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# Sexual Media Exposure, Sexual Behavior, and Sexual Violence Victimization in Adolescence

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## Abstract

**Background.** Emerging research suggests sexual media affects sexual behavior, but most studies are based on regional samples and few include measures of newer mediums. Furthermore, little is known about how sexual media relates to sexual violence victimization. **Methods.** Data are from 1058 youth 14 to 21 years of age in the national, online Growing up with Media study. **Results.** Forty-seven percent reported that many or almost all/all of at least one type of media they consumed depicted sexual situations. Exposure to sexual media in television and movies, and music was greater than online and in games. All other things equal, more frequent exposure to sexual media was related to ever having had sex, coercive sex victimization, and attempted/completed rape but not risky sexual behavior. **Conclusions.** Longer standing mediums such as television and movies appear to be associated with greater amounts of sexual media consumption than newer ones, such as the Internet. A nuanced view of how sexual media content may and may not be affecting today's youth is needed.

## Keywords

sexual media, sexual violence victimization, adolescent sexual behavior

In the absence of effective sex education, and after nearly a decade of federally funded abstinence-only sex education, the media have arguably become the leading sex educator in the United States today.<sup>1</sup> This may not bode well for young people given that few media programs provide accurate sex information.<sup>2-6</sup> Indeed, only 10% of sexual content on television (TV) shows that are popular among teenagers portray the risks of early intercourse accurately.<sup>7</sup>

At the same time that sexual content in the media has increased<sup>7,8</sup> and become more graphic,<sup>9</sup> rates of sexual activity seem to have stabilized,<sup>10</sup> and the teen pregnancy rate is at its lowest level in the past several decades.<sup>11</sup> One could conceivably argue then, that sexual images in media have little to no impact on teenagers' sexual behavior. However, 19 studies have found a significant relationship between sexual media and adolescent sexual behavior,<sup>12-30</sup> including oral sex,<sup>21</sup> casual sex,<sup>24</sup> multiple partners,<sup>12</sup> sexually aggressive behavior,<sup>25</sup> and even teen pregnancy.<sup>17</sup> Dozens of studies also have found that media can significantly influence youths' attitudes and beliefs about sex and sexuality.<sup>2-6</sup> Most of the studies involve small sample sizes, and there is a paucity of national studies, which limits generalizability of findings.

Most studies have examined TV<sup>13,14,17,18,24,26,30</sup> or movies<sup>29</sup> to the exclusion of other media. A few have included a broader range of exposures (ie, movies, TV, magazines, music) and have focused on one's "sexual media diet" more generally.<sup>15,23</sup> Only 3 studies have included Internet exposure, however.<sup>21,25,27</sup>

Research has identified links between pornography and sexually aggressive behavior among adolescents,<sup>25,31</sup> as well as sexual victimization among adults.<sup>32,33</sup> Pornography is different from generalized sexual media exposure because it is more explicit and, at the same time, less pervasive. Little is known about how victimization may relate to generalized sexual media, particularly among adolescents. Perhaps victimization leads youth to seek out sexual content to validate or contextualize their experience. It

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also may be that youth who have frequent exposure to sexual media have different expectations about relationships and associated boundaries. Understanding whether and how exposure to sexual content across different mediums relates to victimization could further our understanding of how media contextualize youth experiences.

## Methods

*Growing up with Media* (GuwM) is a longitudinal survey of youth and their adult caregivers in the United States. It was originally designed to examine the associations between exposure to violent media and violent behavior. Adult respondents were recruited at baseline through an email sent to randomly identify adult Harris Poll OnLine (HPOL) panel members who reported having a child living in the household. Eligible adults were equally or more knowledgeable than other adult household members about the youth's media use. Youth participants were 10 to 15 years old (mean = 12.6 years, standard deviation = 1.7 years), read English, lived in the household at least 50% of the time, and used the Internet in the last 6 months. Recruitment was balanced on youth biological sex and age.

Wave 1 data were collected between August and September 2006 with 1586 youth-caregiver pairs. Extensive questions about sexual behavior and sexual violence were added at Wave 4. Therefore, data discussed in the current article were collected in Wave 4 (fielded October 2010 to February 2011) and Wave 5 (fielded October 2011 to March 2012). The survey protocol was reviewed and approved by the Chesapeake Institutional Review Board. Caregivers provided informed consent for their participation and permission for their child's participation; youth provided informed assent.

The response rate (31%) is well within the expected range of well-conducted online surveys. Of the 1586 households who completed the baseline survey, 67% (n = 1062) completed either or both of the Wave 4 (response rate = 56%, n = 887) and Wave 5 (response rate = 59%, n = 939) surveys. Characteristics of nonresponders and responders were similar.<sup>31</sup>

On average, caregivers took 15 minutes and youth took 32 minutes to complete their portion of the GuwM survey, respectively. Caregivers received \$20 and youth \$25 as an incentive. To increase response rates at the end of the field period, an additional \$10 bonus incentive was offered to nonresponders.

## Measures

*Exposure to sexual media* was asked with 5 separate questions: "When you [consume a specific media type],

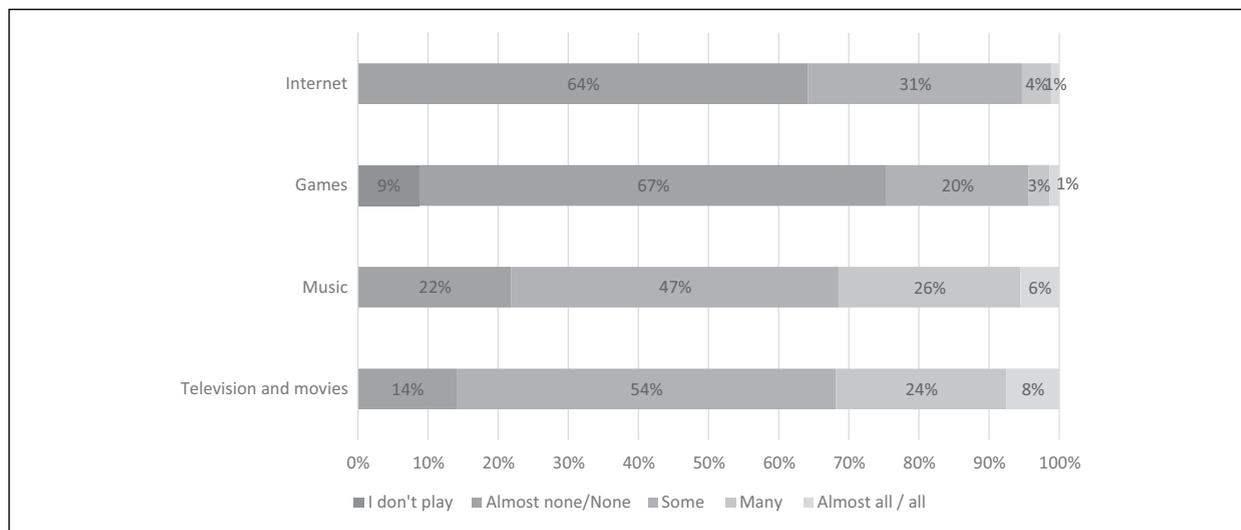
how many show people kissing, fondling, or having sex?" Television and movies; music; games on the computer, Internet, or video games; Web sites that show real people; and Web sites that show cartoons were separately queried. Response options were: almost none/none of them, some of them, many of them, and almost all/all of them. For games, an additional option was provided: I have not played a video, computer, or Internet game in the past 12 months. Youth were placed into 1 of 3 categories: (a) almost no/no exposure to sexual material in any medium (reference group); (b) some exposure to sexual material in at least 1 medium; or (c) many or almost all/all exposure to sexual material in at least 1 medium. This categorization scheme is consistent with previous research of violent media.<sup>34</sup>

*Sexual behavior:* First, youth were asked: "Have you ever had sexual intercourse?" Youth who said "yes" were then asked: "How old were you when you had sexual intercourse for the first time? We are talking about when you wanted to. If you are not sure about your answer, your best guess is fine." Respondents also were asked: "How many people have you ever had sex with? Again, we are talking about the times you wanted to. If you are unsure of the answer, your best guess is fine." Youth also were asked how often they used a condom generally. Response options for the latter were none of the time, some of the time, half of the time, most of the time, all of the time, and decline to answer.

*Sexual violence victimization:* Sexual harassment was queried with 9 items.<sup>35,36</sup> Example questions include the following: "Someone spread sexual rumors or wrote sexual messages about someone in a public place such as the bathroom walls, in locker rooms, etc" and "Someone grabbed or pinched someone, or grabbed someone's clothing in a sexual way when I *did not want them to*."

Sexual assault was asked using an item created specifically for this study: "In the last 12 months, how often has someone kissed, touched, or made you do anything sexual when you *did not want you to*?" Coerced sex was queried: "I gave into sex when I *did not want to*."<sup>35</sup> Attempted ("Someone had tried, but was not able, to make me have sex when I *did not want to*) and completed ("Someone made me have sex when I *did not want to*) rape were measured using items from the same survey.<sup>35</sup>

*Confounders* that were posited to possibly explain the relation between sexual media exposure, and sexual behaviors and sexual violence victimization included the following: youth biological sex, race, ethnicity, household income, age, exposure to violent and nonviolent pornography, exposure to violent media, one's emotional bond with one's caregiver, caregiver monitoring,



**Figure 1.** Exposure to sexual media by mode.

coercive discipline, sexual/gender minority identity (i.e., identifying as LGBT versus not), and survey process measures. Detailed information about these measures is available on request.

### Data Cleaning and Identifying the Analytical Sample

HPOL data are comparable to data that have been obtained from random telephone samples of adult populations once appropriate sample weights are applied.<sup>37-40</sup> Data were weighted statistically at Wave 1 to reflect the population of adults with children ages 10 to 15 years old in the United States according to adult age, sex, race/ethnicity, region, education, household income, and child age and sex.<sup>41</sup> Survey sampling weights also adjusted for adult respondents' self-selection into the HPOL, as well as accounted for attrition over time.<sup>37-40</sup>

Missing data (ie, "do not want to answer" responses) were imputed using the "impute" command in Stata. To reduce the likelihood of imputing truly nonresponsive answers, participants were required to have valid data for at least 80% of the survey questions asked of all youth. Of the 1062 young people who responded in Wave 4 or 5, 1058 met this criterion. Stata version 11 statistical software (StataCorp LP) was used to conduct all statistical analyses. As such, reported percentages are weighted whereas sample sizes are not.

First, prevalence rates of sexual behavior and sexual violence victimization were estimated based on one's exposure to sexual material. Given important sex

differences noted in the literature in terms of sexual behavior<sup>42</sup> and sexual victimization,<sup>43</sup> rates were estimated for the entire sample, as well as by biological sex. Next, the relative odds of each sexual behavior or sexual violence victimization were estimated given one's exposure to sexual content, adjusting for potential confounders (eg, exposure to violent media). Estimates were generated for all sexual media, as well as by each of the 4 mediums assessed.

Longitudinal analyses were not run because of low base rates of some outcome measures (eg, rape). Instead, data from both waves were combined to support more stable estimates. Thus, 1808 observations from 1058 respondents were included in analyses. Generalized estimating equations (GEE) were used to estimate a logistic regression model for dichotomous outcomes (eg, ever had sex) and a linear regression model for continuous outcomes (eg, age at first sex), while taking into account within-person correlations. Exchangeable correlations were assumed.

### Results

Forty-seven percent of youth reported that many or almost all/all of at least one type of media they consumed (ie, Web sites, music, games, and/or movies) depicted sexual situations, compared to 45% who said that some did, and 8% who said almost none/none of all of the media that they consumed did. As shown in Figure 1, 5% of youth said that many, almost all, or all of the Web sites they visit depicted sexual scenes, compared to 4% of youth who played games, 32% of youth about the music they listened to, and 32% of youth about

the TV and movies they watched. (Because exposures are not mutually exclusive, statistical comparisons cannot be made across media.)

Exposure to sexual media varied by biological sex: 45% of youth who said that many or almost all/all of at least one media consumed depicted sexual situations were male, as were 58% of youth who said that some did, and 55% of youth who said that almost none/none did,  $F(1.97, 2077.68) = 5.35, P = .005$ . When looking at specific media types, males were overrepresented in the highest category of exposure to sexual media online and in games; females were overrepresented in the highest category of exposure to sexual media in music and in movies and TV.

Prevalence rates and mean numbers of sexual behaviors and sexual violence victimization based on one's exposure to sexual material are shown in Table 1. Rates varied significantly by whether one had ever had sex, inconsistent condom use, and all types of sexual violence victimization. When stratified by biological sex, rates of ever having sex, sexual harassment, coerced sex, and attempted/completed rape significantly differed by sexual media exposure for both female and male youth. Differences were also noted in inconsistent condom use, age at first sex, and sexual assault victimization for male but not female youth.

As shown in Table 2, the relative odds of ever having sex were almost 4 times higher for youth who reported that some of at least one media they consumed, and more than 5 times higher for youth who reported that many or almost all/all of at least one media they consumed depicted sexual situations, compared to youth who reported that almost none/none of the media they consumed depicted sexual situations. This was true even after adjusting for other possibly influential characteristics (eg, exposure to violent media and x-rated material). All other sexual behaviors were unrelated to past-year sexual media exposure.

The relative odds of coerced sex victimization were almost 6 times higher for youth who reported that some of at least one media they consumed and 7 times higher for youth who reported that many or almost all/all of at least one media they consumed depicted sexual situations, compared to youth who reported that almost none/none of the media they consumed depicted sexual situations among otherwise similar youth. The relative odds of attempted or completed rape were elevated for youth who reported that many, almost all, or all of at least one medium they consume depicts sexual situations. All other sexual violence victimization experiences were unrelated to the amount of sexual media one reported consuming in the past year.

Associations were also examined by medium (Table 2). Exposure to sexual media was associated with having

sex if it was through movies and magazines, in music, or in games. Number of sexual partners increased as the level of exposure to sexual material in music increased. The relative odds of coercive sex victimization were higher for exposure to sexual material in movies and magazines, but not other media. There was some indication that the odds of attempted or completed rape were higher for those exposed to sexual media via movies and TV, music, or games. Exposure to sexual media online failed to predict any of the sexual behavior or victimization outcomes assessed.

## Discussion

It appears to be virtually impossible for youth to avoid sexual media: 92% of 14 to 21 year olds in our national survey said that at least "some" of the TV and movies they watch, music they listen to, games they play, or Web sites they go to show people kissing, fondling, or having sex. This is occurring during a time period when rates of key indicators of risky sexual behaviors, including teen pregnancy,<sup>11</sup> sex with 4 or more persons, drinking alcohol or drug use before last intercourse, and sexual intercourse prior to age 13 are either declining or stabilizing, and condom use is increasing.<sup>44</sup> This is likely because exposure does not appear to contribute to *risky* sexual activity: sexual media consumption (in any amount) failed to discriminate between youth who reported inconsistent condom use and those who did not, age at first sex, or number of sex partners among otherwise similar youth. Thus, exposure to sexual material is not always bad or harmful. In fact, Ybarra and colleagues found that exposure to nonviolent x-rated material is not associated with sexually violent behavior, whereas violent x-rated material is.<sup>25,31</sup> A more nuanced exploration of the sexual media content teens consume is an important next step in better understanding how sexual media is affecting today's youth.

### *Sexual Media Is Related to Sexual Violence Victimization*

To our knowledge, this is the first study to explore the relationship between one's sexual media exposure and sexual victimization among adolescents. All 4 types of sexual victimization examined, including sexual harassment, sexual assault, rape and/or attempted rape, and coercive sex, varied significantly by amount of exposure to sexual material in the past year. The increased odds of sexual harassment, sexual assault, and rape and/or attempted rape appear to be explained by other influential factors, including x-rated material, violent media, parental monitoring, age, and biological sex. Increased

**Table 1.** Prevalence Rates or Mean Number of Sexual Behaviors and Sexual Victimization Given Amount of Exposure to Sexual Content in the Past Year Among Youth 14 to 21 Years of Age.

Sexual Experience	All Youth (N = 1808)						Females (n = 904)						Males (n = 904)					
	Almost None/ None of the Media Contains Sexual Content	Some Media Contains Sexual Content	Many, Almost All/All Media Contains Sexual Content	Almost None/ None of the Media Contains Sexual Content	Some Media Contains Sexual Content	Many, Almost All/All Media Contains Sexual Content	Almost None/ None of the Media Contains Sexual Content	Some Media Contains Sexual Content	Many, Almost All/All Media Contains Sexual Content	Almost None/ None of the Media Contains Sexual Content	Some Media Contains Sexual Content	Many, Almost All/All Media Contains Sexual Content	Almost None/ None of the Media Contains Sexual Content	Some Media Contains Sexual Content	Many, Almost All/All Media Contains Sexual Content			
Sexual behavior																		
Ever had sex																		
No	12.8% (129) <sup>b</sup>	50.7% (525)	36.6% (465)	11.8% (48) <sup>b</sup>	44.1% (219)	44.1% (275)	13.5% (81) <sup>b</sup>	56.0% (306)	30.5% (190)									
Yes	1.9% (21)	38.6% (256)	59.5% (412)	2.7% (12)	33.8% (117)	63.5% (233)	1.1% (9)	44.0% (139)	55.0% (179)									
Inconsistent condom use <sup>a</sup>																		
No	1.9% (12) <sup>c</sup>	44.1% (183)	54.0% (254)	2.9% (6)	37.5% (67)	59.7% (125)	1.1% (6) <sup>d</sup>	49.9% (116)	49.0% (129)									
Yes	1.9% (7)	27.3% (61)	70.8% (151)	2.5% (5)	27.8% (43)	69.7% (105)	0.7% (2)	26.2% (18)	73.1% (46)									
Number of sexual partners (mean: SE; lifetime) <sup>a</sup>	2.69 (0.84)	2.65 (0.29)	3.81 (0.29)	3.05 (1.09)	2.61 (0.47)	3.38 (0.31)	1.59 (0.60)	2.69 (0.35)	4.38 (0.50)									
Age at first sex (mean: SE) <sup>a</sup>	15.93 (0.51)	15.92 (0.18)	15.71 (0.17)	15.54 (0.61)	15.80 (0.23)	15.71 (0.21)	17.13 (0.44) <sup>b</sup>	16.02 (0.27)	15.70 (0.29)									
Sexual violence victimization																		
Sexual harassment																		
No	10.4% (111) <sup>b</sup>	49.4% (445)	40.2% (392)	12.3% (42) <sup>c</sup>	39.6% (152)	48.1% (195)	9.1% (69) <sup>d</sup>	56.1% (293)	34.9% (197)									
Yes	5.1% (39)	40.5% (336)	54.4% (485)	3.3% (18)	38.6% (184)	58.1% (313)	7.5% (21)	43.1% (152)	49.5% (172)									
Sexual assault																		
No	8.8% (133) <sup>d</sup>	46.5% (669)	44.7% (695)	8.3% (51)	39.3% (269)	52.4% (392)	9.3% (82) <sup>d</sup>	52.6% (400)	38.2% (303)									
Yes	3.5% (17)	39.4% (112)	57.1% (182)	3.7% (9)	38.0% (67)	58.3% (116)	3.2% (8)	41.4% (45)	55.4% (66)									
Coerced sex																		
No	8.6% (148) <sup>b</sup>	46.7% (745)	44.8% (788)	8.1% (59) <sup>d</sup>	40.5% (313)	51.4% (448)	8.9% (89) <sup>d</sup>	52.2% (432)	38.8% (340)									
Yes	0.4% (2)	28.5% (36)	71.1% (89)	0.4% (1)	25.9% (23)	73.7% (60)	0.3% (1)	32.7% (13)	67.0% (29)									
Attempted or completed rape																		
No	8.3% (145) <sup>b</sup>	46.7% (726)	44.8% (760)	8.2% (58) <sup>d</sup>	40.4% (299)	51.4% (417)	8.9% (87) <sup>d</sup>	52.2% (427)	38.9% (343)									
Yes	2.0% (5)	31.4% (55)	66.6% (117)	1.7% (2)	29.6% (37)	68.7% (91)	2.4% (3)	34.9% (18)	62.7% (26)									

<sup>a</sup> Among youth who have ever had sex.  
<sup>b</sup>  $p < .001$  statistically significant differences across the 3 levels of exposure among all youth, females, or males, respectively, based on a  $\chi^2$  test.  
<sup>c</sup>  $p < .01$  statistically significant differences across the 3 levels of exposure among all youth, females, or males, respectively, based on a  $\chi^2$  test.  
<sup>d</sup>  $p < .05$  statistically significant differences across the 3 levels of exposure among all youth, females, or males, respectively, based on a  $\chi^2$  test.

**Table 2. Relative Odds of Sexual Behaviors or Sexual Violence Victimization Given Exposure to Sexual Material Among Youth 14 to 21 Years of Age<sup>a,b</sup>**

Sexual Experiences	All Media			Movies and Television			Music			Games			Internet		
	Some Media Contains Sexual Content, aOR (95% CI)	Many, Almost All/All Media Contains Sexual Content, aOR (95% CI)	Many, Almost All/All Media Contains Sexual Content, aOR (95% CI)	Some Media Contains Sexual Content, aOR (95% CI)	Many, Almost All/All Media Contains Sexual Content, aOR (95% CI)	Many, Almost All/All Media Contains Sexual Content, aOR (95% CI)	Some Media Contains Sexual Content, aOR (95% CI)	Many, Almost All/All Media Contains Sexual Content, aOR (95% CI)	Some Media Contains Sexual Content, aOR (95% CI)	Many, Almost All/All Media Contains Sexual Content, aOR (95% CI)	Some Media Contains Sexual Content, aOR (95% CI)	Many, Almost All/All Media Contains Sexual Content, aOR (95% CI)	Some Media Contains Sexual Content, aOR (95% CI)	Many, Almost All/All Media Contains Sexual Content, aOR (95% CI)	
Sexual behavior															
Ever had sex	<b>3.97 (1.99, 7.91)</b>	<b>5.42 (2.73, 10.79)</b>	<b>2.90 (1.77, 4.75)</b>	<b>2.90 (1.77, 4.75)</b>	<b>2.73 (1.57, 4.76)</b>	<b>1.65 (1.07, 2.54)</b>	<b>1.65 (1.07, 2.54)</b>	<b>1.77 (1.10, 2.84)</b>	<b>1.63 (1.10, 2.40)</b>	<b>1.75 (0.82, 3.73)</b>	<b>1.34 (0.92, 1.97)</b>	<b>1.34 (0.92, 1.97)</b>	<b>1.34 (0.92, 1.97)</b>	<b>1.52 (0.82, 2.83)</b>	
Inconsistent condom use <sup>c</sup>	0.57 (0.16, 2.01)	1.01 (0.29, 3.47)	1.52 (0.56, 4.09)	1.52 (0.56, 4.09)	2.44 (0.87, 6.86)	1.09 (0.39, 3.03)	1.09 (0.39, 3.03)	2.07 (0.69, 6.22)	0.67 (0.36, 1.26)	2.29 (0.64, 8.23)	1.12 (0.61, 2.07)	1.12 (0.61, 2.07)	1.12 (0.61, 2.07)	0.91 (0.34, 2.46)	
Number of sexual partners (lifetime) <sup>d</sup>	0.76 (0.13, 4.37)	1.62 (0.30, 8.69)	1.04 (0.39, 2.77)	1.04 (0.39, 2.77)	1.51 (0.44, 5.18)	<b>9.14 (1.74, 48.01)</b>	<b>9.14 (1.74, 48.01)</b>	<b>20.76 (2.74, 157.17)</b>	0.71 (0.25, 2.04)	0.58 (0.04, 9.62)	1.40 (0.71, 2.78)	1.40 (0.71, 2.78)	1.40 (0.71, 2.78)	0.57 (0.05, 6.60)	
Age at first sex <sup>e</sup>	0.88 (0.43, 1.80)	1.03 (0.50, 2.12)	1.36 (0.72, 2.57)	1.36 (0.72, 2.57)	1.43 (0.74, 2.80)	1.01 (0.73, 1.39)	1.01 (0.73, 1.39)	0.77 (0.52, 1.14)	0.84 (0.57, 1.24)	<b>1.75 (1.06, 2.89)</b>	0.89 (0.67, 1.18)	0.89 (0.67, 1.18)	0.89 (0.67, 1.18)	0.79 (0.50, 1.25)	
Sexual violence victimization															
Sexual harassment	1.11 (0.54, 2.30)	1.28 (0.63, 2.63)	1.13 (0.72, 1.77)	1.13 (0.72, 1.77)	1.18 (0.72, 1.95)	1.15 (0.74, 1.78)	1.15 (0.74, 1.78)	1.07 (0.67, 1.69)	1.00 (0.70, 1.42)	0.96 (0.45, 2.03)	1.01 (0.71, 1.44)	1.01 (0.71, 1.44)	1.01 (0.71, 1.44)	1.04 (0.56, 1.92)	
Sexual assault	1.63 (0.78, 3.44)	1.69 (0.78, 3.67)	1.61 (0.85, 3.04)	1.61 (0.85, 3.04)	1.46 (0.67, 3.17)	<b>2.13 (1.14, 4.00)</b>	<b>2.13 (1.14, 4.00)</b>	1.81 (0.88, 3.68)	<b>1.92 (1.16, 3.17)</b>	1.18 (0.42, 3.30)	1.14 (0.67, 1.93)	1.14 (0.67, 1.93)	1.14 (0.67, 1.93)	1.28 (0.54, 3.03)	
Coerced sex	<b>5.61 (2.50, 12.62)</b>	<b>7.49 (2.92, 19.24)</b>	<b>3.65 (1.39, 9.60)</b>	<b>3.65 (1.39, 9.60)</b>	<b>4.07 (1.45, 11.39)</b>	1.90 (0.78, 4.62)	1.90 (0.78, 4.62)	1.99 (0.72, 5.48)	1.53 (0.76, 3.07)	1.96 (0.64, 5.98)	0.87 (0.46, 1.66)	0.87 (0.46, 1.66)	0.87 (0.46, 1.66)	0.86 (0.25, 2.94)	
Attempted or completed rape	1.87 (0.70, 5.00)	<b>2.92 (1.07, 7.98)</b>	<b>2.40 (1.01, 5.70)</b>	<b>2.40 (1.01, 5.70)</b>	1.93 (0.80, 4.63)	1.42 (0.66, 3.04)	1.42 (0.66, 3.04)	<b>2.59 (1.03, 6.53)</b>	<b>1.86 (1.01, 3.42)</b>	1.31 (0.41, 4.20)	1.12 (0.63, 2.00)	1.12 (0.63, 2.00)	1.12 (0.63, 2.00)	1.27 (0.42, 3.87)	

Abbreviations: aOR, adjusted odds ratio; CI, confidence interval. Statistically significant differences ( $p < =0.05$ ) are in bold font.

<sup>a</sup>Data are adjusted for biological sex, race, ethnicity, income, age, sexual/gender minority identity, exposure to violent material, exposure to x-rated material, exposure to violent material, caregiver monitoring, caregiver-child emotional bond, coercive discipline, and survey process indicators (self-rated honesty in completing the survey; whether alone or not when completing the survey).

<sup>b</sup>Each row represents a logistic regression model predicting the odds of the sexual behavior or sexual victimization shown at the left, given one's exposure to sexual media. The reference group for the sexual media categorical variable is "almost no/no exposure to sexual material."

<sup>c</sup>Among the 463 youths (668 observations) who have ever had sex.

relative odds of coercive sex victimization remain persistent, however, even after these other factors are taken into account. It may be that scenarios of “seduction,” such as offering excessive complements, pressuring a partner to have sex, and normalizing the expectation that all couples have sex are modeled in media depictions of sexual relationships, thereby norming what could also be defined as coercion. Alternatively, perhaps coercive sexual relationships are addressed in TV shows in a way that allows for young people to reflect on their personal experience and identify it as unwanted. Certainly more work in this area is needed to better understand this intriguing finding.

### *The Internet Is Not the Primary Environment for Sexual Exposure*

When examined by medium, the only clear pattern noted was a lack of association between Internet-mediated exposures and all of the outcomes examined. Although concerns have been raised about the potential increase in exposures to sexual and violent material online,<sup>45</sup> these data further support the assertion that exposure through other mediums continue to be just as, if not more, common.<sup>25,46</sup> Furthermore, findings suggest that associations with these longer-existing mediums deserve greater scrutiny in terms of their potential influence on or contextualization of youth sexual experiences. This serves as an important reminder for pediatricians, parents, and others who want to help youth reduce their exposure to sexual material. Concern about the Internet should not supersede these more traditional routes of exposure.

### *Limitations*

It is important to note that the measure of sexual content used in this study queries exposure to “kissing, fondling, or having sex” globally in one question. It is possible that these different types of content could be noteworthy to distinguish. Perhaps youth who watch content that depicts kissing are influenced differently than youth who watch content that depicts people having sex, for example. This may be particularly true in combination with how such sexual activity is portrayed. For example, perhaps media that portrays sexual activity as having no consequences is related to delays in processing a situation as threatening in real-life scenarios; or content that shows sexual activity in the context of alcohol consumption as normative or “sexy” could be related to coercive sexual victimization if one were to mirror such behavior. Future research that examines the media content and its specific relationships with cognitive processes, such as

cue recognition of threatening situations, is a critical next step in understanding this relationship.

Any study involving adolescent sexual activity is likely to have limitations because of the difficulty of doing such research,<sup>4</sup> the use of recall measures to indicate media use, and the impossibility of knowing the accuracy of youth self-reports. Nevertheless, data collected online are more likely to be accurate because of the anonymity of the process.

Employing Internet use within the past 6 months as a study eligibility criterion may have resulted in oversampling heavier media users; the broad inclusion likely captured a wide range of users however.

It is possible also that differentiating between violent and nonviolent sexual material is critical in understanding relations particularly with sexual violence victimization, as it was in understanding relations between x-rated material and sexual violence perpetration.<sup>25</sup>

Like other recent studies, response rates were low.<sup>47,48</sup> This is a threat to external validity. While survey researchers are unsure about how to invigorate response rates, it seems fair to say that findings should be replicated using different methodologies to ensure consistency of findings.

Finally, data are analyzed cross-sectionally to maximize the amount of data collected and to promote cell stability for lower base rate outcomes (eg, attempted or completed rape victimization). It may be that youth who are having sex are more likely to seek out sexual material. It may also mean that the more sexual material one sees, the greater the likelihood of one becoming sexually active.

### **Implications and Conclusions**

Exposure to sexual material in the media is related to ever having sex but not necessarily risky sexual behavior among otherwise similar youth. It also appears to be related to sexual violence victimization, particularly coercive sex. Interestingly, longer standing mediums such as TV and movies appear to be associated with greater amounts of sexual media consumption than newer ones, such as the Internet. Moreover, exposure on the Internet does not appear to be related to sexual behavior outcomes at all. Together, these findings suggest that not all sexual material, through all mediums, is necessarily bad or influential. A more nuanced view of how sexual material may or may not be affecting youth behavior is needed.

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### References

1. Strasburger VC, Jordan AB, Donnerstein E. Children, adolescents, and the media: health effects. *Pediatr Clin North Am.* 2012;59:533-587. doi:10.1016/j.pcl.2012.03.025.
2. Strasburger VC; The Council on Communications Media. Sexuality, contraception, and the media. *Pediatrics.* 2010;126:576-582. doi:10.1542/peds.2010-1544.
3. Malamuth NM, Impett EA. Research on sex in the media: what do we know about effects on children and adolescents. In: Singer D, Singer J, eds. *Handbook of Children and the Media.* Thousand Oaks, CA: Sage; 2012:273-302.
4. Strasburger VC. Adolescents, sex, and the media. *Adolesc Med State Art Rev.* 2012;23:15-33.
5. Wright P. Mass media effects on youth sexual behavior: assessing the claim for causality. *Communication Yearbook.* 2011;35:343-386.
6. Strasburger VC, Wilson B, Jordan A. *Children, Adolescents, and the Media.* 3rd ed. Los Angeles, CA: Sage; 2014.
7. Kunkel D, Eyal K, Donnerstein E, Farrar KM, Biely E, Rideout V. Sexual socialization messages on entertainment television: comparing content trends 1997-2002. *Media Psychol.* 2007;9:595-622.
8. Bleakley A, Jamieson PE, Romer D. Trends of sexual and violent content by gender in top-grossing U.S. films, 1950-2006. *J Adolesc Health.* 2012;51:73-79. doi:10.1016/j.jadohealth.2012.02.006.
9. Carter B. This year's hot TV trend is anatomically correct. *The New York Times.* <http://www.nytimes.com/2011/09/22/arts/television/this-years-hot-tv-trend-is-a-word.html?pagewanted=a>. Published September 21, 2011. Accessed September 21, 2013.
10. Centers for Disease Control and Prevention. Youth risk behavior surveillance—United States, 2011. *MMWR Morb Mortal Wkly Rep.* 2012;61(04):1-162. <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6104a1.htm>. Accessed May 28, 2014.
11. Office of Adolescent Health. *Trends in Teen Pregnancy and Childbearing.* Rockville, MD: US Department of Health and Human Services, Office of Adolescent Health. <http://www.hhs.gov/ash/oah/adolescent-health-topics/reproductive-health/teen-pregnancy/trends.html>. Published 2013. Accessed May 28, 2014.
12. Wingood GM, DiClemente RJ, Bernhardt JM, et al. A prospective study of exposure to rap music videos and African American female adolescents' health. *Am J Public Health.* 2003;93:437-439. doi:10.2105/AJPH.93.3.437.
13. Collins RL, Elliott MN, Berry SH, et al. Watching sex on television predicts adolescent initiation of sexual behavior. *Pediatrics.* 2004;114:e280-e289. doi:10.1542/peds.2003-1065-L.
14. Ashby SL, Arcari CM, Edmonson M. Television viewing and risk of sexual initiation by young adolescents. *Arch Pediatr Adolesc Med.* 2006;160:375-380. doi:10.1001/archpedi.160.4.375.
15. Brown JD, L'Engle KL, Pardun CJ, Guo G, Kenneavy K, Jackson C. Sexy media matter: exposure to sexual content in music, movies, television, and magazines predicts black and white adolescents' sexual behavior. *Pediatrics.* 2006;117:1018-1027. doi:10.1542/peds.2005-1406.
16. Martino SC, Collins RL, Elliott MN, Strachman A, Kanouse DE, Berry SH. Exposure to degrading versus nondegrading music lyrics and sexual behavior among youth. *Pediatrics.* 2006;118:e430-e441. doi:10.1542/peds.2006-0131.
17. Chandra A, Martino SC, Collins RL, et al. Does watching sex on television predict teen pregnancy? Findings from a national longitudinal survey of youth. *Pediatrics.* 2008;122:1047-1054. doi:10.1542/peds.2007-3066.
18. Bersamin M, Todd M, Fisher DA, Hill DL, Grube JW, Walker S. Parenting practices and adolescent sexual behavior: a longitudinal study. *J Marriage Fam.* 2008;70:97-112. doi:10.1111/j.1741-3737.2007.00464.x.
19. Bleakley A, Hennessy M, Fishbein M, Jordan A. It works both ways: the relationship between exposure to sexual content in the media and adolescent sexual behavior. *Media Psychol.* 2008;11:443-461. doi:10.1080/15213260802491986.
20. Peter J, Valkenburg PM. Adolescents' exposure to sexually explicit Internet material and sexual preoccupation: a three-wave panel study. *Media Psychol.* 2008;11:207-234. doi:10.1080/15213260801994238.
21. Brown JD, L'Engle KL. X-Rated: sexual attitudes and behaviors associated with U.S. early adolescents' exposure to sexually explicit media. *Commun Res.* 2009;36:129-151. doi:10.1177/0093650208326465
22. Delgado H, Austin S, Rich M. *Exposure to adult-targeted television and movies during childhood increases risk of initiation of early intercourse* [abstract]. Paper presented at: Pediatric Academic Societies meeting; May 4, 2009; Baltimore, MD.
23. Hennessy M, Bleakley A, Fishbein M, Jordan A. Estimating the longitudinal association between adolescent sexual

- behavior and exposure to sexual media content. *J Sex Res*. 2009;46:586-596. doi:10.1080/00224490902898736.
24. Bersamin M, Bourdeau B, Fisher D, Grube J. Television use, sexual behavior, and relationship status at last oral sex and vaginal intercourse. *Sex Cult*. 2010;14:157-168. doi:10.1007/s12119-010-9066-x.
  25. Ybarra ML, Mitchell KJ, Hamburger M, Diener-West M, Leaf PJ. X-rated material and perpetration of sexually aggressive behavior among children and adolescents: is there a link? *Aggress Behav*. 2011 Jan-Feb;37(1):1-18. doi: 10.1002/ab.20367.
  26. Martino S, Collins R, Kanouse D, Elliott M, Berry S. Social cognitive processes mediating the relationship between exposure to television's sexual content and adolescents' sexual behavior. *J Pers Soc Psychol*. 2005;89:914-924. doi:10.1037/0022-3514.89.6.914.
  27. L'Engle KL, Jackson C. Socialization influences on early adolescents' cognitive susceptibility and transition to sexual intercourse. *J Res Adolesc*. 2008;18:353-378. doi:10.1111/j.1532-7795.2008.00563.x.
  28. Primack BA, Douglas EL, Fine MJ, Dalton MA. Exposure to sexual lyrics and sexual experience among urban adolescents. *Am J Prev Med*. 2009;36:317-323. doi:10.1016/j.amepre.2008.11.011.
  29. O'Hara RE, Gibbons FX, Gerrard M, Li Z, Sargent JD. Greater exposure to sexual content in popular movies predicts earlier sexual debut and increased sexual risk taking. *Psychol Sci*. 2012;23:984-993. doi:10.1177/0956797611435529.
  30. Gottfried JA, Vaala SE, Bleakley A, Hennessy M, Jordan A. Does the effect of exposure to TV sex on adolescent sexual behavior vary by genre? *Communic Res*. 2013;40(1). doi:10.1177/0093650211415399.
  31. Ybarra ML, Mitchell KJ. Prevalence rates of male and female sexual violence perpetrators in a national sample of adolescents. *JAMA Pediatr*. 2013;167:1125-1134. doi:10.1001/jamapediatrics.2013.2629.
  32. Romito P, Beltrami L. Watching pornography: gender differences, violence and victimization. An exploratory study in Italy. *Violence Against Women*. 2011;17:1313-1326. doi:10.1177/1077801211424555.
  33. Simons LG, Simons RL, Lei MK, Sutton TE. Exposure to harsh parenting and pornography as explanations for males' sexual coercion and females' sexual victimization. *Violence Vict*. 2012;27:378-395. doi:10.1891/0886-6708.27.3.378.
  34. Ybarra M, Diener-West M, Markow D, Leaf P, Hamburger M, Boxer P. Linkages between Internet and other media violence with seriously violent behavior by youth. *Pediatrics*. 2008;122:929-937. doi:10.1542/peds.2007-3377.
  35. Young AM, Grey M, Boyd CJ. Adolescents' experiences of sexual assault by peers: prevalence and nature of victimization occurring within and outside of school. *J Youth Adolesc*. 2009;38:1072-1083. doi:10.1007/s10964-008-9363-y.
  36. American Association of University Women Educational Foundation. *Hostile Hallways: Bullying, Teasing, and Sexual Harassment in School*. Washington, DC: AAUW Educational Foundation; 2001.
  37. Berrens RP, Bohara AK, Jenkins-Smith H, Silva C, Weimer DL. The advent of Internet surveys for political research: a comparison of telephone and Internet samples. *Polit Anal*. 2003;11:1-22. doi:10.1093/pan/11.1.1.
  38. Schonlau M, Zapert K, Simon LP, et al. A comparison between response from a propensity-weighted Web survey and an identical RDD survey. *Soc Sci Comput Rev*. 2004;22:128-138. doi:10.1177/0894439303256551.
  39. Terhanian G, Siegel JW, Overmeyer C, Bremer J, Taylor H. The record of Internet-based opinion polls in predicting the results of 72 races in the November 2000 US elections. *Int J Market Res*. 2001;43:127-138.
  40. Berrens RP, Bohara AK, Jenkins-Smith HC, Silva CL, Weimer DL. Information and effort in contingent valuation surveys: application to global climate change using national internet samples. *J Environ Econ Manage*. 2004;47:331-363. doi:10.1016/S0095-0696(03)00094-9.
  41. Bureau of Labor Statistics, Bureau of the Census. Current Population Survey. <http://www.census.gov/cps/>. Accessed July 5, 2006.
  42. Petersen J, Hyde J. A meta-analytic review of research on gender differences in sexuality, 1993-2007. *Psychol Bull*. 2010;136:21-38. doi:10.1037/a0017504.
  43. Finkelhor D, Turner H, Ormrod R, Hamby SL. Violence, abuse, and crime exposure in a national sample of children and youth. *Pediatrics*. 2009;124:1411-1423. doi:10.1542/peds.2009-0467.
  44. Centers for Disease Control and Prevention. *Trends in the Prevalence of Sexual Behaviors and HIV Testing National YRBS: 1991-2011*. Atlanta, GA: Centers for Disease Control and Prevention. [http://www.cdc.gov/HealthyYouth/yrbs/pdf/us\\_sexual\\_trend\\_yrbs.pdf](http://www.cdc.gov/HealthyYouth/yrbs/pdf/us_sexual_trend_yrbs.pdf). Published 2012. Accessed May 28, 2014.
  45. Strasburger VC. Media matter—but “old” media may matter more than new media. *Adolesc Med State Art Rev*. In press.
  46. Ybarra ML, Mitchell KJ. Exposure to internet pornography among children and adolescents: A national survey. *Cyberpsychol Behav*. 2005 Oct;8(5):473-86.
  47. Mitchell KJ, Jones LM. *Youth Internet Safety (YISS) Study: Methodology Report*. Durham, NH: Crimes Against Children Research Center, University of New Hampshire; 2011. [http://www.unh.edu/ccrc/pdf/YISS\\_Methods\\_Report\\_final.pdf](http://www.unh.edu/ccrc/pdf/YISS_Methods_Report_final.pdf). Published 2011. Accessed May 28, 2014.
  48. Lenhart A, Purcell K, Smith A, Zickuhr K. *Social Media and Young Adults*. Washington, DC: Pew Internet & American Life Project. <http://www.pewinternet.org/Reports/2010/Social-Media-and-Young-Adults.aspx>. Published 2010. Accessed May 28, 2014.