. Most respondents had never been married (85.9% (95% CI [94.1, 87.6])), and had either part or full-time employment (66.7% (95% CI [63.8, 69.4]).

#### Measurement

Sexting was measured with a question, "How often before the age of 18 did you send sexual pictures or videos of yourself (sexting) to another person?" Response options were: never; a few times; several times; very frequently; most every day; or prefer not to answer. Two variables were created: never vs. any (a few times, several times, very frequently, most everyday) and a three-category variable: never, rare (a few times and several times), and frequently (very frequently plus almost every day).

The study operationalized several distinct forms of online exploitation and abuse in which an image might be involved (additional details available, Finkelhor et al., 2022; World Health Organization [WHO] et al., 2022)., Although the questions were about lifetime experiences (response yes/no), subsequent questions about age of occurrence allowed us to select only episodes before the age of 18. These questions were asked prior to the question about sexting behaviors.

### Non-consensual sexual image sharing

Has someone ever shared with other people a sexual picture or video of you without your permission?

### Non-consensual sexual image taking

Has someone ever taken or made a sexual picture or video of you without your permission?

### Threatened image sharing/sextortion

Has someone ever threatened to share a sexual picture or video of you to get you to do something – like take or send other sexual pictures of yourself, have a sexual relationship with them, pay them money, or something else?

### Forced image recruitment

Has someone ever threatened, tried to force you, or strongly pressured you to provide sexual pictures or videos online or through a cell phone?

### Voluntary older partner

Did you have intimate sexual conversations or share sexual pictures or videos (online or through a cell phone), even if you wanted to, with a person who was 5 or more years older than you?

Of the 2639 completed surveys, 1215 endorsed one or more of the screening questions about possible online victimizations. For those with multiple victimizations, the survey gathered follow up information on two, prioritizing episode types that were of less frequent occurrence in the sample overall, as determined by a survey pretest.

Information collected about victims included their gender and age at victimization. Follow-up questions about perpetrators concerned the relationship between perpetrator and the victim. Adult perpetrators were defined as those suspected or known to be over the age of 18.

A variety of other demographic and risk factor questions were asked.

#### Sexual orientation

"What is your sexual orientation?" Response options included: Gay/Lesbian; Bisexual/Pansexual; Heterosexual; not listed, please specify (a text box was provided); or prefer not to answer. Responses were dichotomized into heterosexual and non-heterosexual.

### Parental education

"Think about your parent or guardian who is/was the most educated. What is the highest level of school that s/he completed?" Respondents could select: Some high school or less - no diploma or GED; High school graduate - high school diploma or the equivalent (GED); some college; no degree; associate degree; bachelor's degree; master's degree; professional doctorate degree; or prefer not to A dichotomous variable, some high school or less vs high school diploma or more, was created.

#### Age cohort

Age cohort was measured by grouping the respondent's age into one of three categories: 16 years old before 2012, 16 years old between 2012 and 2014, and 16 years old between 2015 and 2021.

### Early puberty

Early puberty was measured by asking when respondents went through puberty relative to other kids. Respondents could select: before other kids your age; at the same time as other kids your age; after other kids your age; don't know/not sure; or prefer not to answer. Responses were dichotomized into before other kids your age vs all other responses.

### Non-victimization adversities

Non-victimization adversities were measured using 10 items assessing non-victimization adversity before the age of 13 from a previously validated scale (Turner et al., 2020). These items included having a very bad accident or illness, someone close to you having a very bad accident or illness, family homelessness, parental unemployment, being removed from your family, parental incarceration, parental substance use, witnessing parents arguing all the time, someone close to you attempting suicide, and someone close to you away at war. These items were combined to measure overall non-victimization adversity and the top decile was coded as having high adversity.

#### Sexual abuse

Sexual abuse or offline child sexual victimization was measured using 2 items available in the survey: "At any time in your life before age 18, did a grown-up you knew touch your private parts when they shouldn't have or make you touch their private parts? Or did a grown-up you knew force you to have sex?" and "At any time in your life before age 18, did another child or teen make you do sexual things?" Individuals were coded as experiencing offline sexual abuse if they endorsed either of these questions. This variable was restricted to victimization before the age of 13 to ensure that most sexual abuse occurred prior to the online victimization.

### Bullying

Bullying comprised three items from the Juvenile Victimization Questionnaire (JVQ). The JVQ is an inventory of childhood victimization (Hamby et al., 2004) that has demonstrated good test – retest reliability construct validity (Finkelhor et al., 2005) in previous national surveys (Finkelhor et al., 2009). Bullying/harassment items included in this survey were verbal sexual harassment ("At any time in your life before age 18, did anyone hurt your feelings by saying or writing something sexual about your body?"), bullying ("At any time in your life before the age of 18, did any kids, even a brother or sister, pick on you repeatedly by chasing you or grabbing you or by making you do something you didn't want to do?"), and emotional bullying ("At any time in your life, did you get really scared or feel really bad because kids were calling you names, saying mean things to you, or saying they didn't want you around?"). A binary variable was created to capture those who experienced at least one of the three items and were under the age of 13 at the time of victimization.

#### Maltreatment

Maltreatment was measured using three items from the JVQ including physical maltreatment ("Not including spanking on your bottom, at any point in your life before age 18 did a grown-up in your life hit, beat, kick, or physically hurt you in any way?"), emotional maltreatment ("At any time in your life

before age 18, did you get scared or feel really bad because grown-ups in your life called you names, said mean things to you, or said they didn't want you?"), and neglect ("When someone is neglected, it means that the grown-ups in their life didn't take care of them the way they should. They might not get enough food, take them to the doctor when they are sick, or make sure they have a safe place to stay. At any time in your life before age 18, were you neglected?"). Respondents who endorsed at least one of these three items, and reported being under age 13 at first victimization, were coded as having experienced child maltreatment.

### **Analysis**

Data were analyzed using Stata/SE version 18.0. Survey weights were applied during all analyses. We first conducted Pearson's  $\chi^2$  tests to compare rates of sexting across online image based sexual abuse categories. We conducted Pearson's  $\chi^2$  to compare rates of sexting across gendered experiences of image based sexual abuse. We then conducted a weighted logistic regression, simultaneous entry of all variables, to examine if previously identified risk factors explained the effect sexting had on image based sexual abuse before the age of 18, while controlling for respondent demographic factors.

#### Results

Within our sample, 23.3% had engaged in any sexting before the age of 18. Broken down, 21.0% had engaged in sexting rarely and 2.3% frequently. Any sexting had a large influence on whether respondents experienced image victimization under age 18. The rate of image victimization increased dramatically from 2.8% for the non-sexting group to 37.2% for the any sexting group, a risk ratio of 13.2 (95% CI: 10.03-17.42) (Table 1). The risk ratio was 14.9 (95% CI: 9.70-23.04) for the high impact image abuse episodes. For obvious reasons, the risk ratio was highest (34.6; 95% CI 12.44-95.99) for the youth who had voluntarily shared images with older adult partners.

Females had a substantially higher rate of image abuse than males (13.6% vs 4.03%; Chi-square(1) = 61.97, p = .001). But the females' increased risk from sexting, risk ratio 12.4 (95% CI: 9.09-16.88) was not significantly different from males, risk ratio 9.5 (95% CI: 4.78–18.74).

It should be noted that even those who engaged in no sexting had some risk for image abuse. This could be for many reasons, including having images taken of them non-consensually by others, for example when inebriated, asleep or otherwise vulnerable. Sexting only occasionally or rarely (compared to frequently) did reduce risk, for example, from 55.7% to 35.2% (Chi-square (1) = 9.92; p = .002), but it was a reduction that still carried a relatively high risk for victimization.

Table 1. Rate and increased risk of image abuse for youth who engage in no vs any sexting.

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Image based sexual abuse subtypes	No Sexting (%) (n = 2,024)	Any sexting (%) (n = 615)	Risk Ratio
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Any image based sexual abuse $(n = 286)$	2.8	37.2	13.2*
High negative emotion impact IBSA (n=133)	1.2	17.7	14.9*
Adult made or taken non-consensually $(n = 55)$	0.6	7.0	11.8*
Youth made or taken non-consensually $(n = 69)$	0.6	9.3	15.6*
Youth non-consensually shared $(n = 81)$	0.6	11.2	18.9*
Adult non-consensually shared $(n = 111)$	1.5	11.9	8.0*
Voluntarily provided to adult without non-consensual sharing $(n = 47)$	0.2	6.8	34.6*

<sup>\*</sup>All risk ratios significant at p<.05.

**Table 2.** Logistic regression of image victimization by background factors and sexting participation (n = 2,510).

Any IBSA	Odds ratio	95% CI
Cohort (ref = age 16 before 2011)		
Age 16 between 2012 and 2014	1.67*	[1.04, 2.69]
Age 16 after 2015	2.04*	[1.17, 3.57]
Non-heterosexual (ref = heterosexual)	1.43	[0.90, 2.28]
Parent education less than HS (ref = more than high school)	1.83	[0.72, 4.69]
Non-victimization adversity (age 12 and under)	1.72	[0.93, 3.18]
Sexual abuse (age 12 and under)	1.96*	[1.08, 3.58]
Bullying (age 12 and under)	1.16	[0.68, 1.97]
Early puberty	2.29**	[1.42, 3.68]
Maltreatment (age 12 and under)	1.78*	[1.05, 3.00]
Sexting Frequency (ref = none)		
Rarely (Few or several times)	12.62***	[7.74, 20.59]
Frequently (Very frequently or most everyday)	39.27***	[16.26, 94.84]
_cons	0.01***	[0.01, 0.02]

Pseudo  $R^2 = 0.3433$ , Chi-square = 202.00.

We examined whether risk of sexting might be a spurious effect of other background variables (Table 2). Image victimization risk was influenced by various factors besides sexting, but the risks only rose to significance for early sexual abuse and early puberty. However, these other risk conditions did not eliminate a very high association between sexting and image abuse.

### Discussion

The findings from this study suggest that sexting – the sharing of self-made sexual images – was very risky. Over one third of those youth who shared such self-images reported an abusive image episode. This compared to youth who did not sext, among whom image abuse occurred at a rate of 2.8%. Non-sexting youth could still be victimized because others could take or make

<sup>\*</sup>p < .05, \*\*p < .01, \*\*\*p < .001.

images at vulnerable times or sextort them by claiming to have images. Still, the increase in risk among those who sexted was thirteen-fold.

The analyses also showed that the risk of sexting was to some degree a function of other preexisting risk factors such as prior sexual abuse, or early puberty. But sexting itself seemed to be an element that strongly elevated risk above all else. Females had substantially higher image abuse risk than males. But sexting behaviors increased risk for both males and females.

It also appeared to be the case that limiting their sexting frequency to just occasionally was not strongly protective for youth. Those who engaged in limited sexting had lower victimization rates than frequent sexting youth, but the victimization rate was still 35%. Infrequent sexting did not strongly reduce the chance of having a more impactful image victimization. Impactful episodes occurred to 15.2% of the infrequently sexting youth. There may be ways of sexting that substantively reduce the risk (see below). But it appears that simply reducing the frequency was not greatly protective.

Of course, the risk of sexting needs to be placed in context. Much of sexual behavior during the teenage years is infused with risk. The risk of unwanted and assaultive sexual acts is high particularly for girls (Finkelhor et al., 2014; Gewirtz-Meydan & Finkelhor, 2020) and may be inherent in conventional teen activity such as dating, going to parties or being alone with a male (Garthe et al., 2017; Niolon et al., 2015). Sexting risk is not about just one form of risky behavior but also about a culture that valorizes sexual conquest and exploitation, tolerates sexual bullying and harassment, and is equivocal about respect and the concept of consent (Powell & Henry, 2017). It is possible that when sexual interaction moves to the digital environment it increases some risks like image abuse, but it may also reduce others, like physical assault.

Sexting behaviors are not yet fully normalized, but social norms about sexting may be changing as have norms about other sexual behaviors. Will the stigma of having sexual images in others' possession dissipate over time in some segments of society (Maheux et al., 2020)? This may complicate the formulation of credible and effective educational messages about sexting and its risks.

A substantial portion of the educational messaging about sexting aimed at youth focuses on the ideas that it could be criminally prosecuted, that it could cause embarrassment, that it could have catastrophic effects on future prospects, and that the best course is to abstain (Albury & Crawford, 2012; World Health Organization et al., 2022; Wurtele & Kenny, 2016).

But out of concern that such messages have weak credibility, other prevention programs have developed more nuanced strategies. One is to scaffold sexting in discussions of boundaries, consent, respect, and healthy relationships (Walker et al., 2011; Wurtele & Kenny, 2016). This helps potential violators to see the harm in sharing images non-consensually and validates youth who are disinclined to share images. It may be particularly useful when combined with skills to deflect requests for images, disengage from pressure and internalize these responses through opportunities to role play such situations.

Others have proposed accepting the reality that many youth will engage in sexting and adopt a harm reduction approach (Döring, 2014; Rice et al., 2012). One proposed element of a harm reduction approach is to teach safe sexting practices that may reduce risks (Patchin & Hinduja, 2020). These include making images that do not show faces or other clearly identifying features, turning off location features, and using apps with deletion capabilities.

Another element to the harm reduction strategy is to make it easier for misused images to be flagged and removed. Much of this involves getting web apps to be more aggressive and responsive to complaints and to provide clear instructions about rules and procedures for the removal of images (Gallo & Cho, 2021; Gongane et al., 2022). There is pressure on social media companies and websites to do a better job of verifying the age of users and employ artificial intelligence to remove or at least identify sexual images that may represent minors (Henry & Witt, 2021; Lee et al., 2020; Tsikerdekis & Zeadally, 2015).

In 2023, the National Center for Missing and Exploited Children (NCMEC), in partnership with Meta, launched an online tool to help minors remove their sexually explicit images. It allows users to anonymously submit a digitally hashed image that can be used to identify and remove other copies that are in circulation (Schulz, 2023). As this is a new online tool, there has yet to be an evaluation of its effectiveness. Questions that need to be answered include whether youth have confidence in the security and efficacy of this tool and whether the images get comprehensively removed.

#### Limitations

This study utilized an online panel-based survey with a relatively low participation rate and, as such, it may be biased toward active online respondents who are more prone to victimization of certain kinds. Furthermore, as a survey of young adults, experiences that occurred many years in the past may be forgotten or distorted. The survey may also be biased toward abuse experienced in the older teen years as this is closer in time and more readily remembered. Another limitation of the study lies in the order of questions. The online survey asked victimization questions before sexting questions, possibly priming the respondents to recall more readily any experiences of sexting associated with victimization. Future studies may want to randomize question order. The survey also did not enquire about safe sexting practices. Such practices may lessen the association between image based sexual abuse and sexting that was noted in this study. Future research should investigate the link between safe sexting practices and image based sexual abuse.



### Conclusion

The discussion about sexting, its risks, and its role in youth development is intensifying. Observational studies such as the present one have useful information but are limited in guiding policy. What are most needed are more experimental and evaluation studies that help guide the search for effective prevention and harm reduction.

#### Disclosure statement

No potential conflict of interest was reported by the author(s).

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#### Ethical standards and informed consent

All procedures followed were in accordance with the ethical standards of the responsible institutional review board of the University of New Hampshire and with the Helsinki Declaration of 1975, as revised in 2000. Informed consent was obtained from all participants included in the study.

#### Notes on contributors

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Deirdre Colburn, Ph.D., is a Postdoctoral Research Associate at the Crimes against Children Research Center at the University of New Hampshire. Her research interests bridge the areas of healthcare utilization, help-seeking, and the role of technology in a variety of health-related outcomes.



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