

A TV in the Bedroom: Implications for Viewing Habits and Risk Behaviors During Early Adolescence

Christine Jackson, Jane D. Brown, and Carol J. Pardun

This study examined associations between bedroom television, media use, and adolescents' health risk behaviors. A sample of 1,017 12- to 14-year-old adolescents completed computer-assisted interviews at baseline and 2-year follow-up. Among White adolescents, having a bedroom television predicted risk-promoting media use practices and significantly greater odds of initiating health risk behaviors—cigarette smoking and sexual intercourse—over 2 years. Although significantly more Black than White adolescents had a bedroom television, bedroom television was unrelated to Black adolescents' media use practices or health risk behaviors. Research is needed to understand ethnic differences in family media use and consequences for adolescent development.

Children and adolescents have televisions in their bedrooms at the discretion of their parents. Parents often hand down an old set when they purchase a new one. Handing down televisions is not only expedient and frugal, it could also bring about perceived benefits: Conflict over program choices could be reduced, the noise and activity associated with children's programs, movies, and video games could be lessened, and parents' discretionary use of family living space could improve as children spend more time in bedrooms. Although reasons for placing televisions in children's bedrooms no doubt vary across households, research indicates that the practice is now commonplace: Seventy-five percent of U.S. households have three or more televisions (Roberts, Foehr, & Rideout, 2005); at least one-third of children younger than age 11 (Christakis, Ebee, Rivara, & Zimmerman, 2004; Dennison, Erb, & Jenkins, 2002), and at least two-thirds of children ages 11 to 14 have a bedroom

Christine Jackson (Ph.D., University of California, Irvine) is a Senior Research Scientist in the Division of Public Health and Environment at RTI International. Her research interests include media effects on health behaviors and family-based approaches to public health intervention.

Jane D. Brown (Ph.D., University of Wisconsin–Madison) is a James L. Knight Professor in the School of Journalism and Mass Communication at the University of North Carolina at Chapel Hill. Her research interests include health communication and media effects on adolescents' health.

Carol J. Pardun (Ph.D., University of Georgia) is Professor and Director of the School of Journalism and Mass Media at the University of South Carolina. Her research interests include advertising and social responsibility as well as the content analysis of media images.

© 2008 Broadcast Education Association *Journal of Broadcasting & Electronic Media* 52(3), 2008, pp. 349–367
DOI: 10.1080/08838150802205421 ISSN: 0883-8151 print/1550-6878 online

television (Roberts et al., 2005). Indeed, Rideout, Vandewater, & Wartella (2003) reported that 26% of children under 2 years old had bedroom televisions.

Contemporary media offer adolescents an increasingly varied array of media choices, yet television still accounts for the majority of adolescents' media use. Roberts et al. (2005) found that the average amount of time young people spend viewing television programs remained constant between 1999 and 2004, at just more than 4 hours per day. Rather than reducing their television use as new media have become available, adolescents have increased their total daily media use (Roberts et al.). Television is also a required vehicle for viewing other primary screen media, including recorded movies and videos. The average amount of time 8- to 18-year-olds spend watching these television-dependent media (1 hr., 11 min. daily) plus their average daily consumption of television programs (3 hr., 4 min.) sum to 4.25 hours daily. Thus, 65% of adolescents' total daily media use is attributable to television (Roberts et al.). The remaining 35% comprises primarily use of video games (another medium that often requires a television-linked game system), and also use of audio and print media.

In this study, there were three goals. First, to describe the media use practices of adolescents with and without a television in their bedrooms; second, to examine prospective associations between bedroom television status and adolescent risk behaviors; and third, to test parental engagement as a moderator of this expected association.

Background

Previous studies indicate that adolescents who have a bedroom television watch more television than peers without one (Christakis et al., 2004; Dennison et al., 2002; Roberts et al., 2005; Wiecha, Sobol, Peterson, & Gortmaker, 2001), are more likely to report isolated television viewing (Larson, 1995; Roberts et al.), and are more likely than peers without one to live in what Roberts et al. call "high TV orientation" homes, where at least one television is on constantly, where a television is usually on during meals, and where there are no family rules about watching television. Research has also shown that parents, in general, provide less oversight of television viewing as children get older (Roberts et al.; Schmitt, 2000) and that parents living in high TV orientation homes provide less oversight than other parents (Roberts et al.).

The first goal of the present study was to contribute to current descriptive knowledge of the media use practices of adolescents with and without bedroom televisions. To achieve this goal, adolescents with and without bedroom televisions were asked to report at baseline on their perceived uses of watching television, personal identification with teenaged actors, parental oversight of their media use, and exposure to programs or recorded movies with mature content. This component of the study was not hypothesis driven, but exploratory; the purpose was to expand what is known about the ways in which adolescents' media use practices covary with bedroom television status.

The second goal of this study was to test whether bedroom television status is related with how young adolescents are socialized. Socialization is the process through which people learn specific normative beliefs, values, and behaviors (Hartup, 1983; Maccoby & Martin, 1983). There is compelling evidence that media exposure plays an important role in socialization (Brown & Cantor, 2000; Roberts & Christenson, 2000; Strasburger & Donnerstein, 1999; Strasburger & Wilson, 2002; Villani, 2001). Roberts and Christianson (2000) state that hundreds of experimental studies

leave little doubt that exposure to media content causally contributes to knowledge, beliefs, attitudes, and behaviors related to the content portrayed. Arguably, most scholars engaged in research on the influence of media on children and adolescents concur that mass media are among the most important socialization agents influencing today's youth. (p. 3)

In a report from a consensus conference on media and youth, Brown and Cantor (2000) noted that there is evidence of profound media influences in many areas of adolescents' health and welfare, including aggression, sexual behavior, substance use, body image, and civic engagement.

Although a number of theories have been used to explain the role of media in socialization, social learning theory and its derivative social cognitive theory (Bandura, 1986; 2002) have been most widely applied. The general premise of social learning theory is that virtually all cognitive, affective, and behavioral learning from direct experience can also be achieved vicariously, through observation of modeled attitudes and behaviors, such as those appearing in television programs. According to social learning theory, neither people nor media are inherently more informative, credible, or persuasive, as people attend to whatever sources of information might be useful. In applying the principles of social learning theory to explain media effects specifically, Bandura (2002) argued that frequent media users are more likely than less frequent users to perceive the "social construction of reality" depicted by media as authentic; that by demonstration or description, media can instruct people about new ways of thinking and behaving, and that media-based models can exemplify, legitimate, and motivate adoption of new behaviors.

Social learning theory emphasizes the importance of contextual variables that influence the extent to which media portrayals will be attended to and incorporated in a viewer's own behavior. Imitation of behavior is more likely when appealing characters are shown engaging in behavior that is perceived as relevant and rewarding. For young people, status conferral (e.g., the young cigarette smoker is depicted as cool and admired by peers) is an important reward cue (Austin, 1995). Depicted behavior that is punished or not rewarded is less likely to be learned and/or imitated. Social learning theory would predict, for example, that if adolescents who engage in smoking or sexual behavior are depicted on television as ostracized by peers or as suffering negative health consequences, young viewers would be less likely to engage in such behavior themselves. Content analyses, however, have established that adolescents on television rarely suffer negative outcomes from risky health behaviors (Kunkel et al., 2007; Wilson et al., 2002). Bandura (1986) argued that the

lack of negative consequence may in itself serve as a type of "reward" that thus encourages imitation.

Social learning theory also predicts, and studies have found, that imitation of modeled behavior is more likely if viewers identify with specific characters and/or perceive their behavior as realistic (Wilson et al., 1998). Recent research on the effects of violent video games, for example, has found that first-person shooter games in which the player "is" the shooter, increase aggression through identification with the gaming character compared to a third-person perspective (Anderson & Bushman, 2002). Ward (2002) found that older adolescent viewers of sex on shows featuring adolescents were more likely to endorse the depicted sexual behavior if they perceived it as realistic.

Consistent with social learning theory, a recent study has shown a strong association between having a bedroom television and initiating smoking during early adolescence (Jackson, Brown, & L'Engle, 2007). Specifically, 12- to 14-year-old adolescents with bedroom televisions were, after 2 years, twice as likely to initiate cigarette smoking as peers without bedroom televisions (Jackson et al., 2007). Building on this study, the present study also tested prospectively whether having a bedroom television predicted greater likelihood of initiating sexual intercourse. Specifically, among young adolescents who were virgins at baseline, this study tested whether those with a bedroom television were more likely than peers without one to report having had sexual intercourse after 2 years. Such effects might be expected because the movies and programs available on television include frequent positive portrayals of sexual behaviors (Kunkel et al., 2003; Pardun, L'Engle, & Brown, 2005). Similarly, cigarette smoking is portrayed frequently and positively by actors in television programs and in movies popular with adolescent viewers (Byrd-Bredbenner, Finckenor, & Grasso, 2003; Hazan & Glantz, 1995; Wakefield, Flay, Nichter, & Giovino, 2003).

It is also important to know whether parents can offset the expected positive association between having a television in the bedroom and adolescents' likelihood of initiating tobacco use or sexual intercourse. The third goal of this study was to test whether perceived parental engagement with adolescents moderates the expected positive association between having a bedroom television and health risk behaviors (initiation of smoking; initiation of sexual intercourse) at follow-up. Sometimes referred to as "hands-on parenting," parental engagement with children has been identified as protective against adolescent risk behaviors (Resnick et al., 1997). In the present study, it was expected that having both a bedroom television and low parental engagement would be associated with the greatest likelihood of each risk behavior at follow-up. Such a relationship might be expected because adolescents with bedroom televisions watch relatively more television and have more opportunity to watch mature programs and R-rated movies, which have the highest concentration of smoking and sexual content (Dalton et al., 2002; Kunkel et al., 2003). Parental engagement with the adolescent, even if a bedroom television is present, could reduce exposure to risk-promoting content and provide more opportunity for sharing parental values about sexual behavior and cigarette smoking.

Past research indicates that ethnic groups differ in amount of exposure to television and other media and in the meanings ascribed to media content (Albarran & Umphrey, 1993; Bickham et al., 2003; Brown & Pardun, 2004; Roberts et al., 2005); there are also ethnic differences in adolescents' involvement in tobacco use and sexual activity (Centers for Disease Control, 2004). Thus, past research indicates that ethnicity covaries with both the independent and dependent variables of interest in the present study, and therefore functions as a confounder of the associations of interest. To control for this confounding effect, the present study examined each research question separately by race.

Method

The present study used a longitudinal design in which 1,017 adolescents were interviewed at baseline and again 2 years later, when the prevalence of health risk behaviors was expected to increase to a level detectable within the study sample.

Study Site, Sample, and Timeline

The study sample was obtained from a larger investigation, which drew an initial sample of 3,261 adolescents from 14 of 16 public middle schools belonging to three school districts in the southeastern United States. Participating schools were urban, suburban, and rural; they enrolled approximately equal proportions of Black and White male and female students. In Fall 2001, all 7th- and 8th-grade students from these schools ($n = 6,234$; mean age = 13.6 years) were eligible to attend a brief informational session after which they were invited to seek parental permission to participate in a study of adolescents' media use and health. Of 6,234 enrolled students, 5,029 (81%) attended an informational session and 3,261 (65% of those who attended a session; 52% of all enrolled students) returned a signed parental consent form and a completed media use survey. The survey respondents had the same mean age at baseline as the eligible sample (13.6 years); however, White females were slightly overrepresented among respondents (26% of the study sample vs. 22% of all students) and Black males were slightly underrepresented (18% vs. 22%, respectively).

The sample for the present study was obtained in Spring 2002, when 1,200 of the 3,261 adolescents who had completed a media use survey were selected randomly from four demographic subgroups defined by gender and race (Black/White) for a second phase that included a more detailed baseline health assessment and a 2-year follow-up assessment. Both of these assessments were conducted in adolescents' homes using Audio-CASI (Computer-Assisted Self-Interview) methods. The Audio-CASI allowed adolescents to answer questions on a laptop computer while hearing them through earphones and touching the computer screen to select responses. At baseline, and again at follow-up, a parent or guardian provided written consent for

the adolescent's participation, and the adolescent provided signed assent. Adolescents received \$20 for participating in each interview.

Of the 1,200 randomly selected adolescents, 1,074 (90%) completed a baseline Audio-CASI interview. In Spring 2004, 1,017 adolescents (85% of the random sample; 95% of those who completed a baseline interview) completed a follow-up interview. Of the 57 respondents lost to follow-up, 6 were adolescent refusals, 7 were parent refusals, and the remaining 44 had moved out of the study area. There were no age, race, or gender differences between the 1,017 adolescents who completed a follow-up survey and the 57 adolescents who did not. Of the 1,017 respondents with longitudinal data, 282 (28%) reported initiation of smoking at baseline, leaving 735 adolescents who had never tried smoking for the analysis of smoking initiation. And, of the 1,017 in the panel, 129 (13%) reported having had sexual intercourse on the baseline interview, leaving 888 adolescents who had never had intercourse for the analysis of sexual intercourse.

These methods were reviewed and approved by the University's Institutional Review Board.

Variables

Bedroom Television. The media use survey asked adolescents which media devices are "in your own bedroom or in an area that you consider your very own." Dichotomous 0/1 codes indicated the presence of any working television. Among adolescents who had a television in their bedroom, most (84%) also had cable/satellite TV and/or a VCR/DVD player. Specifically, 63.8% had cable/satellite channel access, 76.9% had a VCR/DVD player, and 47% had both cable/satellite channel access and a VCR/DVD player.

Frequency of Viewing Television Programs and Movies at Home. The media survey asked adolescents how often they watched television during the school week, on weekend days, and during the summer; each item was coded using a 6-point scale ranging from 1 (*never*) to 6 (*almost all the time*). The mean response to these three measures was used to indicate adolescents' relative daily exposure to television. The media survey also measured how often adolescents watched movies at home using VCR, DVD, or pay-per-view. A 5-level categorical response scale ranged from 1 (*never*) to 5 (*once a week or more*).

Uses of Television. The survey measured adolescents' uses of television (sample items: "I like to use the TV so I have something to do"; "I like to use the TV to see what other people my age are doing"). Responses to these items were coded using a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicating greater perceived utility of television.

Identification With Teenaged Actors on Television and in Movies. Identification was conceptualized using Kelman's (1958) definition, whereby identification occurs when observers derive satisfying self-definition from perceptions of similarity to and attractiveness of observed agents. Sample items were: "I see teenagers on TV who are a lot like me and my friends" and "I want to be like the teens I see in movies." Responses to these items were coded using a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicating greater identification with teenaged actors.

Perceived Parental Oversight of Television and Movie Viewing. Adolescents' perceptions of parental monitoring and parental rules about media use are indicators of a specific form of parental mediation of adolescent media use. Within the typology of parental mediation developed by Nathanson (2001), this study measured indicators of so called "restrictive mediation," indicated by "My parents know what the TV programs I watch are about," "My parents have specific rules about the kinds of movies I can see," and other similar items. Responses to these items were coded using a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicating greater perceived parental oversight of adolescents' television and movie use.

Exposure to Television Programs and Movies With Mature Content. The media survey recorded by title which television programs adolescents "watched regularly." Based on results from all media survey respondents ($n = 3,261$), television programs watched by at least 10% of any of the four gender-by-race subgroups in the sample were content analyzed. This content analysis, described in substantial detail elsewhere (Brown et al., 2006), indicated the proportion of each program that depicted sexual images or messages. Television programs with at least 25% sexual content were used to indicate by title the television programs with mature content to which adolescents were exposed. The media survey also recorded by title which movies adolescents had seen at least once at home using a VCR, DVD, or pay-per-view. Exposure to movies with mature content was indicated by which specific R-rated movies adolescents had seen.

Perceived Parental Engagement. The interview measured adolescents' perceptions of how aware their parents were of how they were doing at school; whether there were periods of an hour or longer after school or on weekends during which parents did not know where they were; and, during a typical week, how many times they and their parents ate dinner together. Responses were summed and a median split was used to indicate relative level of parental engagement.

Initiation of Smoking. Using Audio-CASI and a standard, reliable indicator of initiation (Brenner, Collins, Kann, Warren, & Williams, 1995; Henriksen & Jackson, 1999), adolescents reported at baseline and again at follow-up whether they had ever smoked a cigarette, even one puff. Of the 1,017 adolescents in the sample,

282 (28%) had initiated smoking at baseline, 221 (22%) had initiated 2 years later, and 514 (50%) remained abstinent through follow-up.

Initiation of Sexual Intercourse. Also on Audio-CASI, respondents were asked: "Have you ever had sex?" Respondents had the option of using a link on the laptop computer to read a detailed definition of heterosexual intercourse. Those who reported having engaged in sexual intercourse were assigned a value of 1, otherwise 0. Of the 1,017 adolescents in the sample, 129 (13%) had ever had sexual intercourse at baseline, 198 (19%) had become sexually active after 2 years, and 690 (68%) were virgins at follow-up.

Control Variables. Adolescents reported their gender, school grade (7th or 8th), and race/ethnicity (African American or White); they also reported whether their friends had ever smoked or ever had sexual intercourse. Gender, grade, and friends' health risk behaviors were used as covariates in the regression models; ethnicity was controlled by conducting analyses within each group.

Analyses

T tests were used to measure the cross-sectional associations between bedroom television status and media use practices (Table 1). Chi-square tests were used to measure the cross-sectional associations between having a bedroom television and exposure to television programs or movies with mature content (Table 2). Logistic regression analyses were used to measure the association between bedroom television status and initiating cigarette smoking or sexual intercourse at follow-up, after adjusting for adolescent gender and grade and peer modeling (Table 3). Logistic regression analyses were also used to test whether parental engagement moderated the expected association between having a bedroom television and likelihood of reporting a health risk behavior at follow-up (Table 4). For all regression analyses, predictor variables were coded so that the referent was the purported lower risk category; the odds ratios therefore indicate the relative odds of smoking (or sexual intercourse) associated with the higher risk category of each predictor variable. All predictors and covariates were entered simultaneously in the regression analyses (Tables 3 and 4).

Results

Nationally, 75% of households with adolescents have three or more televisions (Roberts et al., 2005). In the present sample, 66% of White and 84% of Black households had three or more televisions; 46% of White and 64% of Black adolescents had a bedroom television.

Goal 1: Describe the media use practices of adolescents with and without a television in the bedroom.

Having a bedroom television was associated with significant differences in multiple television and movie use practices among White adolescents (Table 1). Relative to peers without a bedroom television, adolescents who had a television reported significantly more total exposure to television programs and home movies and were significantly more likely to use television to alleviate boredom or as a source of information on adolescent trends and norms; they also were significantly more likely to perceive similarity between themselves and adolescents on television, and to perceive that television depicts the real-life issues and concerns of adolescents. In addition, White adolescents who had a bedroom television reported significantly less parental oversight of television and movie usage. Parents were perceived as significantly less likely to know what the programs or movies that adolescents

Table 1
Mean Values on Media Use Practices of Young Adolescents
With and Without a Bedroom Television

	White Adolescents (<i>n</i> = 491)			Black Adolescents (<i>n</i> = 526)		
	Bedroom No	Television Yes	<i>t</i>	Bedroom No	Television Yes	<i>t</i>
	<i>n</i> = 264	<i>n</i> = 227		<i>n</i> = 138	<i>n</i> = 388	
Frequency of Exposure						
Television use daily	4.16	4.67	6.03***	4.93	4.99	.75
Home movies/videos monthly	3.86	4.25	4.21***	3.95	4.11	.22
Perceived Uses of Television						
To have something to do	3.60	3.78	2.05*	3.85	3.77	-.76
To get away from family	2.60	2.78	1.57	2.61	2.65	.26
To see what other teens do	2.29	2.53	2.33*	2.78	2.71	-.59
Identification With Teens on Television						
TV teens are like me, friends	2.85	3.11	2.40**	3.37	3.35	-.19
TV shows real-life teen issues	2.59	2.80	2.05*	3.02	3.04	.15
I want to be like teens on TV	2.44	2.63	1.72	2.57	2.49	-.70
Identification With Teens in Movies						
Movie teens are like me, friends	3.32	3.43	1.21	3.38	3.42	.35
Movies shows real-life teen issues	2.79	2.84	0.55	3.08	2.99	-.80
I want to be like teens in movies	2.69	2.73	0.30	2.55	2.45	-.78
Perceived Parental Oversight of Television						
Knows what shows are about	3.55	3.37	-2.62**	3.34	3.43	1.07
Has rule about kind of shows	2.61	2.37	-3.55***	2.47	2.33	-1.72
Has rule about time spent	3.29	2.71	-5.20***	2.85	2.66	-1.42
Perceived Parental Oversight of Movies						
Knows what movies are about	3.67	3.38	-4.38***	3.47	3.45	-0.25
Has rule about kind of movies	3.98	3.76	-3.04***	3.79	3.79	0.01

p* < .05. *p* < .01. ****p* < .001.

viewed were about and significantly less likely to have rules about the kinds of programs or movies that adolescents could watch.

Although a much greater proportion of Black than White adolescents had bedroom televisions, having a bedroom television was unrelated to Black adolescents' media use practices (Table 1). Black adolescents were about as likely as White adolescents to use television to have something to do, to agree that teens in movies are like themselves, and to report that parents know what the movies they see are about, but none of these media use practices was influenced by whether they had a bedroom television or not.

Having a bedroom television was also associated with level of exposure to programs and movies intended for a mature audience (Table 2). Here, differences in the results for White and Black adolescents were striking. Relative to peers with no bedroom television, White adolescents who had a television in their bedrooms were significantly more likely to watch a majority of the mature content television programs and R-rated movies measured in this study. With few exceptions, Black adolescents with no bedroom television were as likely to watch mature content television or R-rated movies as peers with one. Indeed, Black adolescents, in general, had greater exposure to mature content television programs and R-rated movies than White adolescents. Overall, the viewing patterns indicated in Table 2 show that White adolescents with a bedroom television, and all Black adolescents, had high exposure to mature content television programs and R-rated movies relative to White adolescents without a bedroom television.

Goal 2: Examine prospective associations between bedroom television and adolescent health risk behaviors.

Prospective analyses examining the relationships between bedroom television and health risk behaviors (Table 3) showed that White adolescents who had a bedroom television at baseline were, after 2 years, nearly 3.5 times more likely to have ever tried smoking (adjusted OR = 3.48; $p < .001$), and were nearly 2 times more likely to have ever had sexual intercourse (adjusted OR = 1.95; $p < .05$) compared with peers who had no bedroom television. Bedroom television status was not associated with initiation of smoking or sexual activity among Black adolescents, however. Only friends' risk behavior status was a significant predictor of each risk behavior among Black adolescents.

Goal 3: Test parental engagement as a moderator of the association between bedroom television status and adolescents' health risk behaviors.

Because only White adolescents' smoking and sexual risk behaviors were related to bedroom television status, the test of parental engagement as a moderator of this relationship was conducted only for White adolescents. Among adolescents with relatively high parental engagement, 29.3% of those with and 13.9% of those without a bedroom television had initiated smoking. Among adolescents with relatively low parental engagement, 53.8% of those with and 21.2% of those without a bedroom television had smoked. These proportions show that smoking was systematically higher when parental engagement was low and when a bedroom television was present.

Table 2
Percent of Adolescents Who Had Watched Television Programs and Movies
With Mature Content at Home, by Bedroom Television Status

	White Adolescents (n = 491)			Black Adolescents (n = 526)		
	Bedroom No n = 264	Television Yes n = 227	χ^2	Bedroom No n = 138	Television Yes n = 388	χ^2
Mature Content Television Programs						
<i>Baywatch</i>	12.6%	21.2%	6.45**	23.9%	26.8%	.44
<i>Cribs</i>	24.9%	42.0%	16.11***	52.2%	65.2%	7.32**
<i>Dexter</i>	21.1%	25.7%	1.43	34.1%	34.5%	.01
<i>For Your Love</i>	2.3%	5.8%	3.85*	36.2%	40.2%	.67
<i>Friends</i>	42.9%	54.4%	6.43**	26.1%	19.3%	-2.72
<i>Girlfriends</i>	3.8%	8.8%	5.27*	50.0%	56.2%	1.57
<i>Jackass</i>	25.7%	48.2%	26.71***	34.8%	38.9%	.74
<i>King of the Hill</i>	26.8%	32.3%	1.75	35.5%	33.2%	-.23
<i>The Parent' Hood</i>	8.3%	19.4%	12.80***	65.2%	69.3%	.79
<i>The Parkers</i>	4.2%	10.6%	7.56**	76.1%	84.3%	4.65*
<i>South Park</i>	18.2%	37.4%	22.93***	37.0%	47.7%	4.73*
R-rated Movies Viewed at Home						
<i>American Pie I</i>	17.8%	41.0%	32.15***	35.8%	36.1%	.01
<i>The Blair Witch Project</i>	21.21%	44.1%	29.37***	35.0%	39.7%	.92
<i>Hannibal</i>	10.6%	28.2%	24.79***	23.4%	25.8%	.31
<i>Hollow Man</i>	17.0%	36.1%	23.16***	42.3%	47.7%	1.16
<i>I Know What You Did Last Summer</i>	26.1%	59.0%	54.45***	75.9%	74.2%	-.15
<i>Lethal Weapon</i>	17.8%	32.6%	14.38***	34.3%	45.4%	5.06*
<i>Scary Movie</i>	26.9%	55.1%	40.30***	67.2%	70.6%	.57
<i>Scream</i>	22.7%	62.1%	78.31***	65.0%	72.7%	2.51
<i>Silence of the Lambs</i>	9.1%	29.4%	25.88***	14.6%	17.8%	.73
<i>South Park (movie)</i>	15.9%	34.8%	23.45***	36.5%	40.7%	.75
<i>The Matrix</i>	49.2%	55.5%	1.91	62.8%	59.8%	-.37
<i>There's Something About Mary</i>	25.0%	44.9%	21.54***	37.2%	37.9%	.02

* $p < .05$. ** $p < .01$. *** $p < .001$.

The test for interaction confirmed these two main effects; parental engagement was not a significant moderator of the observed association between bedroom television status and likelihood of smoking (Table 4). For White adolescents, having a bedroom television significantly increased the odds of smoking regardless of the level of parental engagement. This does not mean that parental engagement was unrelated to adolescent smoking. The descriptive data show that adolescents with high parental engagement were much less likely to initiate smoking than adolescents with low parental engagement (16.7% vs. 41.8%, respectively). Rather, the lack of

Table 3
Adjusted Odds of Adolescent Health Risk Behaviors at Follow-up Regressed
on Bedroom Television Status at Baseline

	White Adolescents		Black Adolescents	
	OR	95% CI	OR	95% CI
Predictors	Initiation of Cigarette Smoking ¹			
Gender (1 = male)	1.10	.67–1.79	1.21	.76–1.93
Grade (1 = 8 th)	1.88*	1.15–3.07	1.45	.93–2.40
Friends smoke	2.34	.94–5.78	2.89**	1.43–5.86
Bedroom TV (1 = yes)	3.48***	2.13–5.68	0.84	.50–1.39
Predictors	Initiation of Sexual Intercourse ²			
Gender (1 = male)	2.38**	1.34–4.21	1.27	.81–1.97
Grade (1 = 8 th)	1.68	.95–2.99	1.34	.86–2.10
Friends sexually active	2.61**	1.47–4.62	2.92***	1.66–5.11
Bedroom TV (1 = yes)	1.95*	1.10–3.42	0.93	.56–1.51

¹Analyses included the 382 White and 353 Black adolescents who had never tried smoking at baseline. ²Analyses included the 471 White and 417 Black adolescents who had never had sexual intercourse at baseline. * $p < .05$. ** $p < .01$. *** $p < .001$.

an interaction effect means that parental engagement did not moderate or “buffer” the association between bedroom television status and smoking status among White adolescents.

Turning to sexual behavior, this study found that, among White adolescents with relatively high parental engagement, 9.6% of those with and 9.6% of those without a bedroom television had had sexual intercourse at follow-up. Among adolescents with relatively low parental engagement, 28.3% of those with and 10.1% of those without a bedroom television had had sexual intercourse. The regression analysis showed that parental engagement was a significant moderator of the association between having a bedroom television and initiation of sexual behavior (adjusted OR = 3.73; $p < .01$; Table 4). Indeed, the previously observed main effect of bedroom television status on sexual behavior (Table 3) was fully attenuated when the moderating effect of parental engagement was taken into account (Table 4). White adolescents who had both relatively low parental engagement and a bedroom television were nearly 3 times more likely to become sexually active than adolescents with no bedroom television. White adolescents who had a bedroom television but high parental engagement were no more likely to report sexual behavior at follow-up than adolescents with no bedroom television. These results indicate that for White adolescents, parental engagement can buffer the increased likelihood of sexual risk associated with having a bedroom television.

Table 4
Parental Engagement as a Moderator of the Observed Association
Between Bedroom Television and Health Risk Outcomes
(White Adolescents Only)

	OR	95% CI
Model Predicting Initiation of Smoking ¹		
Gender (1 = male)	1.29	.78–2.15
Grade (1 = 8 th)	1.89**	1.14–3.11
Friends smoke	2.08	.81–5.34
Bedroom television (1 = yes)	2.35**	1.15–4.80
Parental engagement (1 = below median)	1.66	.80–3.45
Bedroom television X parental engagement	1.82	.67–4.97
Model Predicting Initiation of Sexual Intercourse ²		
Gender (1 = male)	2.76**	1.51–5.04
Grade (1 = 8 th)	1.84*	1.02–3.34
Friends sexually active	2.25**	1.23–4.11
Bedroom television (1 = yes)	0.87	.35–2.18
Parental engagement (1 = below median)	1.08	.44–2.63
Bedroom television X parental engagement	3.73**	1.11–12.51

¹Analyses included the 382 White adolescents who had never tried smoking at baseline.

²Analyses included the 471 White adolescents who had never had sexual intercourse at baseline. * $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

Currently, at least two-thirds of adolescents in the United States have a television in their bedroom. Few studies have examined whether adolescents' bedroom televisions affect their media use practices or health risk behaviors. The present study of 1,017 young adolescents found that, especially for White adolescents, having a television in their bedroom was associated with an array of potentially harmful media use practices, including less parental oversight of adolescent media use, regular viewing of mature content television programs, and greater likelihood of having seen R-rated movies at home. Having a bedroom television was also associated with significantly greater odds of initiating health risk behaviors—cigarette smoking and sexual intercourse—over 2 years. This study also found that, among White adolescents, the observed association between having a bedroom television and sexual intercourse was offset when parents were relatively engaged with their adolescent. On the other hand, White adolescents who had a bedroom television and perceived low parental engagement were 3 times more likely to become sexually active when compared with peers who perceived high parental engagement and did not have a bedroom television. These are quite remarkable

findings, suggesting that access to television and interaction with parents does matter, even for adolescents. For White adolescents, keeping the television out of the bedroom may be an important way of reducing unhealthy media use practices and reducing the likelihood of health risk behaviors. Continuing to be involved in the adolescent's life by paying attention to what's going on at school, monitoring what happens after school, and eating meals together, also appear to be important parenting practices (Resnick et al., 1997).

A Television in the Bedroom

Having a television in the bedroom clearly increases the amount of time adolescents—particularly White adolescents—spend watching television (Christakis et al., 2004; Roberts et al., 2005). Previous studies have found this is true both in Europe and the United States (Livingstone, 2002). It is possible that private access to television leads to such excessive levels of exposure to unhealthy content that the adolescent enters a dangerous zone of propensity to engage in risky behavior. This supposition is consistent with social learning theory, which posits that it is under the condition of high media exposure that the social construction of reality depicted by media is most likely to be perceived as authentic (Bandura, 2002).

Having a television in the bedroom could also be a proxy indicator of other variables that could increase the likelihood of health risk behaviors. Adolescents with bedroom televisions tend to live in high TV orientation homes and have multiple media in their bedrooms (Roberts et al., 2005). Bovill and Livingstone (2001) point out that having a media-rich bedroom significantly increases the time adolescents spend alone. Larson (1995) examined adolescents' time use and found that adolescents were least happy when viewing television in their rooms alone. Isolated viewing could exacerbate adolescents' feelings of loneliness and alienation, which could in turn increase their propensity to initiate risk behaviors. Isolated viewing could also inhibit adolescents' exposure to the normative framing that occurs as family members discuss or otherwise react to media portrayals of risk behaviors. Conversely, communal viewing that prompts parental communication specific to media content ("active mediation" by parents; Nathanson, 2001) could boost young people's exposure to family norms that can be protective against health risk behaviors.

Parental Engagement as a Moderator of Media Effects

Among White adolescents, having a bedroom television was a significant predictor of both sexual intercourse and smoking initiation. When these associations were examined by level of parental engagement, having a bedroom television predicted sexual risk only when parental engagement was low (i.e., parental engagement was a significant moderator of the association between having a bedroom television at baseline and sexual behavior at follow-up.) Having a bedroom television was

also associated with greater likelihood of smoking among adolescents with high or low parental engagement (i.e., parental engagement did not moderate the association between having a bedroom television at baseline and smoking behavior at follow-up).

A close look at the proportions of adolescents who reported each risk behavior suggests why this different pattern of results was observed. In three of the four groups defined by parental engagement and bedroom television status, (i.e., subgroups with high engagement/no TV, high engagement/TV, or low engagement/no TV) about 10% of adolescents were sexually active at follow-up. Only one subgroup (i.e., adolescents with low parental engagement and a bedroom television) reported significantly more (28%) sexual activity. This result is consistent with the notion of media as a "sexual super peer," which posits that adolescents of low-engaged parents will, given the opportunity, utilize other sources for sexuality socialization (Brown, Halpern, & L'Engle, 2005). The data indicate that a television in the bedroom may become a stronger source of sexual socialization when parents are less engaged.

The proportions of adolescents who reported smoking, again within the four subgroups categorized by parental engagement and bedroom television status, tell a different story. Here, the two factors had independent, additive effects: Adolescents who had both beneficial factors (high parental engagement/no TV) reported the lowest rate of smoking initiation (13%) and adolescents who had both harmful factors (low parental engagement/ TV) reported the highest rate of having ever tried smoking (54%). Finding that these two factors were independent suggests that whereas adolescents utilize media for sexuality-specific socialization primarily when parental engagement is low, adolescents utilize media for smoking-specific socialization regardless of level of parental engagement. This finding is consistent with previous research that has documented a robust relationship between exposure to smoking portrayals in movies and subsequent adolescent smoking, even after taking into account a number of other factors that predict initiation of cigarette smoking (Jackson et al., 2007; Sargent et al., 2005; Wakefield et al., 2004). The glamour and allure of smoking by favorite television and movies actors may be especially compelling for young adolescents (Distefan, Gilpin, Sargent, & Pierce, 1998).

Black/White Differences in Media Use

The idea that Blacks and Whites use television differently is not new. Thirty years ago, in a review of television use by young people, Comstock and Cobbey (1979) noted that ethnic minorities have a distinctive orientation and different tastes and preferences in television programming than Whites. Black families also hold more favorable attitudes toward television (Huston et al., 1992) and see television as more realistic (Poindexter & Stroman, 1981). In a national survey of parents of 5- to 16-year-old children conducted in late 2006, African American parents were sig-

nificantly more likely than Hispanic or White parents to say that the media actually make their children *less* likely to engage in unhealthy behaviors such as aggressive behavior and alcohol use (Common Sense Media, 2007). In fact, 47% of the African American parents as compared to 37% of the Hispanic and 24% of the White parents thought that the media their child used made him/her *less* likely to use tobacco products (i.e., cigarettes or chewing tobacco) (Common Sense Media, 2007). Thus, parents in some households may think of the adolescent in the bedroom watching television as safer than with peers who could promote unhealthy behaviors.

These known differences in how Blacks and Whites use media suggest new directions for research. It is possible, for example, that there are race differences in the perceived capacity of television and movies to influence children's health-related attitudes and behaviors, in how often and in what manner parents co-view media with their children, and in whether parents attempt to counter media messages or portrayals that conflict with family norms. Research on these and other media-specific parenting practices is needed to determine why lack of a bedroom television is related to healthier media use practices and less involvement in risk behaviors such as smoking and sexual intercourse for White but not Black adolescents.

Study Limitations

This study provided correlational, not causal, evidence of media effects on youth risk behaviors. Moreover, variables not measured by this study could have accounted for the observed associations between bedroom television status and adolescents' health risk behaviors. Research studies in which youth media exposure is more tightly controlled, and in which the effects of extraneous variables are controlled, are needed to obtain causal evidence of media effects on youth risk behaviors.

This study measured adolescents' perceptions of parental oversight of media use and general parental engagement, not self-reported parental behavior. It is possible that parents' reports of these variables differ significantly from adolescents' perceptions. Still, previous research has documented the value of assessing the adolescent's perception whether or not it is consistent with reality. It would be interesting to compare parents' own and adolescents' perceptions and investigate how these differences (or similarities) covary with adolescents' media use practices.

Although this study used reliable measures of the sexual content in television programs and movies that adolescents view at home, it did not separate content that was viewed on the bedroom television from content viewed on other televisions. It is possible that different kinds of programs were viewed in the bedroom than in more communal viewing spaces. Because of past research on bedroom television (reviewed previously) and the results of the current study, the authors assume that more risk-promoting content was viewed primarily in the privacy of bedrooms, but could not specifically test this assumption. An important area for future research is to examine the context of adolescent media use in detail to determine what

proportion of exposure to mature content programs/movies occurs via bedroom media (TV/DVDs/etc.), and whether co-viewing mature program content with parents, siblings, friends, or others modifies the possible socialization effects of exposure to such content.

Finally, as noted by many investigators, health disparities associated with race are common and have complex etiologies (Prevention Institute, 2006). That is, race is a marker for an array of genetic, social, cultural, and environmental factors that could account for the observed variation by race in media use practices and risk behaviors. Until these relationships are unraveled, the race differences observed in the present study cannot be attributed to race, *per se*. At the very least, however, the patterns of racial differences observed by this study are provocative and merit further study.

Conclusion

Recent research focusing on adolescents, the media, and risk behaviors is beginning to tell an interesting story. Evidence is accumulating that young people's media use patterns have significant associations with their sexual attitudes and behavior as well as their tobacco use behaviors, and that it is important to consider the contexts in which adolescents consume and interact with media. Parents who stay engaged with and monitor their adolescent children's media use can likely make a difference in whether or not their children engage in health risk behaviors. The increasingly common practice of putting old televisions in children's bedrooms may not be a benevolent act.

References

- Albarran, A. B., & Umphrey, D. (1993). An examination of television motivations and program preferences by Hispanics, Blacks, and Whites. *Journal of Broadcasting & Electronic Media*, 37, 95–103.
- Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology*, 53, 27–51.
- Austin, E. W. (1995). Reaching young audiences: Developmental considerations in designing health messages. In E. Maibach & R. L. Parrott (Eds.), *Designing health messages: Approaches from communication theory and public health practice* (pp. 114–144). Thousand Oaks, CA: Sage.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (2002). Social cognitive theory of mass communication. In J. Bryant & D. Zillmann (Eds.), *Media effects: Advances in theory and research* (2nd ed., pp. 121–153). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Bickham, D. S., Vandewater, E. A., Huston, A. C., Lee, J. H., Caplovitz, A. G., & Wright, J. C. (2003). Predictors of children's electronic media use: An examination of three ethnic groups. *Media Psychology*, 5, 107–137.
- Bovill, M., & Livingstone, S. M. (2001). Bedroom culture and the privatization of media use. In *Children and their changing media environment: A European comparative study* (pp. 179–200). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

- Brener, N. D., Collins, J. L., Kann, L., Warren, C. W., & Williams, B. I. (1995). Reliability of the Youth Risk Behavior Survey questionnaire. *American Journal of Epidemiology*, 141(6), 575–580.
- Brown, J. D., & Cantor, J. (2000). An agenda for research on youth and the media. *Journal of Adolescent Health*, 27(2), 2–7.
- Brown, J. D., Halpern, C. T., & L'Engle, K. L. (2005). The mass media as sexual super peer for early maturing girls. *Journal of Adolescent Health*, 36(5), 420–427.
- Brown, J. D., L'Engle, K. L., Pardun, C. J., Guo, G., Kenneavy, K., & Jackson, C. (2006). Sexy media matter: Exposure to sexual content in music, movies, television, and magazines predicts Black and White adolescents' sexual behavior. *Pediatrics*, 117(4), 1018–1027.
- Brown, J. D., & Pardun, C. J. (2004). Little in common: Racial and gender differences in adolescents' television diets. *Journal of Broadcasting & Electronic Media*, 48, 266–278.
- Byrd-Bredbenner, C., Finckenor, M., & Grasso, D. (2003). Health-related content in prime-time television programming. *Journal of Health Communication*, 8(4), 329–341.
- Centers for Disease Control. (2004). Youth risk behavior surveillance—United States, 2003. *Morbidity and Mortality Weekly Report*, 53(Surveillance Summary 2), 1–96.
- Christakis, D. A., Ebee, B. E., Rivara, F. P., & Zimmerman, F. J. (2004). Television, video, and computer game usage in children under 11 years of age. *Journal of Pediatrics*, 145(5), 652–656.
- Common Sense Media. (2007, February). *The 2007 poll of American parents: Parents speak on the impact of media on their kids' health*. Retrieved February 27, 2007, from <http://www.common sense media.org>
- Comstock, G., & Cobbey, R. R. (1979). Television and the children of ethnic minorities. *Journal of Communication*, 29(1), 104–115.
- Dalton, M. A., Tickle, J. J., Sargent, J. D., Beach, M. L., Ahrens, M. B., & Heatherton, T. F. (2002). The incidence and context of tobacco use in popular movies from 1988 to 1997. *Preventive Medicine*, 34, 516–523.
- Dennison, B. A., Erb, T. A., & Jenkins, P. L. (2002). Television viewing and television in bedroom associated with overweight risk among low-income preschool children. *Pediatrics*, 109(6), 1028–1035.
- Distefan, J. M., Gilpin, E. A., Sargent, J. D., & Pierce, J. P. (1998). Do movies stars encourage adolescents to start smoking? Evidence from California. *Preventive Medicine*, 28, 1–11.
- Hartup, W. W. (1983). Peer relations. In E. M. Hetherington (Ed.), *Socialization, personality, and social development* (Vol. 4, pp. 116–173). New York: John Wiley & Sons.
- Hazan, A., & Glantz, S. A. (1995). Current trends in tobacco use in prime-time fictional television. *American Journal of Public Health*, 85, 116–117.
- Henriksen, L., & Jackson, C. (1999). Reliability of children's self-reported cigarette smoking. *Addictive Behaviors*, 24(2), 271–277.
- Huston, A. C., Donnerstein, E., Fairchild, H., Feshbach, N., Katz, P., Murray, J. et al. (1992). *Big world, small screen: The role of television in American society*. Lincoln: University of Nebraska Press.
- Jackson, C., Brown, J., & L'Engle, K. (2007). R-rated movies, bedroom televisions, and initiation of smoking by White and Black adolescents. *Archives of Pediatrics and Adolescent Medicine*, 161, 260–268.
- Kelman, H. C. (1958). Compliance, identification, and internalization: Three processes of attitude change. *Journal of Conflict Resolution*, 2, 51–60.
- Kunkel, D., Biely, E., Eyal, K., Cope-Farrar, K., Donnerstein, E., & Randrich, F. (2003). *Sex on TV 3: A biennial report of the Kaiser Family Foundation*. Menlo Park, CA: Kaiser Family Foundation.
- Kunkel, D., Eyal, K., Donnerstein, E., Farrar, K., Biely, E., & Rideout, V. (2007). Sexual socialization messages on entertainment television: Comparing content trends 1997–2002. *Media Psychology*, 9, 595–622.
- Larson, R. (1995). Secrets in the bedroom: Adolescents' private use of media. *Journal of Youth and Adolescence*, 24(5), 535–550.
- Livingstone, S. (2002). *Young people and new media*. Thousand Oaks, CA: Sage.

- Maccoby, E. E., & Martin, J. A. (1983). Socialization in the context of the family: Parent-child interaction. In E. M. Hetherington (Ed.), *Socialization, personality, and social development* (Vol. 4, pp. 1–101). New York: John Wiley.
- Nathanson, A. I. (2001). Mediation of children's television viewing: Working toward conceptual clarity and common understanding. In W. B. Gudykunst (Ed.), *Communication Yearbook 25* (pp. 115–151). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Pardun, C. J., L'Engle, K. L., & Brown, J. D. (2005). Linking exposure to outcomes: Early adolescents' consumption of sexual content in six media. *Mass Communication & Society*, 8(2), 75–91.
- Poindexter, P. M., & Stroman, C. (1981). Blacks and television: A review of the research literature. *Journal of Broadcasting & Electronic Media*, 25, 103–122.
- Prevention Institute. (2006, October). *The imperative of reducing health disparities through prevention*. Retrieved February 27, 2007, from http://www.preventioninstitute.org/documents/DRA_ReducingHDthruPrx.pdf
- Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., Jones, J. et al. (1997). Protecting adolescents from harm: Findings from the National Longitudinal Study on Adolescent Health. *Journal of the American Medical Association*, 278(10), 823–832.
- Rideout, V. J., Vandewater, E. A., & Wartella, E. A. (2003). *Electronic media in the lives of infants, toddlers and preschoolers*. Menlo Park, CA: Kaiser Family Foundation.
- Roberts, D. F., & Christenson, P. G. (2000). *"Here's looking at you, kid": Alcohol, drugs and tobacco in entertainment media*. Washington, DC: Kaiser Family Foundation.
- Roberts, D. F., Foehr, U. G., & Rideout, V. (2005). *Generation M: Media in the lives of 8–18 year-olds*. Menlo Park, CA: Kaiser Family Foundation.
- Sargent, J. D., Beach, M. L., Adachi-Mejia, A. M., Gibson, J. J., Titus-Ernstoff, L. T., Carusi, C. P. et al. (2005). Exposure to movie smoking: Its relation to smoking initiation among US adolescents. *Pediatrics*, 116(5), 1183–1191.
- Schmitt, K. L. (2000). *Public policy, family rules and children's media use in the home*. Philadelphia: University of Pennsylvania, Annenberg Public Policy Center.
- Strasburger, V. C., & Donnerstein, E. (1999). Children, adolescents, and the media: Issues and solutions. *Pediatrics*, 103(1), 129–139.
- Strasburger, V. C., & Wilson, B. J. (2002). *Children, adolescents and the media*. Beverly Hills, CA: Sage.
- Villani, S. (2001). Impact of media on children and adolescents: A 10-year review of the research. *Journal of the American Academy of Child and Adolescent Psychiatry*, 40(4), 392–401.
- Wakefield, M., Flay, B. R., Nichter, M., & Giovino, G. (2003). Role of media in influencing trajectories of youth smoking. *Addiction*, 98, 79–103.
- Wakefield, M., Kloska, D. D., O'Malley, P. M., Johnston, L. D., Chaloupka, F., Pierce, J. et al. (2004). The role of smoking intentions in predicting future smoking among youth: Findings from Monitoring the Future data. *Addiction*, 99(7), 914–922.
- Ward, L. M. (2002). Does television exposure affect emerging adults' attitudes and assumptions about sexual relationships? Correlational and experimental confirmation. *Journal of Youth & Adolescence*, 31(1), 1–15.
- Wiecha, J., Sobol, A., Peterson, K., & Gortmaker, S. (2001). Household television access: Associations with screen time, reading, and homework among youth. *Ambulatory Pediatrics*, 1, 244–251.
- Wilson, B. J., Kunkel, D., Linz, D., Potter, W. J., Donnerstein, E., Smith, S. L. et al. (1998). The nature and context of violence on American television. In U. Carlsson & C. von Feilitzen (Eds.), *Children and media violence* (pp. 63–79). Goteborg, Sweden: UNESCO International Clearinghouse on Children and Violence on the Screen.
- Wilson, B. J., Smith, S. L., Potter, J. W., Kunkel, D., Linz, D., Colvin, C. M. et al. (2002). Violence in children's television programming: Assessing the risks. *Journal of Communication*, 52, 5–35.