

# It's Better on TV: Does Television Set Teenagers Up for Regret Following Sexual Initiation?

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**CONTEXT:** Two-thirds of sexually experienced teenagers in the United States say they wish they had waited longer to have intercourse for the first time. Little is known about why such a large proportion of teenagers express disappointment about the timing of their initial experience with sex.

**METHODS:** Data on television viewing, on regret about the timing of first intercourse and on potentially relevant covariates were obtained from a national, three-year (2001–2004) longitudinal survey of adolescents aged 12–17 at baseline. Logistic regression and path analysis were used to examine the association between exposure to sex on television and the likelihood of regret following sexual initiation, the extent to which shifts in expectations about the positive consequences of sex mediate this association and whether these relationships differ by gender.

**RESULTS:** Sixty-one percent of females and 39% of males who had sex for the first time during the study period reported that they wished they had waited to have sex. Exposure to sexual content on television was positively associated with the likelihood of regret following sexual initiation among males (coefficient, 0.34) but not females. The association among males was partly explained by a downward shift in males' sex-related outcome expectancies following sexual initiation.

**CONCLUSIONS:** Interventions that limit teenagers' exposure to televised sexual content, that provide a more accurate portrayal of sexuality than typically depicted on television or that help adolescents think critically about televised sexual content may help teenagers make more carefully considered decisions about sexual debut.

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When sexually experienced teenagers in the United States are asked if they wish they had waited longer to have sex for the first time, approximately two-thirds say yes.<sup>1</sup> Although we cannot know for sure what an affirmative answer to this question signifies, we assume it means that the respondent regrets some aspect of his or her initial sexual experience. Youth may come to regret their decision to have sex because they felt unprepared for the experience, wish they had shared it with a different partner or been at a different point in their relationship, found the sex itself to be unsatisfying or discovered that the consequences were not what they had hoped or expected.

Only a few studies have investigated the correlates of regretted sexual initiation,<sup>2–4</sup> so little is known about why such a large proportion of teenagers feel that the timing of their initial experience with sex was wrong. Cotton and colleagues asked 127 sexually experienced females recruited from an adolescent medicine clinic whether they felt they had been too young, too old or neither the first time they had had consensual sex.<sup>2</sup> Seventy-eight percent said they had been too young. Variables associated with this response included relatively young age at first intercourse, low parental education and low parental monitoring. In addition, study participants who reported that their first sexual experience had occurred neither too early nor

too late were more likely than other participants to say that being in love had motivated their decision to have sex for the first time, suggesting that having the right partner or right type of relationship may be important to avoiding regret.

A national survey of Irish youth found that teenagers were more likely to think they should have waited longer to have sex for the first time if the sex had been unplanned, unprotected or not within a close relationship.<sup>5</sup> Whether and for how long the relationship continues after sexual initiation also appear to be important determinants of regret,<sup>5</sup> perhaps because the subsequent course of the relationship either validates or calls into question earlier perceptions about the person or relationship that led to the decision to have sex. Moreover, if the decision to have sex was, in effect, an investment in the relationship, the duration of the relationship is a measure of how well the investment paid off. A better understanding of the processes by which adolescents come to regret their first sexual experience is needed, as a negative experience may impede the development of healthy sexuality and relationships.<sup>6–8</sup> This study investigates the possibility that exposure to sex on television contributes to the likelihood of regret following sexual initiation by fostering overly high expectations about the positive consequences of sex.

## THE BASIS OF REGRET

Regret is an unpleasant emotion that people experience when they realize or imagine that their present situation would have been better had they decided or acted differently in the past.<sup>9–11</sup> It is accompanied by the feeling that one should have known better, by thoughts about the mistake one has made and by a yearning to undo one's past decision.<sup>12–13</sup> The basis of regret is cognitive, in that one must consider one's past decision or action to experience regret.<sup>14</sup> Because it involves an element of self-blame, regret can lead to excessive rumination about what "could have been"<sup>15–16</sup> and can negatively impact psychological well-being.<sup>17–19</sup>

Regret may occur when the expectations on which a decision or action was based are disconfirmed.<sup>20</sup> Therefore, adolescents may infer that they have made a poor decision about when or with whom to initiate intercourse—and thus may regret the decision—if the experience fell short of their expectations. Because the media shape adolescents' expectations, they may contribute to teenagers' sexual regret. In particular, television strongly contributes to youths' sexual socialization and often engenders unrealistic expectations.<sup>21–23</sup> On average, teenagers in the United States watch three hours of television per day.<sup>24</sup> Programs popular with this age-group have an average of seven scenes of sexual content\* per hour, and 70% of episodes include at least one such scene.<sup>25</sup> These are often skewed portrayals of sexuality, and may lead to misconceptions. Because television typically focuses on the positive possibilities of sex, rather than on its potential problems,<sup>26</sup> teenagers who compare their own sexual experiences with televised versions are likely to feel dissatisfied.

Moreover, television tends to portray sexual roles in a stereotypical manner that can set up unrealistic expectations.<sup>27–29</sup> Sexual scripts on television frequently center on women's ability to attain the "right" kind of man and on their success in sexual "gatekeeping" until adequate emotional commitment is secured.<sup>29–31</sup> Men, on the other hand, are often portrayed as sexual initiators, valued for their sexual prowess, who aggressively seek sex at any cost.<sup>29,31</sup> Exposure to these portrayals may lead male youth to expect that sex is desirable under any circumstances, and female youth to expect that sex will lead to love and commitment;<sup>21,29,32,33</sup> if these expectations are not met, regret may result.

Two studies have linked exposure to sex on television to earlier sexual initiation.<sup>22,23</sup> In both, youth who at baseline had watched high levels of programming that portrayed sexual talk or behavior were more likely than other youth to have had sex 1–2 years later, even after the researchers controlled for other factors that might have explained the association. In another study, the relationship between exposure to sex on television and the timing of sexual initiation was partially mediated by teenagers' expectations about the consequences of sex.<sup>34</sup> The greater the amount of sexual content that teenagers watched, the more positive their expectations about the consequences of having

sex were; these positive expectations, in turn, were associated with an elevated likelihood of initiating intercourse. Although this research links exposure to sex on television to early sexual initiation and provides evidence that teenagers' expectations play a role in the relationship, it does not indicate that youth felt disappointed with their initial experiences with sex. However, if their sexual experiences did not meet their (perhaps media-driven) expectations, these heavy-viewing teenagers may have experienced regret.

We hypothesize that teenagers exposed to high levels of sex on television will be more likely than their peers to regret their first sexual experience—that is, to wish they had waited longer to have sex. We also hypothesize that extensive exposure to sex on television inflates expectations about the positive consequences of having sex to unrealistic levels. Although expectations about sex may be inflated among all youth as a result of our sex-focused culture, we predict that the expectations of youth exposed to high levels of sex on television are more inflated than those of youth with little such exposure. If this is the case, then heavy viewers of sex on television may lower their expectations about the consequences of sex after having sex for the first time, and do so to a greater degree than youth who view little sex on television.

We also explore gender differences in our analyses. Because television's messages about sex are less uniformly positive for females than for males,<sup>27</sup> we tentatively predict that a relationship between exposure and regret will be more likely in males. That is, we hypothesize that television's gender-specific sexual messages are more likely to set up heavy-viewing male adolescents than heavy-viewing female adolescents for having unmet sexual expectations.

## METHODS

### Sample and Procedure

We conducted a national telephone survey of youth aged 12–17 in spring 2001, and reinterviewed the same group in the spring of 2002 and of 2004. Our sample was recruited from a purchased list of households with a high probability of containing a member aged 12–17. The list was based on residential telephone listings, supplemented with other sources of information. The sample frame was stratified by census tracts' racial and ethnic distributions to yield nationally representative proportions of minority and non-Hispanic white youth. We mailed parents in these households an explanation of the study in advance, and obtained verbal consent via telephone from a parent or legal guardian before interviewing a randomly selected adolescent from the household. Youth provided verbal assent. Our baseline refusal rate was 36%. Most adults

\*In this article, as in the study by Kunkel and colleagues (reference 25), the terms "sexual content" and "sex on television" refer to any depiction of sexual activity, sexually suggestive behavior, or talk about sexuality or sexual activity.

who refused consent cited time constraints rather than concerns about the content of the survey.

Without weights, the baseline sample of 2,003 youth had demographic characteristics similar to those of all U.S. teenagers, but Hispanics and youth with highly educated parents were somewhat underrepresented. A multivariate logistic regression, based on information from the supplier of our sample and from brief interviews with parents who declined to participate, revealed that response rates were positively associated with the proportion of blacks in a census tract, with the presence in a household of a 12–14-year-old who was not randomly selected for sampling and with the selection of females of any age or males aged 14 or younger. To compensate, we created nonresponse weights. After applying these weights, our sample still differed slightly from that of the 1999 Current Population Survey.<sup>35</sup> We corrected these differences with poststratification weights.

At the second survey, attrition was 12%. Extensive modeling with rich baseline response data found no evidence of selective attrition.<sup>23</sup> Seventy-three percent of the baseline sample (1,461 youth) participated in the third survey. Multivariate logistic regression modeling revealed selective attrition from baseline. For all races, attrition was elevated among males, youth who were aged 15 or older at baseline and those whose parents had the highest levels of education. Among blacks, attrition was also elevated among youth with the lowest levels of sexual activity at baseline, and reduced among those who had not had sex at baseline but had engaged in genital noncoital sexual activity. These results were used to generate attrition weights, which were combined with the final baseline weights to produce longitudinal weights. All analyses employed these weights and accounted for their effects on standard errors.<sup>36</sup>

After we applied these weights, 68% of respondents in the third survey were white, 14% were black, 12% were Hispanic, and 6% had other racial and ethnic backgrounds or did not identify their race and ethnicity (fewer than 1% of cases were missing data). Forty-seven percent of respondents were female, 33% had at least one parent with a college degree and 59% had a parent who had been otherwise educated beyond high school.

We included in the analytic sample only respondents who had completed interviews at all three survey waves (1,390 youth) and had provided valid data on sexual behavior and television viewing at all time points. Thus, we excluded 148 respondents who requested that we skip questions about sexual behavior (an option given during the interview) during one or more surveys. To control for sexual behavior prior to television exposure, we included only those youth who had not had intercourse as of September 2001, the reference period for the television items (981 youth—507 females and 474 males). Our analyses of initiation regret were necessarily restricted to those youth who had initiated intercourse between September 2001 and the third survey (382 youth—180 females and 202 males).

## Measures

•**Intercourse experience.** Respondents' experience with intercourse was measured at each time point with the question, "Have you ever had sex with a [member of the opposite sex]?" By sex we mean when a boy puts his penis in a girl's vagina." At each interview, respondents who had had sex also reported the month and year of their first intercourse.

•**Sexual initiation regret.** In the third survey, we measured sexual initiation regret among respondents who had had intercourse, using an item from a study<sup>1</sup> by the National Campaign to Prevent Teen Pregnancy: "Do you wish you had waited longer to have sex for the first time?" To help us interpret the responses, we also asked sexually experienced participants three related questions: "Were you, personally, ready for sex?" "Was your relationship at the right point to have sex?" and "Were you with the right person to share your first sexual experience?"

•**Television viewing.** In the second survey, we measured the amount of time respondents spent watching television during a typical week, using a series of items that tapped viewing at various times of day and on various days of the week.

•**Exposure to sexual content.** In the second survey, participants reported how often they had watched each of 32 programs during the prior television season ("since school started last fall"), using a four-point scale ranging from "never" to "every time it's on." We chose programs that were popular with adolescents aged 12–17, as well as those that contained high levels of sexual content;<sup>37</sup> the programs appeared on broadcast networks or cable channels, and included animated and live-action shows, reality shows, sitcoms and dramas. We created a measure of exposure to sexual content by linking information from our survey to data about the sexual content of the programs, obtained from ongoing research by Kunkel and colleagues.<sup>25,38</sup> Their analysis representatively sampled hundreds of programs from 10 of the most frequently watched channels, including at least four episodes of each program covered in our survey. Each episode was parsed into distinct scenes, and researchers coded the presence of any sexual behavior (physical flirting, passionate kissing, intimate touching, and implied or depicted intercourse) and sexual talk (e.g., conversations about sex that had occurred), as well as the degree to which the scene focused on the sexual behavior or talk. Agreement among coders was high (89–100%). The sexual content for each program was calculated as the average number of scenes per episode containing a major focus on sexual behavior or talk. To estimate a respondent's exposure to sexual content, we multiplied the indicators of the amount of sexual content of each program in our survey by the respondent's self-reported viewing of the program and then summed across programs. Because we include average hours of television viewing as a control, the sexual content variable reflects the proportion of sexual content in the respondent's television "diet," regardless of the total amount of television exposure.

•**Sexual outcome expectancies.** At each interview, participants answered several questions about the likely consequences of having sex. Using a four- or five-point scale with endpoints of “strongly agree” and “strongly disagree,” they indicated how much they agreed that having sex would “feel good,” “lead you to feel guilty,” “help you feel more mature or grown up,” “help improve a couple’s relationship” and “lead to a sexually transmitted disease.” In addition, they used a two-point scale to say whether they agreed that having sex would “give you a bad reputation at school” and “make someone more popular at school.” Items were coded so that higher scores indicate more positive expectancies. The scale’s reliability was acceptable in the second survey among the total sample ( $\alpha=0.69$ ), and in the third survey among participants who had initiated sexual intercourse between the last two surveys ( $\alpha=0.64$ ).

To measure shifts in outcome expectancies between the second and third surveys, we standardized all outcome expectancy items for those time points, subtracted participants’ responses to corresponding pairs of items from the two surveys and took the mean of the resulting difference scores. Higher scores indicate shifts toward less positive expectancies.

•**Covariates.** We included variables that might influence adolescents’ reactions to their first sexual experience and the reactions of people in adolescents’ social networks, reasoning that both types of factors are likely to influence regret. We also included several indicators known to predict adolescents’ sexual attitudes and behavior, as little is known about predictors of sexual initiation regret. Unless otherwise noted, covariates were measured at baseline.

Demographic variables included the respondent’s race and ethnicity; we created three dummy variables, to compare blacks, Hispanics and participants from other racial and ethnic minorities with whites. Age at baseline was measured continuously in years. We also asked whether the respondent’s friends were primarily older than, younger than or about the same as age as the respondent, and dichotomized the responses as either older or other. To measure religiosity, we asked participants to indicate on a four-point scale (1=strongly disagree to 4=strongly agree) their agreement with the statement, “Religion is very important in my life.” Teenagers who lived with both biological parents were contrasted with those who did not. The more highly educated parent’s level of schooling was classified on a six-point scale (1=less than high school to 6=graduate or professional degree).

Other covariates were more directly related to sex. We asked participants to anticipate how their parents would react if they were to have sex in the following year (1=disapprove a lot to 5=approve a lot). Because responses were bimodal, we recoded the item to dichotomously reflect anticipated disapproval versus approval or neutrality. We measured peer norms by asking, “How would your friends feel if you had sexual intercourse in the next year

(1=disapprove a lot to 5=approve a lot)?” Items assessing respondents’ intention to have sex in the next year and their sexual self-efficacy were both assessed at baseline, again using a five-point scale (1=not at all likely to 5=extremely likely). The self-efficacy measure was drawn from a scale validated in a previous study in which it was the highest loading item.<sup>4</sup> Respondents were asked “How likely is it that you would be able to talk with a [member of the opposite sex] about whether or not you should have sex?” Finally, in the third survey we asked respondents if they were still in a relationship with their first sexual partner, as youth are presumably less likely to perceive that sexual initiation was a mistake if they are still in the relationship.

A small number of respondents were missing data for one or more predictor variables. Although the proportion of missing responses for any variable was less than 3%, listwise deletion of cases with missing data would have resulted in significant sample loss in our multivariate analyses and may have biased our results. Therefore, we imputed missing data on these predictors on the basis of random draws corresponding to model-based predicted probabilities.<sup>39</sup>

## Overview of Analyses

We used two-group (males vs. females) logistic regression and path analysis to address four questions: Is exposure to sex on television associated with youths’ likelihood of expressing regret about their initial experience with intercourse? Are reductions in youths’ expectations about the positive consequences of sex following sexual initiation associated with their prior exposure to sex on television? Do the changes in expectations mediate any association between exposure to sex on television and initiation regret? Finally, do these processes differ by gender?

Each of the first three questions was tested in a separate model. Model 1 examined predictors of initiation regret among respondents who had not had sex prior to the television exposure reference period. Model 2 assessed the relationship between shifts in sexual outcome expectancies following sexual initiation and prior exposure to sexual content on television. To account for any changes in expectations that may have occurred as a result of maturation or other factors unrelated to intercourse,<sup>40</sup> we compared this relationship with that among respondents who did not initiate intercourse (i.e., we tested for an interaction between sexual initiation and exposure to sexual content in predicting changes in expectancies).

In model 3, we returned to predicting initiation regret, this time using a path analysis to test for mediation. We estimated a direct path from exposure to sexual content to initiation regret, and an indirect path via a negative shift in outcome expectancies. In addition, all covariates were allowed to have both direct and indirect associations with initiation regret as well. We estimated all paths among both males and females, using a multiple-group approach to increase the stability of parameter estimates.

**TABLE 1. Unstandardized regression coefficients (and standard errors) from logistic regression analysis assessing the relationship between selected measures and regret about sexual initiation among a sample of youth who initiated intercourse between 2002 and 2004, by gender**

Measure	Males (N=202)	Females (N=180)
Television exposure		
Total	−0.31 (0.12)**,††	0.14 (0.15)
Sexual content	0.34 (0.12)**,††	−0.24 (0.16)
Age	0.21 (0.10)*,†	−0.14 (0.10)
Still with first partner	−0.47 (0.20)*	−0.47 (0.20)*
Race/ethnicity (vs. white)		
Black	0.04 (0.31)	0.04 (0.31)
Hispanic	0.26 (0.39)	0.26 (0.39)
Other	−0.71 (0.37)	−0.71 (0.37)
Two-parent household	0.23 (0.38)†	−0.57 (0.31)
Parental education	−0.10 (0.07)	−0.10 (0.07)
Parental disapproval of sex	−0.03 (0.36)	−0.03 (0.36)
Has mainly older friends	−0.72 (0.25)**	−0.72 (0.25)**
Friends' approval of sex	0.12 (0.09)	0.12 (0.09)
Religiosity	0.23 (0.09)**	0.23 (0.09)**
Intention to have sex	−0.28 (0.10)**	−0.28 (0.10)**
Positive outcome expectancies	−0.25 (0.16)	−0.25 (0.16)
Sexual self-efficacy	−0.06 (0.11)	−0.06 (0.11)

\*Coefficient for regression significant at  $p < .05$ . \*\*Coefficient for regression significant at  $p < .01$ . †Gender difference significant at  $p < .05$ . ††Gender difference significant at  $p < .01$ . Notes: All variables were assessed in 2001, except for the television measures (2002) and "still with first partner" (2004). Measures of relationship with first partner, two-parent household and older friends were dichotomous; measures of television exposure, age and outcome expectancies were continuous. All other variables were categorical; for details, see page 95.

We controlled for baseline expectancies in both this model and model 1.

In addition, we conducted a Sobel test of mediation for model 3.<sup>41</sup> Although the Sobel test is regarded as conservative,<sup>42,43</sup> it is the most commonly used method for testing mediation. We used Baron and Kenny's modification of the test.<sup>44</sup>

To test for gender differences, we first constrained all regression and path coefficients in a model to be equal for males and females. We then tested whether each constraint is reasonable by examining, separately for each coefficient, the chi-square difference between the fully constrained model and a less parsimonious model that allows for gender-specific coefficients. If the chi-square difference test for the relationship between the fully constrained model and one that allows for a gender difference is significant, then we infer that the relationship varies by gender. In examining gender differences in exposure to sexual content and total television exposure, we constrained and freed both parameters simultaneously because they are conceptually interdependent.

All analyses were conducted in Mplus 3.12, using maximum likelihood for parameter estimation.<sup>36</sup> To make estimates more robust to potential violations of the assumption of multivariate normality, we employed a sandwich estimator of standard errors and tested the significance of coefficients with the Yuan-Bentler test statistic.<sup>45</sup>

\*The formula for this modified Sobel test is  $z = a \times b / \sqrt{(b^2 \times sa^2 + a^2 \times sb^2)}$ , where  $a$  is the effect of the independent variable on the mediator,  $b$  is the effect of the mediator on the outcome variable,  $sa$  is the standard error of  $a$ , and  $sb$  is the standard error of  $b$ .

## RESULTS

Of the 981 youth who had not had sex prior to September 2001, 73% were white, 12% Hispanic, 9% black, 3% Asian and 3% of other races or ethnicities. Their mean age at baseline was 15. Initiation regret was common among the 382 youth who had sex for the first time between September 2001 and the time of the third survey: Forty-six percent of respondents (61% of females and 39% of males) reported that they wished they had waited longer to have sex. Of those who said they wished they had waited longer, 70% said they had not been ready to have sex, 76% said their relationship had not been at the right point and 65% said they had not been with the right person. Thus, many regretted more than one aspect of the experience.

### Exposure to Sex on Television and Initiation Regret

Our first model examined the relationship between exposure to sex on television and initiation regret. Chi-square testing (not shown) revealed that the relationship between the television variables and initiation regret differed by gender ( $\chi^2(2) = 11.57$ ;  $p < .01$ ), as did that between age and initiation regret ( $\chi^2(1) = 4.50$ ;  $p = .03$ ) and between living with both biological parents and initiation regret ( $\chi^2(1) = 5.44$ ;  $p = .02$ ).

Exposure to sexual content was a predictor of initiation regret among males but not among females (Table 1). The more sexual content males viewed, the more likely they were to subsequently report regretting their initial sexual experience (coefficient, 0.34).

Other significant predictors of regretting initiation were not being with one's first sexual partner at the time of the third survey, not having mainly older friends, religiosity and intention to have sex. Age was positively associated with the likelihood of regret among males, but not among females.

### Exposure to Sex on Television and Shifts in Expectancies

Chi-square testing for model 2 revealed three gender differences (not shown). The association between the interaction term (i.e., between exposure to sex on television and intercourse initiation) and shifts in outcome expectancies differed by gender ( $\chi^2(1) = 14.05$ ;  $p < .001$ ). So, too, did the association between perceived friends' approval of sex and negative shifts in outcome expectancies ( $\chi^2(1) = 5.41$ ;  $p = .02$ ), and between sexual self-efficacy and negative shifts in outcome expectancies ( $\chi^2(1) = 7.58$ ;  $p < .01$ ).

Model 2 revealed that exposure to sexual content was inversely associated with negative shifts in outcome expectancies among both males and females (coefficient, −0.06 for both; Table 2). That is, respondents who viewed relatively high levels of sexual content had more positive sexual outcome expectancies at the final survey than they had had prior to television exposure, and this shift was greater than that among those who viewed less sexual content. However, the effect among males (but



not females) was qualified by an interaction between exposure to sex on television and intercourse initiation (coefficient, 0.13). This interaction implies that for males who had not had sex by the third survey, greater exposure to sexual content was associated with a positive shift in sex-related outcome expectancies, just as was true for all females. Conversely, among males who did initiate intercourse, those who watched higher levels of sexual material on television were more likely than those who watched lower levels to experience a negative shift in expectancies. Intercourse experience was not itself a predictor of expectancy shifts among members of either sex.

### Shifts in Expectancies as a Mediator

Having established that a negative shift in outcome expectancies is a plausible mediator of the association between exposure to sex on television and initiation regret among males, we estimated a path model to assess the mediating pathways. Like the sample for model 1, the analytic sample for this model was restricted to youth who initiated intercourse between September 2001 and the time of the third survey. Because many parameters of this model merely replicate those presented in models 1 and 2, and our goal was solely to test for mediation among males, we present only the results related to this test.

As expected, males' exposure to sex on television was positively associated with a negative shift in sexual outcome expectancies (coefficient, 0.09; standard error, 0.04;  $p < .05$ ), which in turn was associated with an increased likelihood of regret (coefficient, 0.65; standard error, 0.14;  $p < .001$ ). In addition, exposure to sex was associated with initiation regret among males (coefficient, 0.28; standard error, 0.12;  $p < .05$ ), independent of shifts in their sexual outcome expectancies. The modified Sobel test for the indirect effect of exposure to televised sexual content on initiation regret through a negative shift in expectancies yielded a  $z$ -value of 1.88 and a  $p$  value of .06, which we interpret as evidence of mediation, given the conservative nature of the Sobel test.

### DISCUSSION

In our national sample of youth, we found remarkably high rates of sexual initiation regret. The majority of sexually experienced females and more than one in three males said that they wished they had waited longer to have sex for the first time. Moreover, many regretted more than one aspect of the experience (they had not been ready to have sex, their relationship had not been at the right point or they had not been with the right person), suggesting that the question about the timing of first intercourse captured both feelings of regret and youths' sense that things would have been better if only they had waited longer to have sex for the first time.

We hypothesized that television contributes to these high rates of regret and found support for this hypothesis among males. Specifically, males exposed to higher levels

**TABLE 2. Unstandardized regression coefficients (and standard errors) from logistic regression analysis assessing the relationship between selected measures and negative shift in sexual outcome expectancies following sexual initiation, among youth who had not had sex in 2002, by gender**

Measure	Males (N=474)	Females (N=507)
Television exposure		
Total	0.02 (0.02)	0.02 (0.02)
Sexual content	-0.06 (0.02)*	-0.06 (0.02)*
Initiated intercourse between 2002 and 2004	-0.01 (0.04)	-0.01 (0.04)
Sexual content exposure x intercourse initiation	0.13 (0.05)**,+††	-0.05 (0.05)
Age	0.01 (0.01)	0.01 (0.01)
Race/ethnicity (vs. white)		
Black	-0.03 (0.08)	-0.03 (0.08)
Hispanic	-0.12 (0.07)	-0.12 (0.07)
Other	-0.03 (0.07)	-0.03 (0.07)
Two-parent household	0.05 (0.05)	0.05 (0.05)
Parental education	0.01 (0.01)	0.01 (0.01)
Parental disapproval of sex	0.09 (0.08)	0.09 (0.08)
Has mainly older friends	0.00 (0.05)	0.00 (0.05)
Friends' approval of sex	0.01 (0.03)†	0.06 (0.03)*
Religiosity	0.02 (0.02)	0.02 (0.02)
Intention to have sex	0.04 (0.03)	0.04 (0.03)
Positive outcome expectancies	0.11 (0.04)**	0.11 (0.04)**
Sexual self-efficacy	0.07 (0.03)*,††	-0.02 (0.03)

\*Coefficient for regression significant at  $p < .05$ . \*\*Coefficient for regression significant at  $p < .01$ . †Gender difference significant at  $p < .05$ . ††Gender difference significant at  $p < .01$ . †††Gender difference significant at  $p < .001$ . Notes: All variables were assessed in 2001, except for the television measures (2002). Measures of relationship with first partner, two-parent household and older friends were dichotomous; measures of television exposure, age and outcome expectancies were continuous. All other variables were categorical; for details, see page 95.

of sexual content on television prior to having sex for the first time were more likely to regret the circumstances of their sexual initiation than were males who watched less sexual content. In prior work, we found that exposure to sexual content on television was associated with early sexual initiation, even after we controlled for other predictors of adolescent sex.<sup>23</sup> This finding suggested that watching sexual material on television might lead to earlier sexual initiation, a concern because early sex may have negative ramifications for youth. Earlier age at first sex is correlated with elevated risks of both pregnancy and STDs,<sup>46</sup> and might have negative social and emotional consequences. Nonetheless, our prior study did not directly link television viewing with health or emotional harm, raising the question of whether youth who see more sex on television experience outcomes that they themselves perceive to be negative. The present findings indicate they do. However, we cannot tell from our data whether the regrets that respondents expressed are minor or deeply felt, an important question for further study.

We had reasoned that television portrayals of sexuality, which typically stress the positive possibilities of sex rather than its potential problems and consequences, build high expectations that are unlikely to be met by actual experience. Thus, youth who view a lot of sex on television should be more likely to show evidence of a "reality check." That is, their expectations should fall more after sexual initiation than should the expectations of youth who view less sex on television. We obtained strong support for this hypothesized negative shift among males.

Moreover, we found that this shift partly explained the association between males' exposure to sex on television and initiation regret.

Because female television characters are more often shown to experience negative sexual consequences than are male characters,<sup>27</sup> we expected that the association between exposure to sex on television and downward shifts in outcome expectancies following sexual initiation would be weaker among females than among males, and consequently so would the association between television and sexual regret. Instead, we found no association among females. We cannot be sure why this is the case, as negative consequences of sex, while portrayed more commonly for female characters than for their male counterparts, are nonetheless rare on television,<sup>38</sup> and the association between viewing and sexual initiation is as strong for female as for male adolescents.<sup>23</sup> Moreover, rates of reported regret are higher among females. It may be that for female youth, factors other than television viewing are more important in explaining reactions to first sex.

The associations we uncovered between our control variables and regret may provide some clues as to why females are so likely to regret the circumstances of their sexual initiation. Two key factors associated with initiation regret in our models were being more religious and having had weaker intentions to have sex prior to sexual initiation. Males and females differed strongly in their baseline levels of these variables. Compared with males, females said that religion was a more important part of their lives and reported weaker intentions to have sex (not shown). Though we can only speculate, these differences may help account for the disproportionately higher rate of regret among females.

Although we observed a high prevalence of sexual initiation regret, the proportion of youth expressing such regret was greater in the National Campaign to Prevent Teen Pregnancy<sup>1</sup> (about two-thirds) than in our study (slightly less than half). The difference has several possible explanations. The participants in our study were 15–20 years old at the time we measured regret, while those in the earlier study were aged 12–19. Our sample, unlike that in the prior study, was a national probability sample. Moreover, the context of the regret question was different in the two surveys. Our survey asked the question as part of a longitudinal study covering both media use and sex, while the earlier study asked the question as part of a onetime survey regarding reproductive health issues. Any of these factors might have affected rates of reported regret. By either metric, however, a substantial proportion of sexually experienced teenagers in the United States wish they had waited longer before having sex.

Nonetheless, the average youth in our study did not come to expect less from sex after experiencing it. Intercourse experience per se was not a predictor of expectancy shifts among males or females, and the coefficient for this variable was close to zero in both groups. Overall,

sex appears to meet the expectations expressed before intercourse, or if it does not, the discrepancy is not significant enough to cause youth to alter their beliefs. Only among males who watched high levels of sex on television did we observe a negative shift in expectations following first sex.

Our understanding of the association between exposure to sexual content on television and sexual initiation regret is limited by our use of a single item to measure regret. Although respondents who regretted the timing of first intercourse generally felt that they were not ready to have sex, were not at the right point in their relationship to have sex or were not with the right person, we cannot know for certain what they meant when they said they wish they had waited longer to have sex for the first time. It would be better if we had additional contextual information, including the type of relationship (e.g., casual or committed) the respondent had with his or her first sexual partner, whether the sex was initiated by the respondent or by the partner, and where the sex took place. We also, unfortunately, did not include in our survey a question about how satisfying the respondent's first sexual experience was, nor did we ask detailed questions about the consequences the respondent experienced as a result of having had sex. Therefore, we have little basis for assessing which aspects of the experience or its sequelae most frequently fell short of expectations. In future research, it will be important to collect such information so that we can understand precisely what aspects of sex make it seem regrettable and how this relates to exposure to televised sexual content.

Our finding that viewing sexual content on television is associated with an increased risk of regretting sexual initiation among males suggests a need for intervention. Possibilities include reaching out to parents, to teenagers and to the television industry. Parents of teenagers could be encouraged to monitor and set limits on the type of programs their children watch. Parents could also be encouraged to discuss television's sexual messages with their children, and to offer a broader perspective on sexuality to compensate for the skewed portrayal provided by television. Through media education, youth could be made aware of the ways in which sex is depicted and perhaps distorted on television, which may help them develop skills for thinking about television's sexual content more critically. Finally, the television industry could be made aware of the potential harm of providing imbalanced portrayals of sexuality.

Although our findings offer valuable insight into the contextual factors and processes that may foster initiation regret, more work is needed in this area. Many interventions are designed to persuade youth to postpone sexual initiation. Understanding the conditions under which youth feel they had sex too soon may provide guidance in helping them make more carefully considered decisions about sexual debut. Such decisions should be less likely to end in regret.

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