

Linking Exposure to Outcomes: Early Adolescents' Consumption of Sexual Content in Six Media

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A media-use questionnaire was completed by 3,261 7th and 8th graders and a subsample of 1,074 respondents was interviewed about their sexual attitudes and behaviors. Based on results from the media survey, respondents' top television shows, movies, music, Internet sites, and newspapers were content analyzed for portrayals or references to pubertal development, romantic relationships, body exposure or nudity, sexual innuendo, touching and kissing, and sexual intercourse. Overall, 11% of the media used by respondents contained sexual content. A measure called the Sexual Media Diet (SMD) was developed to assess each individual's exposure to sexual content in the media, based on the combination of media consumption and content. The SMD measure showed a statistically significant association with adolescents' sexual activity and future intentions to be sexually active, with measures of movie and music exposure showing the strongest associations.

Mass communication scholars have long been interested in studying the content of media. *Journalism & Mass Communication Quarterly* alone published 486 content analysis articles over a 25-year period (Kamhawi & Weaver, 2003). Another study that examined the most regularly used methods in mass communication research found that nearly one-third of the articles published in a 20-year period used content analysis as the primary research method (Riffe, Lacy, & Fico, 1998).

Likewise, mass communication researchers have held a particular interest in sexual content of the media. Gunter (2002) traced how sexual imagery has permeated cultural production since its beginning, including Greek dramas and Chaucer's *Canterbury Tales*. More recently, scholars have been interested in documenting the sexual content in media used by young audiences, recognizing that young people may be particularly vulnerable to media influence. Researchers have analyzed the sexual imagery in television (Cope-Farrar & Kunkel, 2002; Greenberg & Busselle, 1994; Heintz-Knowles, 1996; Kunkel et al., 2003; Kunkel et al., 1999; Lowry & Shidler, 1993), movies (Greenberg, Linsangan, & Soderman, 1993; Pardun, 2002), and magazines (Walsh-Childers, 1997; Walsh-Childers, Gotthoffer, & Lepre, 2002) documenting an abundance of sexual content across a variety of media frequently used by teenagers. Studies have shown that media portray a lot of sex, but little sexual responsibility and few consequences of risky sexual encounters (Huston, Wartella, & Donnerstein, 1998; Kunkel et al., 2003). For example, a 2003 Kaiser Family Foundation study (Kunkel et al., 2003) found that 83% of the top 20 Nielsen-rated teen television shows contained some sexual content, with only 12% of the sexual content addressing sexual risks or responsibilities.

These studies have several important shortcomings, however. With some noteworthy exceptions, research has focused primarily on only one medium, most often television, although adolescents use a variety of different media throughout the day (Brown, Steele, & Walsh-Childers, 2002). According to national surveys, adolescents spend on average 7 to 8 hours per day using some kind of media: about 3 hours a day watching television, 1 and one-half hours listening to music, a little less than an hour watching videotapes and movies, about three-fourths of an hour reading, and one-half an hour using a computer. A small but substantial portion (14–22%) of teens' media use involves simultaneous use of two or more media (Roberts, Foehr, & Rideout, 2004). Although it is useful to know about the sexual content of specific media, this single media perspective is insufficient for understanding the range and quantity of sexual messages in the media that a teen is exposed to throughout the day.

Furthermore, although people intuitively assume that exposure to sexual content in the media may impact individuals' sexual health, very few studies have attempted to create an empirical bridge between the media that an individual consumes and the sexual attitudes and behavior that an individual acquires. Those who have done so have focused only on television viewing (Huston et al., 1998). The

few correlational studies of naturally occurring media use have found small relationships between exposure to music videos and attitudes about premarital sex, especially for females (Strouse, Buerkel-Rothfuss, & Long, 1995), between TV viewing and initiation of sexual intercourse (Brown & Newcomer, 1991) and expectations and timing for a variety of sexual activities (Aubrey, Harrison, Kramer, & Yellin, 2003). However, these researchers either assessed television viewing without considering the sexual content contained in the programming (Strouse et al., 1995), or had raters subjectively rate the “sexiness” of the shows (Aubrey et al., 2003; Brown & Newcomer, 1991). A more objective and systematic measure of the amount of sexual content in specific media used by individuals should provide a more reliable approach.

The purpose of this article, then, is to describe a method for conducting a large-scale content analysis study that yields reliable, valid, and comparable assessments of sexual content across a variety of media used by adolescents, and a reliable, valid, and robust measure of an individual’s exposure to sexual content in the media. We present an approach that allows the researcher to assign a specific value of an individual’s exposure to sexual media content that is based on the individual’s media consumption across six different media. This allows us to understand how much sexual content there is in an individual’s daily media diet. We look at a specific demographic group (12- to 14-year-olds) that has been underrepresented in media research. In this way, we begin to better understand exposure to sexual media content at the level of the individual, while at the same time understand the different levels of sexual content across media.

METHOD

Overview of Data Collection Protocol

Students from three public school districts in the Southeastern United States were recruited to participate in the Teen Media study of the impact of the media on adolescents’ sexual health. Using a 34-page mailed survey, extensive media-use pattern data were gathered from Fall 2001 through Spring 2002 from 3,261 seventh and eighth graders (a 65% response rate) after students were recruited in schools and parents mailed back consent forms. The media survey covered ownership, frequency of use, and involvement with a variety of media, including television, movies viewed at home, movies viewed in the theater, music, magazines, Internet, and newspapers. In addition, respondents were provided with an extensive list of vehicles (i.e., *Cribs*, *There’s Something About Mary*, *Teen Magazine*, Dr. Dre) for each medium and instructed to circle all of the vehicles they used regularly. Almost all media questionnaire respondents (95%) were 12- to 14-years-old, 55% were female, 50% were White, and 41% were Black.

A subsample of students who completed the media questionnaire was then recruited to participate in a 45-minute in-home health and sexuality interview using Audio Computer Assisted Self Interview (Audio-CASI). A random sample of 1,074 adolescents (90% response rate), stratified into equally sized Black and White male and female strata, completed the health survey. The mean age of the health sample was 13.7 years (range: 12–15 years). Both the media and health samples were representative of the entire school population from which the samples were drawn. Further details about data collection are provided elsewhere (L'Engle, Pardun, & Brown, 2004).

Based on results from the media survey, content analysis of the sexual imagery in six different media was conducted. A total of 308 television shows, movies, music, Internet sites, magazines, and newspapers that were most frequently attended to by Teen Media respondents were content analyzed for portrayals or references to pubertal development, romantic relationships, body exposure or nudity, sexual innuendo, touching and kissing, and sexual intercourse. Within this sample, approximately 29,000 units out of 272,000 total units (11%) were thus classified as containing sexual content.

Defining and Collecting the Media Sample

A key aim of the media survey was to collect a detailed log of individual adolescents' media use to: (a) define the media sample for content analysis, and (b) be able to later quantify the level of sexual content in each student's media diet.

To develop the lists of media vehicles to be fielded in the media survey, extensive pilot work was conducted with students living in the study area. Published lists of media use among teens (e.g., Nielsen reports, *Billboard* top 100 music artists, Nielsen net ratings, 100 highest grossing movies, etc.) and other vehicles such as movies running in area theaters and new prime-time television shows during Fall 2001 were tested in classrooms and focus groups. The final media survey queried adolescents about their use of 425 different vehicles, including 140 television shows, 111 movies, 72 music artists, 43 magazines, 51 Internet sites, and 8 newspapers. Given that it was not known at the time of the survey mailing which media vehicles would be used for subsequent content analysis, an attempt was made to archive all 425 vehicles.

Once the media survey was fielded, it was necessary to reduce the media sample to a manageable number of vehicles for analysis. It was important to have breadth (covering six media) as well as depth (covering an adequate number of vehicles in each medium) to the content analysis. Thus, we attempted to analyze every vehicle that at least 10% of any one demographic subgroup (Black and White males and females) reported using; for television the cut-off was 20% because of the large number of shows that adolescents reported watching. A total of 308 vehicles were analyzed (72% of all vehicles included in the media survey). This included 71 tele-

vision shows, 94 movies, CDs by 67 music artists, 32 magazines, 34 Internet sites, and 3 newspapers. The final coding sample included one episode of each television show (with embedded commercials), each movie (including trailers), one issue of each magazine (including all advertisements and photographs), all songs on the most recently released CD of each music artist, the home page and all pages occurring from six clicks off the home page for each Internet site, and a composite 2-week sample of each newspaper.

Generally, the sample sizes were within range, or in some cases, larger than previous content analyses of the medium. For example, Signorielli (1997) sampled 15 movies and 25 television shows; Evans, Rutberg, Sather, and Turner (1991) analyzed 30 magazines; and Riffe, Aust, and Lacy (1993) showed that creating one constructed week for analyzing newspapers was adequate.

Table 1 presents the top 10 vehicle selections for each medium for the Teen Media sample. In other analyses (Brown & Pardun, 2004), the top 10 television programs for girls and boys and Whites and Blacks were compared, showing that early adolescents' media selections are heavily influenced by race and gender.

Unit of Analysis

Due to differences in the duration of each vehicle as well as the variation in media formats, it was not appropriate to consider the vehicle as the unit of analysis. A 30-minute television show, for example, is not "equal" to a 3-hour movie in a theater. To make balanced comparisons among the six media, therefore, we defined units of analysis that would be small enough to carry equal weight in each medium. For electronic media (e.g., television and movies), we used a nonbreak sequence or camera cut, which on average lasted 4.4 seconds ($SD = 2.7$, range 1.3–19.0) in television shows, and 6.4 seconds ($SD = 3.8$, range 1.67–20.6) in movies. For print media (e.g., magazines, newspapers, music, and Internet) the paragraph, headlines, and photos were the individual units. Music was treated as print media because lyrics were the focus of analysis, with each verse being counted as one unit. (Music videos were treated as television programs.) The Internet was also treated as print and every link from each home page, up to a maximum of six links, was followed through until about 50 pages of text were identified for each site; each page was then sectioned into four quarters and each quarter page was counted as one unit.

To create a comparable sexual content measure across vehicles of different lengths (such as comparing a movie to a song), the proportion of sexual to nonsexual content of each vehicle was calculated. For print media, the total number of units (paragraphs, photos, and music verses), both sexual and nonsexual, were counted in each vehicle. For electronic media, the length of each camera cut that was coded for sexual content was averaged and extrapolated to nonsexual units, then divided by the total seconds in the vehicle to yield the total number of units in the vehicle. For example, the *Nutty Professor* was 5,739 seconds long in-

TABLE 1
Top 10 Vehicle Selections of 12- to 14-Year-Olds in Six Media (Fall 2001)

<i>Television Shows</i>	<i>Movies</i>		<i>Music Artists</i>	<i>Magazines</i>	<i>Internet Sites</i>	<i>Newspapers</i>
	<i>Viewed at Home</i>	<i>Viewed in Theater</i>				
The Simpsons	Toy Story	Shrek	Nelly	Teen	Yahoo	<i>Durham Herald-Sun</i>
Who Wants to be a Millionaire	Home Alone	Dr. Doolittle 2	Ja Rule	Teen People	AOL	<i>Raleigh News & Observer</i>
Martin	Men in Black	Rush Hour 2	Jay-Z	Ebony	Lyrics	<i>Chapel Hill News</i>
Cribs	The Lion King	The Mummy Returns	Destiny's Child	Sports Illustrated	MTV	
Boy Meets World	Titanic	Spy Kids	DMX	Vibe	Videogames	
Moesha	The Nutty Professor	Jurassic Park 3	Jennifer Lopez	Seventeen	Hotmail	
Parkers	Water Boy	Scary Movie 2	Snoop Dogg	Jet	Playstation	
Kenan and Kel	Forest Gump	The Fast And Furious	Lil' Bow Wow	WWF	Old Navy	
The Hughleys	Big Mama's House	Cats and Dogs	Ludacris	TeenStyle	Nintendo	
106 and Park	Jurassic Park 1	The Princess Diaries	Eve	Cosmo Girl	Napster	

cluding trailers, and the average camera cut for this movie was 6.33 seconds, yielding 907 total units in the movie. Although this approach to content analysis was cumbersome, it was necessary for comparison of the different media.

Coding

Parameters for coding sexual content were based on Kunkel and colleagues' (2003) television studies, then expanded to include romantic and sexual concepts related to early adolescents' experiences with sexuality. The coding instrument was matched to the sexual behavior survey items (ranging from having crushes to dating to "French kissing" to sexual intercourse). Working with sample media yielded further development and revisions to the definitions and parameters used for analyzing the sexual content.

The final coding sheet is shown in Figure 1. The coding sheet contained two main sections: The type of sexual content (Category A) and the characteristics of that content (Category B). Coders first classified the sexual content in Category A, and then selected the relevant characteristic of that content in Category B. For example, the coder might first check "Dating" in Category A if two characters were in some kind of relationship. The coder would then look to Category B to see what kind of relationship was described. If more than one category of sexual content occurred in the unit, the coder classified the most salient content. It should be noted that given the small size of the unit of analysis, there was usually only one salient issue.

Each sexual unit was coded on a single piece of paper and later scanned into a Microsoft Access computer database using Creative ICR's EZData software. Given occasional computer crashes and the large number of units to code, it was important to have a pencil-and-paper back up. However, this also meant that 30,000 sheets of paper were generated that had to be catalogued, scanned, and filed.

Reliability

A dozen graduate students were hired to conduct the content analysis. Training continued for 6 weeks until each coder demonstrated adequate interrater reliability with two or three other coders. Establishing reliability in coding was challenging because of the many coders involved in the project, the different methods for coding print and broadcast media, and the differences in sexual content in each of the six media.

Numerous revisions to the coding instrument were made, and the coding guidebook was updated regularly during the coder training period to provide increased clarification for coders and examples of content that should and should not be coded. For example, we initially focused on sexual content that early adolescents would understand as sexual. Therefore, at first, we did not include sexual innuendo because it seemed too complicated for 12-year-olds. However, as training progressed, it became apparent that we were missing sexual messages. Therefore, we

Teen Media Micro Analysis

Form ID
0 0 0 2 1

Coder ID# **Type**

Macro ID **Coding Sheet #**

Begin Unit **End Unit** **Total Seconds**

A. Sexual Content (check only one)

1. Pubertal issues
2. Crushes and fantasies
3. Dating/relationships/marriage/divorce
4. Nudity (implied or depicted)
5. Sexual innuendo or flirtations
6. Romantic or light touch/full embrace/light peck
7. Passionate kiss/making out/fondling/caressing/oral sex
8. Reference to sexual intercourse
9. Sexual intercourse (implied or depicted)
10. Other

B. Characteristics (check only one)

1. Physical/sexual development
2. Emphasis on sexual body parts or performance
3. Refusal of advance/waiting for sex/abstinence
4. Masturbation
5. Consensual pleasurable activity among MARRIEDs
6. Consensual pleasurable activity among NON-MARRIEDs
7. Divorce/deteriorating relationships
8. Wanted or planned pregnancy
9. Unwanted pregnancy
10. Negative emotional consequences
11. STDs or other physical consequences
12. Using condoms or other contraception/emergency contraception
13. Abortion
14. Unprotected sex
15. Promiscuity
16. Sexual harrassment
17. Rape
18. Child sexual abuse/incest/statutory rape/prostitution
19. Unusual behavior
20. None

C.

Explicit use of statement "I love you"

Yes No

Gender of initiator (choose only one)

Male

Female

Both Male & Female

Unknown, N/A

FIGURE 1 Coding sheet for cross-media content analysis.

decided to code sexual innuendo if it was obvious to the coders. Training continued until all coders were able to identify the sexual content described in the coding guidebook. (For a copy of the coding guidebook, contact the first author.)

To establish interrater reliability for classifying the type of sexual content, we attempted to double code 50% of all vehicles in each medium (see Table 2). Given the different proportions of sexual content within each medium, the double coding of sexual content ranged from 6% for music to 25% for television. (Music had a higher ratio of sexual content per song than did television per show.) To keep to a high standard of reliability, Scott's *pi* (Wimmer & Dominick, 1991) was used in calculating intercoder reliability. After beginning with a randomly selected single-digit number, every 10th unit with sexual content was selected for double-coding in the print media (i.e., magazines, music, newspapers, and Internet sites). This approach proved too difficult for the electronic media because the unit of analysis was so precise that it was impossible for the reliability coder to later locate the original scene that might be only a few seconds in length, due to slippage in the VCR timer. Therefore, with television and movies, reliability coding was conducted simultaneously with primary coding. On average, 40 camera cuts in each television show and movie were randomly double-coded for reliability (see Table 2).

We used calculations for two coders, and systematically changed all pairs of coders throughout the project. Reliability for Category A was higher than for Category B because disagreement about the second coding decision was more likely if the coders disagreed initially. For example, if the coder chose "nudity" from Category A, but the reliability coder chose "sexual innuendo," there was a higher probability that Category B would also be incorrect.

Linking Content Analysis With Individual Data

Each individual respondent was assigned a value that represented his or her exposure to sexual content in each medium and across media. This Sexual Media Diet

TABLE 2
Interrater Reliability Using Scott's *pi*

Medium	Proportion of ...		Sexual Content Reliability (Category A)	Characteristics Reliability (Category B)
	Vehicles Double Coded (%)	Sexual Content Double Coded (%)		
Television	56	25	.85	.84
Movies	47	9	.82	.80
Music	47	6	.76	.64
Magazines	56	8	.73	.63
Internet	42	39	.69	.76
Newspapers	50	10	.89	.64
Overall	50	16	.79	.72

(SMD) score was developed to create a systematic, robust measure that accounted for both the content within the specific medium as well as the level of exposure to that content. Each respondent was given a unique SMD score that weighted the sexual content of each vehicle used by that teen (derived from the content analysis) by the teen's exposure to each medium (as reported in the media survey). Measures were created for each respondent's Sexual TV Diet, Sexual Movie Diet, Sexual Music Diet, Sexual Magazine Diet, and the cross-media measure of SMD. Sexual diets for newspapers and the Internet were not assessed because the content analysis revealed a relative lack of sexual content in these media.

SMD scores were then used as independent variables in regression models predicting adolescents' sexual activity and intentions. Factor analysis of nine sexual activities revealed two categories of behavior, which are consistent with other research that documents orderly progression and greatly increased age expectations from kissing to petting (Brooks, Balka, Abernathy, & Hamburg, 1994; Rosenthal & Smith, 1997). "Light sexual activity" was assessed by summing the lifetime number of light sexual behaviors (i.e., having a crush, dating at least once, being in a private place with a romantic partner, light kissing, and "French" kissing) respondents reported (Cronbach's $\alpha = .72$). "Heavy sexual activity" was similarly assessed and included four sexual behaviors (breast touching, vagina or penis touching, oral sex, and sexual intercourse; Cronbach's $\alpha = .75$). Adolescents reported engaging in an average of 2.5 ($SD = 1.6$) light sexual activities and 0.6 ($SD = 1.1$) heavy sexual activities. "Sexual activity intentions" was a two-item scale (Cronbach's $\alpha = .77$) based on the following questions (Olsen et al., 1992): "How likely is it that you will have sex in the next year?" and "How likely is it that you will have sex while you are in high school?" Responses were measured on a four-point scale from 1 ("very unlikely") to 4 ("very likely"); the mean level of sexual activity intentions was 2.0 ($SD = 1.0$).

RESULTS

Content Categories

The content analysis revealed that across all six media, 11% of the media content was sexual in nature (see Table 3). To derive this proportion, we analyzed a total of 271,744 units, classifying 29,095 units as sexual. Music contained dramatically more sexual content (40%) than any other medium. Next was movies (12% sexual content), followed by television (11%), magazines (8%), Internet sites (6%), and newspapers (1%).

Body exposure and romantic relationships accounted for two-thirds of all the sexual content that was coded (see Table 4). Content that portrayed or referenced specific sexual behaviors (e.g., romantic touching, kissing, sexual intercourse) was

TABLE 3
The Proportion of Sexual Content to Nonsexual Content in Six Media
Used by Adolescents

<i>Medium</i>	<i>Number of Vehicles Analyzed</i>	<i>Number of Total (Sexual and Nonsexual) Units in Medium</i>	<i>Number of Total Sexual Units in Medium</i>	<i>Proportion of Sexual Content in Medium (%)</i>
Television	71	55,428	6,347	11
Movies	94	121,718	14,531	12
Music	67	8,654	3,501	40
Magazines	32	50,266	3,902	8
Newspapers	10	29,610	436	1
Internet	34	6,068	378	6
Overall	308	271,744	29,095	11

Table 4
Distribution of the Percentage of Sexual Content Across Media
Used by Adolescents

<i>Sexual Content</i>	<i>Overall</i>	<i>TV</i>	<i>Movies</i>	<i>Music</i>	<i>Magazines</i>	<i>Internet</i>	<i>Newspapers</i>
Partial/full nudity	41	63	46	5	30	35	12
Relationships	25	15	21	52	31	42	35
Sexual innuendo	12	5	11	19	15	8	36
Touch & kiss	14	14	17	8	9	4	6
Sexual intercourse ¹	7	3	4	15	15	9	10
Pubertal issues	0	0	0	0	1	2	0

¹Includes references to sexual intercourse and overt descriptions of sexual intercourse.

seen in 21% of the coded sexual content. Sexual innuendos defined as gestures or exchanges meant to arouse sexual interest accounted for 12% of the sexual content, although pubertal issues were nearly nonexistent. There were some noteworthy differences between media. For example, 15% of the sexual content in music and magazines focused on sexual intercourse, whereas only 3% of television sexual content and 4% of movie sexual content did. Although slightly more than half (52%) of the sexual content in music was about relationships, 15% of the sexual content on teens' television shows and 21% of their movies' sexual content dealt with relationships.

Analysis of the sexual characteristics (Table 5) revealed that emphasis on sexual body parts (56%) and relationships (33%) occurred most frequently. Notably, more than three fourths (76%) of the relationship content involved couples who were not married. Music outpaced other media with 17% of its sexual content emphasizing divorce or generally deteriorating relationships. Messages that were explicitly healthy (i.e., emphasized pubertal development, abstinence, or condoms)

TABLE 5
Distribution of the Percentage of Specific Characteristics of the Sexual Content
Across Media Used by Adolescents

<i>Sexual Content</i>	<i>Overall</i>	<i>TV</i>	<i>Movies</i>	<i>Music</i>	<i>Magazines</i>	<i>Internet</i>	<i>Newspapers</i>
Sexual body parts	56	68	55	35	57	48	23
<i>Relationships total</i>	33	28	32	50	34	45	37
Consensual activity among nonmarried	25	21	25	31	26	37	29
Divorce/deteriorating relationships	6	4	4	17	6	8	6
Consensual activity among married	3	4	3	1	2	0	2
Sexually healthy messages ¹	6	2	9	6	4	2	4
Sexually unhealthy messages ²	2	1	2	4	2	3	2
Sexual violence ³	2	1	1	5	1	0	25
Other ⁴	0	0	0	0	1	0	1

¹ Includes physical/sexual development, refusal of advance/abstinence, masturbation, STDs, negative emotional consequences, condoms, and contraception.

² Includes unprotected sex, promiscuity, unusual behavior.

³ Includes sexual harassment, rape, and child sexual abuse.

⁴ Includes wanted/planned pregnancy, unwanted pregnancy, abortion.

were seen in only 6% of the total sexual content. This ranged from a low of 2% of television sexual content to a high of 9% of movie sexual content. Given efforts by groups such as the National Campaign to Prevent Teen Pregnancy to encourage television producers to include healthy messages in their programming, it was surprising that television portrayed the smallest proportion of healthy sexual messages. However, it should be noted that content that portrayed unprotected sex or promiscuous sexual behavior occurred in only 2% of the sexual content overall. Sexual violence (i.e., sexual harassment, rape, or child sexual abuse) also accounted for only 2% of the sexual content.

Association Between Exposure to Sexual Content and Sexual Behavior

Linear regression models were run to examine the association between SMD scores and sexual activity and intentions. In these models, sexual activity and intentions were regressed on the SMD scores and age, race, gender, and household income were included as control variables. The SMD scores for television, movies, music, and magazines were entered simultaneously to explore the contribution of each individual medium once all other media were considered.

Analyses showed strong positive associations between exposure to sexual content in the media and sexual activity and intentions (Table 6). Sexual Movie Diet had the strongest relationship with light sexual activity ($\beta = 0.186$, $R^2 = 0.029$, $p < .001$), heavy sexual activity ($\beta = 0.137$, $R^2 = 0.016$, $p < .001$), and intentions to have sexual intercourse ($\beta = 0.194$, $R^2 = 0.032$, $p < .001$), after controlling for demographics and SMDs for television, music, and magazines. Sexual Music Diet had the next strongest relationship with light sexual activity ($\beta = 0.139$, $R^2 = 0.014$, $p < .001$), heavy sexual activity ($\beta = 0.090$, $R^2 = 0.006$, $p < .001$), and intentions to have sexual intercourse ($\beta = 0.147$, $R^2 = 0.015$, $p < .001$). The SMD scores for television and magazines had substantially weaker associations with sexual behavior variables. Furthermore, the amount of variance in sexual activity and intentions that was explained by the cross-media SMD scores was high. As shown in Table 6, the cumulative exposure to sexual content in television, movies, music, and magazines explained 7.5% of the variance in light sexual activity, 5.1% of the variance in heavy sexual activity, and 10.5% of the variance in intentions to have sexual intercourse.

We also examined the association between exposure to different types of sexual media content (dating, nudity, and intercourse) and sexual intentions and behavior. The magnitude of the associations does not vary much across content type. In other words, the amount of sexual content that the individual is exposed to is more important than the specific type of content. For instance, the association between exposure to dating content and sexual intentions was $\beta = .293$ ($p < .001$), nudity and sexual intentions was $\beta = .301$ ($p < .001$) and sexual intercourse and sexual intentions was $\beta = .349$ ($p < .001$) compared to $\beta = .356$ ($p < .001$) for the relationship between exposure to all types of content and sexual intentions.

TABLE 6
Standardized Regression Coefficients (Betas) Resulting from Regressing
Sexual Activity and Intentions on Sexual Media Diet Scores¹

	<i>Light Sexual Activity</i>	<i>Heavy Sexual Activity</i>	<i>Intentions to Have Sex</i>
	Model 1 ²	Model 2 ²	Model 3 ²
Television	0.060	0.060	0.098***
Movies	0.186***	0.137***	0.194***
Music	0.139***	0.090**	0.147***
Magazines	0.041	0.073*	0.086***
R ²	0.075	0.051	0.105
N	889	871	862

¹Respondent's age, race, gender, and household income are controlled in the analyses.

²Sexual Television Diet, Sexual Movie Diet, Sexual Music Diet, and Sexual Magazine Diet were entered simultaneously in each model.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

DISCUSSION

This combined content and survey analysis suggests that adolescents do indeed live in a sexual media world, and that the more sexual media a teen sees, the more likely he or she is to be sexually active and to anticipate future sexual activity. These analyses showed that individuals' sexual media consumption is significantly related to their sexual experience and intentions to be sexually active. Although there was a relatively small amount of sexual content in the media that these early adolescents used, there was a great deal of variability in their exposure to sexual content in the media.

The lack of variety in the sexual content across the six media was remarkable given that nearly 30,000 sexual content units were analyzed. Partial or full nudity accounted for almost half (41%) of all sexual content, and one-quarter centered on relationships, including crushes, dating, marriage, and divorce. As other studies of sexual content in the media have found (Pardun, 2002), almost three-fourths (76%) of the content depicting relationships were with nonmarried people.

Taken together these two patterns of findings (i.e., the significant relationship between SMD and sexual behavior and the uniformity of sexual content across media) lead to the conclusion that rather than the *kind* of sexual content, it is the extent of exposure to sexual content that is most important in understanding the media's role in adolescents' sexual activity and intentions. It is important to note, however, that we defined the *extent of exposure* by both *content* and *consumption* (the SMD), rather than by general consumption alone as Gerbner, Gross, Morgan, and Signorielli (1994) and other cultivation analysis researchers (Shrum, 1999; Signorielli, 1993) have done.

According to this analysis, sexual content does matter, but not whether the content concerns relationships, bodies, or intercourse. Steele's (1999) Media Practice Model, which argues that adolescents make media choices based on the salient issues in their lives (in this case, a budding interest in sex), provides a theoretical underpinning to understanding why exposure to sexual media content is correlated with sexual attitudes and behavior. All kinds of sexual content in the media could be interesting to early adolescents as they begin to negotiate their new sexual worlds. Adolescents look to the media for information about dating and sexual relationships as they are learning to negotiate their own emerging sexuality. Perhaps as they reach maturity they begin to sort out which kinds of sexual content they are interested in (relationships, partial nudity, sexual health messages, etc.), but our data suggest that for early adolescents it is not the specific type of sexual content, but it is the amount of sexual content that each adolescent is exposed to that matters.

Furthermore, the results of our content analysis suggest that sexual imagery in the media used by teens may not be as pervasive as previously indicated. In this study, we compared the amount of sexual imagery to all media content, finding that 11% of all media content used by our sample of 12- to 14-year-olds was sexual.

For example, Kunkel and colleagues (2003) reported that 83% of teen TV shows contained some sexual content. If we had used the vehicle as the unit of analysis to compare our data to the Kunkel et al. study, we would show that almost all (94%) of the television programs we analyzed portrayed some kind of sexual interaction—an even higher percentage than reported in the Kunkel study. So, although it may be technically correct to state that many of the media vehicles used by teens show sexual imagery, the reality is that a smaller proportion of all the media that they are exposed to contains sexual content. Our data make it clear that the method for conceptualizing the unit of analysis has a major impact on content prevalence estimates.

Kunkel's study also breaks down individual shows to the scene level, indicating that 3.2 scenes per hour involve sex. However, not knowing how many total scenes there are in the program or how long each scene lasts, it is difficult to know whether 3.2 represents a regular or rare occurrence. Therefore, we argue that an overall proportion of sexual to nonsexual content seems to present a more comprehensive and precise picture of the amount of sexual content in the media. Using the proportion approach, we are also able to make comparisons across different media, including comparing electronic media to print media.

Future Analyses

Based on results from this comprehensive content analysis, we are able to make several recommendations about future analyses of sexual content in the media. First, time and resources should be allocated to accurately assess the media selections of a sample population. We found substantial differences between the specific media vehicles that our sample reported using and the media programming listed as top choices for teens in lists published by the broadcast industry. At the very least, researchers should understand that adolescent age groups need to be carefully defined. Nielsen and others define demographics for media use typically as 12- to 17-year-olds. One reason our media sample may have been so different is that most of our sample was made up of 12- to 14-year-olds, who may have very different media use patterns than 16- and 17-year-olds.

Second, because the gross amount of exposure to sexual content, and not the content per se, was the important element in adolescents' SMD, a less detailed classification scheme should be sufficient for coding. However, it is crucial to link this sheer amount of sexual content exposure to the individual's media use consumption to obtain a statistically robust and precise assessment of a person's exposure to sexual content in the media. Although it is interesting to depict what the media look like, it may not be necessary if the research question aims to test the connection between exposure and behavior.

Third, although the vast majority of media research has focused, and continues to focus, on television viewing, our data imply that television does not, in fact, have

the most important association with adolescents' sexual behavior. Rather, for early adolescents, analyzing their movie and music preferences should provide a sufficient and robust assessment of exposure to sexual content in the media. Although adding other types of media will improve the cumulative assessment of exposure to sexual content in the media consumed throughout a participant's day, if a research budget is limited, focusing on movies and music alone should provide the needed variability for sophisticated analyses.

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