

Prevalence and Characteristics of Youth Sexting: A National Study

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sexting, child pornography, Internet, naked images

ABBREVIATIONS

AAPOR—American Association for Public Opinion Research
YISS—Youth Internet Safety Survey

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WHAT'S KNOWN ON THIS SUBJECT: Educators, public health authorities, and law enforcement are confronting an increasing number of cases in which youth made sexual images of themselves and other minors and transmitted them via cell phones and the Internet.



WHAT THIS STUDY ADDS: This study provides the first detailed and comprehensive national estimate of the percentage of youth who create and distribute various kinds of sexual images.

abstract

FREE

OBJECTIVES: To obtain national estimates of youth involved in sexting in the past year (the transmission via cell phone, the Internet, and other electronic media of sexual images), as well as provide details of the youth involved and the nature of the sexual images.

METHODS: The study was based on a cross-sectional national telephone survey of 1560 youth Internet users, ages 10 through 17.

RESULTS: Estimates varied considerably depending on the nature of the images or videos and the role of the youth involved. Two and one-half percent of youth had appeared in or created nude or nearly nude pictures or videos. However, this percentage is reduced to 1.0% when the definition is restricted to only include images that were sexually explicit (ie, showed naked breasts, genitals, or bottoms). Of the youth who participated in the survey, 7.1% said they had received nude or nearly nude images of others; 5.9% of youth reported receiving sexually explicit images. Few youth distributed these images.

CONCLUSIONS: Because policy debates on youth sexting behavior focus on concerns about the production and possession of illegal child pornography, it is important to have research that collects details about the nature of the sexual images rather than using ambiguous screening questions without follow-ups. The rate of youth exposure to sexting highlights a need to provide them with information about legal consequences of sexting and advice about what to do if they receive a sexting image. However, the data suggest that appearing in, creating, or receiving sexual images is far from being a normative behavior for youth. *Pediatrics* 2012;129:1–8

Several concerns have fueled the considerable attention to the problem of “youth sexting” among the media, parents, professionals, educators, and law enforcement.^{1–3} (Sexting generally refers to sending sexual images and sometimes sexual texts via cell phone and other electronic devices.) One concern is that youth may be creating illegal child pornography, exposing them to possibly serious legal sanctions.^{4,5} Another is that youth may be jeopardizing futures by putting compromising, ineradicable images online that could be available to potential employers, academic institutions, and family members.

These concerns have been abetted by frequently cited statistics about the supposed widespread teen involvement in sexting. The most common reference has been to a National Campaign to Prevent Teen and Unplanned Pregnancy study⁶ revealing that 20% of teenagers had sent or posted nude or semi-nude pictures of themselves. However, this research, as well as other often cited studies,^{7,8} has flaws that compromise the findings.⁹ For example, the authors of the National Campaign study used an Internet panel rather than a true population sample and included 18 and 19 year olds, and not just minors.

Moreover, none of these studies has made distinctions that allow a careful assessment of the problem from a policy perspective. The authors of studies have asked respondents about “nude or semi-nude,” “nearly nude,” or “sexually suggestive” images that might, in fact, be no more revealing than what someone might see at a beach. In some studies, sexting was defined to include text messages that could contain no images. And many studies did not distinguish between taking and sending an image of oneself as opposed to receiving or disseminating an image of another youth. For policy purposes, it is important to look at whether images

are created or simply received and whether images might qualify as child pornography, but such information is not currently available.

Our research is the first to assess in detail the range of youth sexting behaviors, including the content of images that youth receive, distribute, and create. It is intended to give parents, policy makers, and professionals a more accurate assessment of the scope of sexting.

METHODS

The Third Youth Internet Safety Survey (YISS-3) was conducted to quantify and detail unwanted or problematic technology-facilitated experiences among youth, including sexting. Data collection occurred between August 2010 and January 2011. YISS-3 was conducted via telephone surveys with a national sample of 1560 youth Internet users, ages 10 to 17, and their parents. A sample size of 1500 was predetermined based upon a maximum expected sampling error of $\pm 2.5\%$ at the 5% significance level. Human subject participation was reviewed and approved by the University of New Hampshire Institutional Review Board and conformed to the rules mandated for research projects funded by the US Department of Justice.

Abt Schulman, Ronca, and Bucuvalas, Inc, a national survey research firm, conducted the sampling, screening, and telephone interviews for YISS-3. The main sample was drawn from a national sample of households with telephones developed by random digit dialing. Using standard dispositions as defined by the American Association for Public Opinion Research (AAPOR),¹⁰ the cooperation rate was 65% (AAPOR Cooperation Rate 4-interviews/estimated eligible) and the refusal rate was 24% (AAPOR Refusal Rate 2-refusals/estimated eligible). Only a minority (1.3%) of cooperating households were

not eligible due to no or limited Internet access. Due to increasing reliance of the US population on cell phones only,^{11,12} a cell-phone random digit dial sample was included in addition to the landline sample in the YISS-3 study. The original intention was to include a sample of 300 respondents from the cell phone sample in the final target sample of 1500. However, due to problems with cell phone sample response rates, and given the required time-frame for the study, a decision was made to complete the survey once a total of approximately 1500 landline completions had been reached. At the end of data collection, 45 interviews had been completed by cell phone in addition to 1515 landline interviews, resulting in a total sample size of 1560. Analysis of youth demographic and Internet use characteristics between the cell phone and landline samples indicated the cell phone sample was accessing a harder to reach population of youth. Specifically, youth in the cell phone sample were more likely to be of Hispanic ethnicity and come from families with a single, never married parent.

Sample

Eligible respondents were youth, ages 10 to 17, who had used the Internet at least once a month for the past 6 months from any location and a caregiver in each household. Eligibility criteria were consistent with 2 previous YISSs.^{13,14} Table 1 provides details of the sample characteristics.

Procedure

In households with eligible children, interviewers asked to speak with the adult who was most familiar with that child's Internet use, and after receiving informed consent, interviewers asked a series of questions about Internet use. Then the interviewer requested permission to interview the child. Interviewers told parents that the youth

TABLE 1 Demographic Characteristics Based on Reports of Appearing in, Creating, or Receiving Nude or Nearly Nude Images or Videos

Characteristics	All Youth, N = 1560, % (n)	Youth Appearing in, Creating, or Receiving Nude or Nearly Nude Images or Videos, n = 149, % (n)
Age at time of survey, y		
10	7 (110)	1 (1)
11	7 (108)	1 (1)
12	9 (141)	0
13	13 (206)	11 (16)
14	15 (228)	11 (16)
15	15 (234)	17 (26)
16	17 (273)	28 (42)
17	17 (260)	31 (47)
Gender		
Boy	50 (775)	42 (63)
Girl	50 (785)	58 (86)
Race/ethnicity ^a		
White	73 (1139)	69 (103)
African American	15 (228)	17 (25)
American Indian or Alaskan Native	3 (41)	1 (1)
Asian	3 (49)	2 (3)
Other	2 (28)	2 (3)
Hispanic or Latino (any race)	10 (159)	17 (25)
Don't know/not ascertainable	2 (35)	1 (2)
Parent marital status		
Married	78 (1214)	79 (118)
Divorced	9 (148)	7 (11)
Single/never married	6 (98)	7 (10)
Living with partner	2 (36)	3 (5)
Separated	2 (29)	1 (2)
Widowed	2 (31)	2 (3)
Don't know/not ascertainable	<1 (4)	0
Youth lives with both biological parents	66 (1029)	62 (93)
Highest education level completed in household		
Not a high school graduate	3 (41)	1 (2)
High school graduate	13 (210)	15 (23)
Some college education	19 (299)	19 (28)
College graduate	37 (577)	37 (55)
Post college degree	28 (431)	27 (41)
Don't know/not ascertainable	<1 (2)	0
Annual household income in 2010		
<\$25 000	12 (192)	6 (9)
\$25 000–\$49 999	18 (287)	19 (29)
\$50 000–\$74 999	16 (245)	19 (29)
\$75 000–\$99 999	15 (238)	21 (32)
≥\$100 000	30 (462)	25 (37)
Don't know/not ascertainable	9 (136)	9 (13)

^a Multiple responses possible.

interview would be confidential and include questions about “sexual material your child may have seen on the Internet,” and that youth would receive \$10 for participating. In households with more than 1 eligible youth, the one who used the Internet the most often was chosen as the respondent.

After receiving parental permission, interviewers spoke with the youth and

requested permission to conduct an interview. Interviewers assured youth that answers would be confidential and they could skip any question and end the interview at any time. Steps were taken to help ensure confidentiality and safety for youth participants, including asking mostly yes or no questions, checking at regular intervals that youth were in a private location, and providing

Internet safety resources at the end of the interview. The average youth interview lasted 30 minutes and the average adult interview lasted 10 minutes.

Measurement

We created a series of 5 screener questions that asked about 3 types of sexting involvement: (1) receiving “nude or nearly nude” images, (2) forwarding or posting such images, and (3) appearing in or creating such images. When youth answered yes to screeners, follow-up questions gathered details about their responses, including the content of the nude or nearly nude images. The screeners asked:

1. Has anyone ever sent you nude or nearly nude pictures or videos of kids who were under the age of 18 that someone else took?
2. Have you ever forwarded or posted any nude or nearly nude pictures or videos of other kids who were under the age of 18 that someone else took?
3. Have you ever taken nude or nearly nude pictures or videos of yourself?
4. Has someone else ever taken nude or nearly nude pictures or videos of you?
5. Have you ever taken nude or nearly nude pictures or videos of other kids who were under the age of 18?

When youth responded positively to a screener question, interviewers asked if the incident occurred in the past year. Interviewers then asked extensive follow-up questions about up to 2 unique past year sexting episodes. Our prevalence estimates were created based on youth-level data, some of whom reported more than 1 sexting type incident. An algorithm was used to choose incidents for follow-up with a hierarchy that selected first for incidents in which pictures were taken and second for incidents in which pictures were distributed. No youth were left uncounted based on this algorithm.

Demographic information was gathered from both the parent or caregiver and the youth respondent. Parents provided information about youth age and gender; parental marital status; and household composition, education, and income. Youth reported on their race and ethnicity.

RESULTS

Types of Sexting Involvement

A total of 149 youth (9.6%) reported appearing in or creating nude or nearly nude images or receiving such images in the past year. (Only 1 youth reported forwarding or posting, and that was part of a first priority incident, so it was not counted separately.) See Table 1 for the personal characteristics of youth involved in sexting.

We differentiated 3 dimensions of the incidents that youth reported (Fig 1). The first dimension was whether youth appeared in or created images versus receiving images. Of youth reporting involvement in sexting, 39 (2.5%) appeared in or created images; 110 youth (7.1%) received images but did not appear in or create them. The second dimension, among those who appeared in or created images, was

whether a youth was pictured in an image. The third dimension was whether images were sexually explicit (ie, might qualify as child pornography; more discussion below).

Respondents Who Appeared in or Created Images

Of the 39 youth who appeared in or created images, 61% were girls, 72% were ages 16 or 17, and 6% were 10 to 12 (Table 2). Most youth created images of themselves (1.8% of sample, $n = 28$); some were photographed by someone else (0.3%, $n = 5$); and some photographed other youth (0.4%, $n = 6$). Youth stated:

"I was just dating a boy and he wanted a picture and I just sent him my picture."

"Well, I did not have a boyfriend at this time, and I was curious as to what my body would look like to other people ..., so I took some pictures."

"I was getting dressed at my boyfriend's house and this girl was there and she took a pic of me and sent it to someone and it got around the school, and after a month it went away."

"We were just messing around and being guys. It wasn't anything sexual."

Respondents Who Received Images

Of the 110 youth who received images but did not appear in or create them,

56% were girls; 55% were ages 16 or 17, and none were younger than 12. Youth stated:

"Someone sent me a picture of my boyfriend and another girl, and he's no longer my boyfriend."

"[I was] sitting in room and playing guitar. Got text message. Opened it. It showed pictures of breasts, vagina. I immediately erased it."

"This boy had 4 pictures of a naked girl—he was showing everybody in the classroom."

"In girls' locker room and some girl asked if anyone wanted to see a pic of her and her boyfriend and we thought it would be them hanging out but they were in bed together."

Were Images Sexually Explicit?

One of the goals of this study was to determine how youth define nude or nearly nude because this phraseology has been used in previous studies and been the basis of reported statistics on sexting. We asked youth whether images "showed breasts, genitals, or someone's bottom." Only 54% of the 39 youth who appeared in or created images reported pictures that met these criteria, as did 84% of the 110 youth who received images (Table 3). For 46% of youth appearing in or creating images and 16% of those receiving images, nude or nearly nude included youth wearing underwear or bathing suits, sexy poses with clothes on, and pictures focused on clothed genitals.

Other Key Features of Sexting

Emotional Impact

Twenty-one percent of respondents appearing in or creating images reported feeling very or extremely upset, embarrassed, or afraid as a result, as did 25% of youth receiving images (Table 2).

Disclosure

Twenty-eight percent of youth who appeared in or created images and 28% of those who received images either reported incidents to an authority (eg,

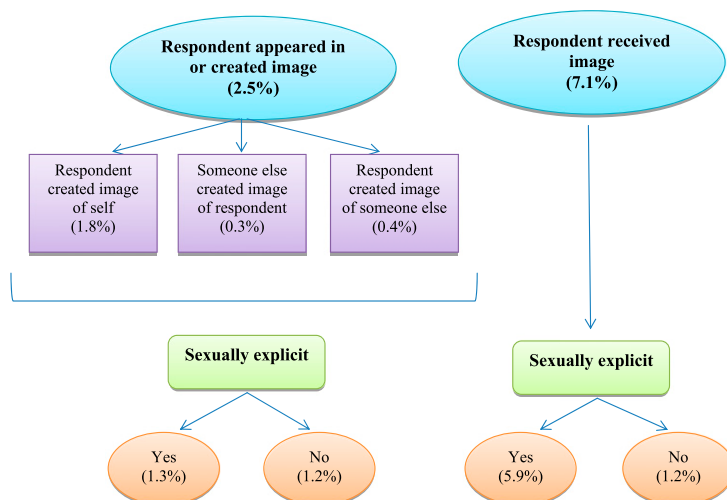


FIGURE 1
Types of sexting involvement (percentages based on $N = 1560$).

TABLE 2 Youth and Incident Characteristics (*n* = 149)

Characteristics	Actual Pictures		χ^2
	Respondent Appeared in or Created Image, <i>n</i> = 39, %	Respondent Received Image, <i>n</i> = 110, %	
Individual characteristics			
Age of youth, y			
10	3	0	13.6*
11	3	0	
12	0	0	
13	10	11	
14	0	15	
15	13	19	
16	31	27	
17	41	28	
Mean age (SD) ^a	15.7 (1.7)	15.5 (1.3)	0.7
Gender of youth			
Girl	61	56	0.3
Boy	39	44	
Incident characteristics			
Nature of the incident			
Youth saw nude or nearly nude pictures/videos of other kids who were under the age of 18 that someone else took	0	100	
Youth took nude or nearly nude pictures or videos of self	72	0	
Someone else took nude or nearly nude pictures/videos of youth	13	0	
Youth took nude or nearly nude pictures/videos of other kids who were under the age of 18	15	0	
Youth distributed the sexual images	10	3	3.6
No. times happened in past year			
Once	41	39	1.7
Twice	23	33	
3–5 times	26	22	
≥6 times	10	6	
Technology used			
Social networking site	5	8	0.4
Text messaging	44	56	1.9
Cell phone camera/cell phone	21	26	0.5
Instant messaging	10	6	0.6
Digital/video camera	21	2	16.1***
Disclosed to authority	28	28	0.0
Distress: Very/extremely			
Upset	15	22	0.7
Embarrassed	21	12	1.8
Afraid	13	4	4.3*
Any of the above	21	25	0.4
Why thought it happened			
Romance as part of existing relationship	51	54	7.7
Bullying/harassment	0	1	
Prank/joke	23	11	
Blackmail, coercion, threats	3	2	
Conflict or revenge (not related to romance or bullying)	0	1	
Trying to start relationship	5	11	
Get someone to notice you	3	7	
Some other reason	13	7	
Don't know	3	6	
Person responsible			
Youth respondent	87	0	124.8***
Someone met online	3	18	

parent, teacher, or police) or an authority found out in some other way.

Chronicity

Youth stated that over half of the incidents in both categories occurred more than once in the past year.

Context and Aggravating Features

In most of the episodes, the person responsible (when it was not the respondents themselves) was someone the youth knew in person. The most commonly reported reason for incidents was “romance as part of an existing relationship”; pranks and jokes or trying to start a relationship were also noted. A notable minority of incidents where youth appeared in or created images (31%) included an aggravating component—usually alcohol or drug use (Table 3). Adults were involved in a minority of sexting incidents; they were all young adults, ages 18 to 21.

Distribution

One of the concerns about sexting is that youth will forward and distribute images they create or receive. However, in follow-up questions, only a small proportion of youth reported forwarding or posting images. Photographs were distributed in 10% of incidents when youth appeared in or created images and in 3% when youth received images.

Prevalence Rates and 95% Confidence Intervals

Table 4 provides national prevalence estimates and 95% confidence intervals using both more and less restrictive definitions of sexting. If sexting is defined as youth creating images of themselves that include their naked breasts, genitals, or bottom, the rate of involvement is 1.0%. If sexting is defined as receiving images that depict the breasts, genitals, or bottom of a minor,

TABLE 2 Continued

Characteristics	Actual Pictures		χ^2
	Respondent Appeared in or Created Image, <i>n</i> = 39, %	Respondent Received Image, <i>n</i> = 110, %	
Boy- or girlfriend (or ex-)	3	6	
Friend or acquaintance from school	5	61	
Friend or acquaintance from someplace else	3	9	
Someone I wanted to hook up with	0	0	
Neighbor	0	1	
Knew some other way or not sure	0	5	
Gender of this person			
Male	39	56	3.7*
Female	61	44	
Age of this person			
Younger than 18 y	97	92	1.5
18 or older	3	8	

^a *F* statistic.
* *P* ≤ .05; *** *P* ≤ .001.

TABLE 3 Characteristics of Nude or Nearly Nude Images or Videos of Minors (*N* = 149)

Characteristics	Respondent Appeared in or Created Image, <i>n</i> = 39, %	Respondent Received Image, <i>n</i> = 110, %	χ^2
Pictures showed breasts, genitals, or someone's bottom			
Yes	54	84	13.9***
Naked breasts	31	63	11.9***
Genitals	36	56	4.8*
Someone mooning camera	10	15	0.6
Someone's bottom (not mooning)	21	28	0.9
Someone completely nude	26	53	8.5**
Sexual intercourse	0	5	2.2
Masturbation	10	13	0.2
Some other sexual contact	0	9	3.8*
No or don't know/not ascertainable	46	16	
Kids wearing underwear	31	10	9.5**
Kids wearing bathing suits	18	8	2.9
Focused on private parts but clothed	10	5	1.1
Sexy poses with clothes on	23	9	5.1*
No. of children in images			
1	82	90	3.5
2	13	5	
3–5	0	2	
≥6	5	3	
Adult (18+) was in images	8	5	0.3
Aggravating features			
Kids under influence of alcohol or drugs	13	8	0.7
Violence	3	1	0.6
Trickery or deception	3	3	0.003
Without person's knowledge	8	7	0.007
Against will	5	1	2.6
Money exchanged	3	0	2.8
Other promises or gifts	10	3	3.6
Any of the above	31	15	4.3*

* *P* ≤ .05; ** *P* ≤ .01; *** *P* ≤ .001.

the rate is 5.9%. If a wider category of appearing in, creating, or receiving nude or nearly nude images is used, the rates rise to 2.5% and 7.1%, respectively.

DISCUSSION

This study reveals that estimates of youth involved in sexting vary considerably

depending on what activities are included in the concept of sexting. The percentage of youth who have, in the past year, appeared in or created sexually explicit sexual images that potentially violate child pornography laws is low (1%). But if sexting is defined as appearing in, creating, or receiving sexually suggestive rather than explicit images, the survey reveals 9.6% of youth who used the Internet in the past year involved in this way. The authors of many previous surveys on sexting have used the more expansive definition that captures sexually suggestive images and includes receiving such images, with percentages similar to our 9.6%.⁹ However, the much more detailed information obtained by the current survey suggests that the percentages of youth who appear in or create sexually explicit photographs that could meet the definition of child pornography are much lower.

In the face of some widely cited, but flawed, studies claiming to show as many as 1 in 5 youth “involved in sexting”⁶ these results are to some extent reassuring. Only a low percentage of young people are appearing in or creating sexting images that could be considered illegal child pornography. Moreover, few of these images were being forwarded or posted, situations that could put youth at risk for having their images circulated online. Our lower and more accurate measurements may be particularly important for those interested in applying a “norms-based” approach to prevention, one that tries to dissuade youth from the perception that risky behaviors are the norm within their peer group. But receiving and thus possession of potentially illegal images among young people is widespread enough that education about this and its consequences is strongly warranted. Young people need to be instructed that the possession of sexually explicit images of

TABLE 4 Prevalence Rates (%) and 95% Confidence Intervals for Sexting Involvement

Type of Sexting Involvement	Youth Internet Users, %	SE	95% Confidence Interval
Hierarchical classification			
1. Youth respondent appeared in or created image	2.5	0.004	1.7–3.3
Only images that showed breasts, genitals, or someone's bottom	1.3	0.003	0.7–1.9
1a. Youth respondent created images of self	1.8	0.003	1.2–2.4
Only images that showed breasts, genitals or someone's bottom	1.0	0.002	0.6–1.4
1b. Someone else created images of youth respondent	0.3	0.001	0.1–0.5
1c. Youth respondent created images of someone else	0.4	0.002	0.01–0.8
2. Youth respondent received image	7.1	0.00648	5.8–8.4
Only images that showed breasts, genitals, or someone's bottom	5.9	0.006	4.7–7.1

minors is currently a criminal offense and that such images should be deleted and never retransmitted.

Sexting of explicit images involves a low percentage but still a considerable number of youth. This raises the question of how the law should treat such cases. Subjecting youth to severe penalties for activities that would be legal for an 18 year old as long as no exploitation was involved is increasingly being recognized as draconian. States such as Vermont have taken steps to decriminalize some forms of this behavior, whereas others have reduced the severity to misdemeanor status.^{15,16}

Our findings also raise the question of how sexting should be defined. As is often the case with popularly inspired neologisms, the term sexting may be fatally compromised by its multiple and expansive colloquial use. We recommend that authors of all future research on sexting report results in such a manner that researchers and policy makers can identify policy relevant subsets, for example, those involving sexually explicit images. The findings also reveal that it is misleading to try to assess sexting behavior with single

screening questions and ambiguous terms. Clearly, for many youth nude or nearly nude encompasses pictures that do not show naked breasts or genitals. Researchers and clinicians need to directly ask about the content of images. The findings also reveal that it is important to distinguish whether youth simply received images or appeared in or created them. Many fewer youth are involved in the latter than the former, and once again, follow-up questions are essential to establish how central a role youth played.

Our findings should be interpreted within the confines of the limitations. First, as with all self-report measures, some youth respondents may not have disclosed their sexting involvement. Second, limiting participants to those that speak English is a drawback to the study. Finally, YISS-3 consists of a sample of young Internet users; sexting involvement does not necessarily have to involve the Internet. This could result in an undercount of youth involved in sexting, although we feel the number of youth missed is low given the high percentage of youth (93% of teens, aged 12 to 17) who used the Internet from any location in 2009.¹⁷

CONCLUSIONS

There is a tendency in our rapidly evolving society to be easily alarmed about changing youth mores, a tendency we have referred to elsewhere as “juvenoaia.”¹⁸ Sexting has been greeted in many media portrayals as yet another sign of the hypersexualization of youth and extreme risk-taking. In fact, however, many indicators of youth sexual behavior such as teenage pregnancy and the number of youth with multiple sexual partners have been improving in recent years,¹⁹ in spite of such concerns. It is incumbent on youth-serving professionals not to respond or abet media portrayals that promote alarm. Sexting may not indicate a dramatic change in youth risk-taking or youth sexual behavior. It may just make some of that behavior more visible to adults and other authorities. Good research and sympathetic clinical assessment is necessary to understand the nature and extent of activities such as sexting before strong recommendations about how to counsel and educate youth and their families are developed and disseminated.

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