

Original article

## The mass media are an important context for adolescents' sexual behavior

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### ABSTRACT

**Purpose:** This study compared influences from the mass media (television, music, movies, magazines) on adolescents' sexual intentions and behaviors to other socialization contexts, including family, religion, school, and peers.

**Methods:** A sample of 1011 Black and White adolescents from 14 middle schools in the Southeastern United States completed linked mail surveys about their media use and in-home Audio-CASI interviews about their sexual intentions and behaviors. Analysis of the sexual content in 264 media vehicles used by respondents was also conducted. Exposure to sexual content across media, and perceived support from the media for teen sexual behavior, were the main media influence measures.

**Results:** Media explained 13% of the variance in intentions to initiate sexual intercourse in the near future, and 8–10% of the variance in light and heavy sexual behaviors, which was comparable to other contexts. Media influences also demonstrated significant associations with intentions and behaviors after all other factors were considered. All contextual factors, including media, explained 54% of the variance in sexual intentions and 21–33% of the variance in sexual behaviors.

**Conclusions:** Adolescents who are exposed to more sexual content in the media, and who perceive greater support from the media for teen sexual behavior, report greater intentions to engage in sexual intercourse and more sexual activity. Mass media are an important context for adolescents' sexual socialization, and media influences should be considered in research and interventions with early adolescents to reduce sexual activity. © 2006 Society for Adolescent Medicine. All rights reserved.

**Keywords:** Adolescents; Sexual behavior; Mass media; Sexual socialization

Recent ecological models of adolescents' health risk behavior posit that behavior is produced by the multiple and reciprocal interactions between people and their environments [1,2]. Such ecological perspectives on health behavior draw attention to different domains and kinds of environmental influences that might not otherwise be considered [3,4]. Potential sources of influence on health behaviors are specified at different levels of analysis, including interpersonal processes and networks, physical environments, and cultural norms and public policies [4,5].

Models of adolescent risk behavior that are based on ecological approaches to health and development have emphasized the key settings of adolescents' lives that include families, schools, and neighborhoods [1] along with peers and work situations [2]. Empirical efforts to understand environmental influences on adolescents' sexual behavior have focused on adolescents' connections to families, schools, religion, and peers [6–8].

Mass media are another important dimension of young peoples' lives that may take on special significance during adolescence, and particularly for sexual risk behavior [9–11]. A recent survey found that on average, U.S. adolescents spend six to seven hours per day using media—three hours watching television, two hours listening to music, one hour watching videotapes and movies, and three-

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fourths of an hour reading [12]. The typical U.S. adolescent's household contains three televisions, three tape players, three radios, three CD players, two VCRs, one video game player, and one computer. Even more surprising, two-thirds of adolescents have a television in their bedroom, more than one-third has their own VCR, and almost all have some kind of audio system.

Much of the media that adolescents are exposed to include sexual imagery but rarely portray consequences of risky sexual encounters or healthy sexual messages [13–15]. For example, a recent study 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 [14]. Other studies of teen television shows [16,17], movies [18], music [19], and magazines [20] confirm that there is an abundance of sexual content across a variety of media frequently used by teenagers.

Despite data showing that adolescents are frequent media users and consumers of numerous unhealthy media messages about sexual behavior, mass media influences are rarely included in ecological models and are rarely considered as important contexts for adolescents' sexual socialization.

The premise of this study is that mass media influences on adolescents' sexual behavior should be considered along with other types of environmental influences on adolescents' sexuality. In this study, parent, religion, school, and peer factors are compared with the mass media's influence on early adolescents' sexual intentions and behaviors. Two main questions are investigated: How do the media compare with other contextual influences on adolescents' sexual intentions and behaviors? and Do media influences explain additional variation in adolescents' sexual intentions and behavior beyond the effects from parents, religion, school, and peers?

## Methods

### *Sample and procedures*

The sampling frame consisted of three public school districts in the Southeastern United States that included urban, suburban, and rural populations and approximately equal proportions of black and white male and female students. Fourteen of the 16 eligible middle schools agreed to participate; the two schools from one district that declined to participate had similar race and gender profiles as other schools in the district. In fall 2001, brief informational sessions inviting seventh and eighth graders to participate in a study of teens' media use and health behavior were held at each school. Eighty-one percent of enrolled students ( $n = 5029$ ) provided useable contact information and were mailed a 36-page media questionnaire and parent consent form, and 65% ( $n = 3261$ ) returned the completed media

survey with parental consent. Race and gender characteristics of media survey respondents were similar to all enrolled students.

The media survey included questions about the frequency of using a variety of media, including television, movies viewed at home and in the theater, music, and magazines. Additionally, respondents were provided with an extensive list of vehicles (e.g., *Living Single*, *American Pie*, Janet Jackson, and *Teen People*) for each of the four types of media and instructed to circle all of the vehicles they used regularly. The vehicle lists included specific television shows, movies, music artists, and magazines, and were developed from published lists of media use among teens (e.g., Nielsen reports, Billboard Top 100 Music Artists) that were then pilot tested with students living in the study area.

Based on results from the media survey, content analysis of the sexual imagery in the four different media was conducted. A total of 264 television shows, movies, music, and magazines were content analyzed for portrayals or references to pubertal development, romantic relationships, body exposure or nudity, sexual innuendo, touching and kissing, and sexual intercourse (Scott's *pi* for inter-coder reliability averaged .79). Approximately 28,000 sexual units out of 236,000 total units (12%) were thus classified as sexual content. Further details about the content analysis are provided elsewhere [15].

For the linked health and sexuality survey, 1200 students who completed the media questionnaire were randomly selected from within four gender and race strata so that equal numbers of black and white and male and female students were included. In spring and summer 2002, 1047 (90%) of these students were interviewed in their homes using Audio-Computer Assisted Self Interview (Audio-CASI). A parent and the adolescent signed consent forms guaranteeing confidentiality before the interview began. The Audio-CASI allowed participants to answer questions by touching the screen on a laptop computer while hearing questions through headphones. The Audio-CASI format has been shown to be especially effective when interviewing subjects about sensitive topics such as sexuality and drug use [21].

Protocols and measures used in this study were reviewed and approved by the university's institutional review board. Details about the recruitment protocol and strategies for obtaining the media and health samples are described in more detail in L'Engle et al [22].

### *Measures*

The sample for this study included 1011 adolescents (251 black females, 259 black males, 252 white females, and 249 white males) who completed both the media use questionnaire and the health survey, and who provided complete responses to questions about their use of televi-

Table 1  
Contextual and control variables

Variable (source)	Description of variable	Number of items	Range, Mean (SD)
<b>Parents</b>			
Relationship with mother	Quality of relationship with mother	1	1 = Poor to 5 = Excellent; 4.17 (.99)
Relationship with father	Quality of relationship with father	1	1 = Poor to 5 = Excellent; 3.66 (1.30)
“Hands-on” parenting [23]	Number of activities performed by parents, such as setting a weekend curfew, eating dinner together, restricting CD purchases	8 <sup>a</sup>	1–8; 4.72 (1.65)
Perceived parental view of sex [7]	Perceived parental approval of adolescent having sex at this time in life	1	1 = strongly disapprove to 5 = strongly approve; 1.42 (0.75)
<b>Religion</b>			
Religious attendance	Frequency of attending religious services	1	1 = Never to 5 = 4 or more times/month; 3.65 (1.49)
Religious beliefs [24]	Agreement that serving God is important, that faith sometimes restricts your actions, that religion is the most important thing in life	3 (.79) <sup>b</sup>	1 = Strongly disagree to 5 = strongly agree; 3.46 (.92)
Perceived clergy’s view of sex	Perceived clergy approval of adolescent having sex at this time in life	1	1 = Strongly disapprove to 5 = strongly approve; 1.43 (.75)
<b>School</b>			
School connectedness [7]	(A) Happiness at school, (B) feeling teachers care, and (C) trouble getting along with teachers	3 (.60) <sup>b</sup>	(A, B) 1 = Not at all to 5 = extremely; (C) 1 = every day to 5 = never; 3.87 (.61)
Grades	Grades received on most recent report card	1	1 = Mostly as to 7 = mostly Ds; 2.87 (1.60)
Perceived teacher’s view of sex	Perceived favorite teacher’s approval of adolescent having sex at this time in life	1	1 = Strongly disapprove to 5 = strongly approve; 1.66 (0.87)
<b>Peers</b>			
Relationship with peers [25,26]	(A) Friends accept you, friends understand you, do not wish to have different friends, and (B) happiness with friends	4 (.79) <sup>b</sup>	1 = Strongly disagree to 5 = strongly agree; 4.19 (.68)
Perceived peer sexual behavior [8]	Number of friends who have had sex	1	1 = None to 4 = most; 1.95 (.98)
<b>Media</b>			
Sexual media diet (SMD) [15]	Exposure to sexual content in television, music, movies, and magazines	1	.14 to .94; .53 (.14)
Perceived sexual permission from media	Messages from TV, music, magazines, and movies are that it’s OK for teens to have sex	4 (.90) <sup>b</sup>	1 = Strongly disagree to 5 = strongly agree; 2.30 (1.01)
<b>Demographics</b>			
Age	Age of respondent	1	12.0 to 15.9, 13.70 (.70)
Gender	Gender of respondent	1	0 = Female, 1 = male; .50
Race	Race of respondent	1	0 = White, 1 = black; .50
Socioeconomic status	Received free or reduced price lunch at school	1 <sup>c</sup>	0 = High SES, 1 = low SES; .31

<sup>a</sup> Measure indexes eight indicators of parental exercise of authority [36].

<sup>b</sup> Chronbach alpha was used to assess internal consistency.

<sup>c</sup> Item coded dichotomously as yes/no.

sion, movies, music, and magazines. The mean age of the sample was 13.7 years (range: 12–15 years old). Approximately one-third of the sample (31%) reported receiving free or reduced price breakfast or lunch (an indicator of socioeconomic status), which matched closely the schools’ reported 34% of enrolled students who received subsidized meals.

**Contextual influences.** To the extent possible, the parent, religion, school, and peer factors used as independent variables in this study were identified from standardized, validated instruments used with other samples of adolescents. The two media measures were developed specifically for

this study. Item and scale characteristics for the independent variables are shown in Table 1.

**Media influences.** The sexual media diet (SMD) measure was created to assess an individual adolescent’s cumulative exposure to sexual content across media. The SMD measure accounts for the sexual content of each television show, CD, movie, and magazine used regularly by the adolescent as well as the frequency of exposure to that content. Two derived measures were used to compute the SMD score for each adolescent. First, the proportion of the adolescent’s media use that is sexual was calculated by summing the total number of sexual content units across all vehicles used

regularly by the respondent, and then dividing by the total units (both sexual and nonsexual) in all vehicles attended to by the adolescent. Second, the average frequency of using all four media was calculated by weighting the frequency of use for each individual medium. Television and music use were calculated by averaging responses to questions about use during the school week, on weekends during the school year, and during the summer; magazine use was assessed with one item; and movie viewing was assessed by averaging the frequency of viewing movies in the theater and the frequency of viewing movies at home. Because the average adolescent reported watching television on 30 days in a typical month, listening to music 30 days, reading magazines four days, and watching movies two days, weights of .45 each for television and music, .07 for magazines, and .03 for movies were used to compute the average frequency of using all four media. The final SMD measure was computed by multiplying the proportion of sexual content across all vehicles the adolescent reported using by the average frequency of using all four media. For further details about the Sexual Media Diet measure, see Pardun et al [15].

The measure of perceived sexual permission from the media was developed to assess adolescents' perceptions of sexual norms in the media. Respondents were asked to rate their agreement with the following question: "The messages that I get from TV are that it's OK for people my age to have sex." This question was repeated for music artists, movies, and magazines. Responses, scored from 1 (strongly disagree) to 5 (strongly agree), were summed and averaged to create a scale score (Cronbach alpha = .92).

**Sexual behavior.** To assess dating and sexual behavior, a multi-item question was used. Respondents were asked: "Which of the following things have you ever done with a guy/girl?" To develop the list of possible activities, extensive formative research was conducted with teens from the target population. Eight categories were included for female respondents: (1) "had a crush on a guy," (2) "dated or went out with a guy at least once," (3) "been in a private place without any adults around with just one guy that you're attracted to," (4) "kissed a guy lightly on the lips," (5) "kissed a guy using your tongue," (6) "had my breasts touched by a guy," (7) "had my vagina touched by a guy," and (8) "had oral sex." At a later point in the survey, respondents were asked: "Have you ever had sex?" Male response categories were equivalent but referred to relations with girls.

A factor analysis of these behaviors suggested two categories of sexual activity, which are consistent with other research that documents orderly progression and increased age expectations from kissing to petting [27,28]. *Light sexual activity* included five behaviors: (1) having a crush, (2) dating at least once, (3) being in a private place, (4) light kissing, and (5) "French" kissing (Cronbach alpha = .72). *Heavy sexual activity* included four behaviors: (1) breast

touching, (2) vagina or penis touching, (3) oral sex, and (4) sexual intercourse (Cronbach alpha = .75). Respondents reported engaging in an average of 2.5 (SD = 1.6) light sexual activities and .6 (SD = 1.1) heavy sexual activities.

**Sexual intentions.** Intentions to have sex in the near future were assessed with two items based on Olsen et al [29]: "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, measured from 1 (very unlikely) to 4 (very likely), were summed and averaged to create a scale score (Cronbach alpha = .77). The mean level of sexual intentions was 2.0 (SD = 1.0).

### Data analysis

The impact of each of the five contexts (family, religion, school, peers, and media) on sexual intentions, light sexual activity, and heavy sexual activity was assessed using multiple linear regression. Each analysis controlled for the effects of age, gender, race, and socioeconomic status. In the first set of analyses, each set of contextual factors was entered into a separate model explaining sexual intentions and behavior. In the second set of analyses, all parent, religion, school, and peer factors were simultaneously entered, and then media variables were forced into the model. In the third set of analyses, each individual contextual variable that was significantly associated with sexual intentions and behavior in the previous set of regression models was simultaneously entered into a new regression model.

## Results

Media influences showed a consistent and significant association with early adolescents' sexual intentions and behaviors (Table 2). After controlling for age, gender, race, and socioeconomic status, media influences accounted for 13% of the variance in intentions to have sexual intercourse in the near future ( $F_{2, 946}$  change = 88.1,  $p < .001$ ), 10% of the variance in light sexual activity ( $F_{2, 974}$  change = 55.9,  $p < .001$ ), and 8% of the variance in heavy sexual activity ( $F_{2, 956}$  change = 47.9,  $p < .001$ ). Compared with religion and school factors, the media variables predicted more variance in sexual intentions and activities. Compared with parent factors, media influences predicted more variance in light sexual activity and equivalent variance in heavy sexual activity, but somewhat less variance in sexual intentions. Compared with peer factors, media variables predicted less variance in sexual intentions and heavy sexual activity but somewhat more variance in light sexual activity. Demographic factors predicted more variance in intentions to have sexual intercourse than all other factors.

Once all other contextual factors were considered for their association with adolescents' sexual intentions and behaviors, media influences made a significant contribution beyond the effect from these other contexts. Media variables

Table 2  
Percent variance in sexual intentions and behaviors explained by each context independently, after controlling for demographic variables<sup>a</sup>

Dependent Variables	Independent variables ( $R^2$ )						All IVs (no media) ( $R^2$ )	All IVs (with media) ( $R^2$ )
	Demographics	Parents	Religion	School	Peers	Media		
Intentions to have sex in near future	20.8	17.6	2.0	11.1	19.6	12.5	52.0	54.0
Light sexual activity	4.6	4.2	.1	2.0	6.8	9.8	16.2	20.9
Heavy sexual activity	12.0	8.8	.4	6.0	17.0	8.0	31.7	32.9

<sup>a</sup> Demographic variables that served as controls were age, gender, race, and socioeconomic status.

added 2.0% to the prediction of intentions to have sexual intercourse in the near future ( $F_{2, 693}$  change = 15.2,  $p < .001$ ), 4.7% to the prediction of light sexual activity ( $F_{2, 704}$  change = 21.0,  $p < .001$ ), and 1.2% to the prediction of heavy sexual activity ( $F_{2, 694}$  change = 6.4,  $p < .01$ ). All contextual factors including media predicted 54% of the variance in sexual intentions, 21% of the variance in light sexual activity, and 33% of the variance in heavy sexual activity (Table 2).

Each individual contextual variable was then considered for its association with adolescents' sexual intentions and behaviors, after controlling for key demographic characteristics of respondents. Table 3 presents these results for the full models where all variables were forced to enter the model and for the reduced models where only demographic controls and significant predictors were retained. Across the dependent measures, being male was associated with greater sexual intentions and activity. Increased age was predictive

Table 3  
Contextual variables regressed on sexual intentions and behaviors: standardized  $\beta$

	Intentions to have sex in the near future		Light sexual activity		Heavy sexual activity	
	Full	Reduced	Full	Reduced	Full	Reduced
<b>Controls</b>						
Age	.05	.04	.11**	.08**	.09**	.10**
Male	.22***	.21***	.09*	.07**	.08*	.07*
Black	.018	-.025	-.23**	-.29***	-.04	-.05
Low SES	.01	.00	.00	.01	.02	.01
<b>Parents</b>						
Mother relationship	-.05		-.09**	-.06*	-.05	
Father relationship	-.03		.07		.01	
Hands-on parenting	-.11***	-.13***	-.09**	-.07**	-.12**	-.13***
Parents' view of sex	.21***	.21***	.02		.10*	.09**
<b>Religion</b>						
Religious attendance	-.04		-.01		-.02	
Religious beliefs	-.06		-.02		.03	
Clergy's view of sex	-.06		-.02		-.07	
<b>School</b>						
School connectedness	-.01		-.02		.04	
Grades	-.10**	.09**	.04		.04	
Teacher's view of sex	.08*	.07*	.04		.07	
<b>Peers</b>						
Peer relationships	.04		.01		.02	
Peer sexual behavior	.32***	.31***	.19***	.21***	.35***	.38***
<b>Media</b>						
Sexual media diet	.17***	.18***	.26***	.26***	.09*	.10**
Sexual permission from media	.06*	.08**	.10**	.10***	.10**	.12***
$R^2$	.54	.52	.21	.20	.33	.34
$N^a$	712	900	723	955	713	935

<sup>a</sup> When all variables are included in the full model, sample size declines due to list-wise deletion for missing cases.



of more light and heavy sexual activity, and black adolescents reported less light sexual activity than white adolescents. Contextual variables that remained significantly associated with one or more sexual intentions and behaviors included relationship with mother, hands-on parenting, perceived parental view of sex, grades received in school, perceived teacher's view of sex, and perceived peer sexual behavior. None of the religion variables was significantly associated with sexual intentions or behaviors.

Media variables were significant contributors across the dependent variables, even after considering the effects from other contextual variables (Table 3). In the reduced models, Sexual Media Diet showed a strong relationship with intentions to have sexual intercourse in the near future ( $\beta = .182$ ,  $p < .001$ ), light sexual activity ( $\beta = .262$ ,  $p < .001$ ), and heavy sexual activity ( $\beta = .096$ ,  $p < .01$ ). Perceived sexual permission from the media was also significantly associated with sexual intentions ( $\beta = .077$ ,  $p < .01$ ), light sexual activity ( $\beta = .107$ ,  $p < .001$ ), and heavy sexual activity ( $\beta = .117$ ,  $p < .001$ ). The strength of these associations compares favorably with associations between other contextual variables and sexual intentions and behaviors. For example, standardized coefficients for sexual intentions ranged from  $\beta = .70$  for perceived teacher's view of sex to  $\beta = .310$  for perceived peer sexual norms.

## Discussion

These findings show that adolescents who are exposed to more sexual content in their media diets, and who perceive greater support from the media for teen sexual behavior, report more sexual activity and greater intentions to engage in sexual intercourse in the near future. Even after considering influences from other important socialization sources, such as family, religion, school, and peers, media influences were significantly associated with sexual intentions and behaviors in this diverse sample of early adolescents.

The strong relationship between media and adolescents' sexual expression may be due to the media's role as an important source of sexual socialization for teenagers. Adolescence is a developmental period that is characterized by intense information seeking, especially about adult roles, and given the lack of information about sexuality readily available to teens, adolescents may turn to the media for information about sexual norms [30,31]. Along with peers, parents, and school health classes, media such as television, movies, and magazines have been cited by teens as major sources for sexual information [11,31].

Media may serve as a kind of sexual "super peer" for adolescents seeking information about sexuality because sexual content in the media is ubiquitous and easily accessible, and sexual messages are delivered by familiar and attractive models [32]. It has been suggested that adolescents receive sexual information from mass media and from their peers that is different from what they are learning from

other sexual socialization agents including parents, schools, and religion [33,34]. The sexual content in the media, along with peers, may dilute the positive impact of school-based sexual health programs and more traditional sexual values espoused by adults in the other contexts of adolescents' lives [34].

The majority of sexual content in the media depicts risk-free, recreational sexual behavior between nonmarried people. Media programming rarely depicts negative consequences from sexual behavior, and depictions of condom and contraception use are extremely rare [13–15]. Media users are more likely to adopt behaviors depicted by characters who are perceived as attractive and realistic, and who are not punished but rewarded for their behavior [35], so messages about sexuality in the media may be especially compelling to adolescents.

Several limitations of the data used in this study should be considered. First, data were self-reported by adolescents and, therefore, may be subject to recall bias and/or social desirability. Second, the data presented here are cross-sectional and thus the direction of influence is unclear. It is reasonable to assume a bi-directional process, however, more sexually experienced adolescents may seek out more sexual media content, which then bolsters their interest and may stimulate increased sexual experimentation. The few longitudinal studies in this area have indeed found that increased exposure to sexual content on television predicts earlier initiation of sexual intercourse among adolescents [36,37].

Third, the sample was limited to one geographical region of the United States and only black and white adolescents were included, which may limit the generalizability of results to other regions and populations. For example, this sample of adolescents may be more religious than most adolescents: almost two-thirds of the sample reported attending church two or more times per month. Religious factors were not, however, significantly associated with sexual intentions and behavior, a finding that is consistent with studies of other samples of adolescents [38,39].

Despite these limitations, our findings suggest that media may have equally important associations with adolescents' sexual intentions and behavior as other contextual factors, and that media should be considered along with family, church, school, and peers as an important context for sexual socialization. Future models of adolescents' sexual behavior should include the media as another influential factor in teens' sexual lives, and mass media influences should receive increased attention from practitioners and researchers who aim to reduce adolescents' participation in sexual risk behavior.

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