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

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Abstract

Context—Approximately two-thirds of all sexually experienced teenagers in the United States say they wish they had waited longer to have sexual intercourse for the first time. Little is known, though, about why such a large proportion of teenagers express disappointment about the timing of their initial experience with sexual intercourse.

Methods—Using data from a national longitudinal survey of adolescents (12-17 year olds followed to ages 15-20), we tested for a prospective association between exposure to sex on television and the likelihood of regret following sexual initiation, analyzed the mediating role of shifts in sex-related outcome expectancies from pre- to post-initiation, and investigated gender differences in these relationships.

Results—Among males (but not females), we found that greater exposure to sexual content on television was associated with an increased likelihood of regret following sexual initiation, an association partly explained by a downward shift in males' sex-related outcome expectancies following sexual initiation.

Conclusions—These findings, which offer insight into the contextual factors and processes that may foster initiation regret, could be important for advancing critical decision-making by youth about sexual debut.

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.”¹ Although we cannot know for sure what an affirmative answer to this question signifies, we presume it means that the respondent regretted some aspect of his or her initial sexual experience. That is, youth who say they wish they had waited longer to have sex for the first time apparently come to regret their decision to have sex, whether because they felt unprepared for the experience, wish they had shared it with someone else or been at a different point in their relationship, found the sex itself to be unsatisfying, or found that the consequences were not what they hoped or expected they would be.

Only a few studies have investigated the correlates of regretted sexual initiation,²⁻⁴ so little is known about why such a large proportion of teenagers feel that the timing of their initial experience with sexual intercourse was wrong. Cotton and colleagues asked 127 sexually experienced females recruited from an adolescent medicine clinic whether they felt they were too young, too old, or neither too young nor too old the first time they had consensual sex.² Seventy-eight percent said they were too young. Variables associated with this response included younger age at first intercourse, lower parental education, and lower parental

monitoring. The latter variables indicate that more than just chronological age influences the perception that sex occurred too soon or at too young an age. In addition, study participants who reported that the timing of their first sexual experience was neither too early nor too late were more likely than other participants to say that being in love motivated their decision to have sex for the first time, suggesting that the right relationship 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 that they should have waited longer to have sex for the first time if the sex was unplanned, not protected, or not within a close relationship.⁵ Whether and for how long the relationship continues after sexual initiation also appear to be important determinants of regret,⁵ 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 instrumental—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 experience with sexual intercourse is needed, as the development of healthy sexuality and the evolution of present and future relationships may be impeded by a negative first sexual experience.⁶⁻⁸

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

Theory and research suggest that regret occurs when the expectations on which a decision or action is based are disconfirmed.²⁰ We contend, therefore, that adolescents may experience sexual initiation regret in part because they expect more from their initial sexual experiences than is realistic. After the fact, adolescents may infer that they have made a poor decision about when or with whom to initiate intercourse because the experience fell short of their expectations. To the extent that adolescent's expectations are shaped by the media, this suggests that media exposure may contribute to the high levels of sexual regret reported by teenagers. In particular, television strongly contributes to youths' sexual socialization and often engenders unrealistic expectations. In the United States, teenagers watch an average of three hours of television per day.²¹ Programs popular with teenagers average seven scenes of sexual content per hour, with 70% including at least one such scene per episode.²² Research suggests that these are often skewed portrayals of sexuality, which may lead to misconceptions. Television typically focuses on the positive possibilities of sex rather than on its potential problems.²³ Comparing one's own experience with sex against televised versions is thus likely to foster dissatisfaction.

Television also tends to portray sexual roles in a stereotypic manner that can set up unrealistic expectations.²⁴⁻²⁶ Sexual scripts for women on television tend to center on women's ability to attain the “right” kind of man and on their success in sexual “gate-keeping” until adequate emotional commitment is secured.²⁶⁻²⁸ Men, on the other hand, are often portrayed as sexual initiators, valued for their sexual prowess, who aggressively seek sex at any cost.^{26, 28} 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,^{26, 29-31} resulting in sexual regret if these expectations are not met.

Two recent studies have linked exposure to sex on television with earlier sexual initiation.³²⁻³³ In both, youth who at baseline watched more programming that portrayed sexual talk or behavior were more likely to have had sex by follow-up (one to two years later), even after controlling for many factors that might otherwise have explained the association. In another study, the association between exposure to sex on television and the timing of sexual initiation was found to be partially mediated by teenagers' sexual outcome expectancies.³⁴ Teenagers who viewed more sex on television had more positive expectations about the consequences of having sex; this in turn was associated with a higher likelihood of intercourse initiation. Although this research links exposure to sex on television to early sexual initiation and provides evidence that teenagers' expectations have a role in the relationship, it does not indicate that youth felt disappointed with these initial experiences with sex. If their sexual experiences did not meet their (perhaps media-driven) expectations, these heavy-viewing teenagers may have experienced regret.

Building on this prior work and theory, we hypothesize that exposure to sex on television among teenage virgins is associated with an increased probability of regret following sexual initiation, i.e., with reports of wishing one 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. Evidence of this may be found after sexual initiation if those who watch greater amounts of sex on television evidence a downward shift in sexual outcome expectancies. That is, to the extent that heavy viewers of sex on television perceive their actual experience of first intercourse as having not met their expectations, they will shift their expectations downward. This downward shift in sexual outcome expectancies should be greater than any such shift among teenagers who watch less sex on television. While expectations prior to sexual initiation might be inflated among all youth as a consequence of our sex-focused culture, the covariate-adjusted expectations of youth who view less sex on TV should be less inflated than the expectations of heavy viewers. Thus, we propose that the relationship between television sex exposure and sexual initiation regret is mediated by a perceived disconnect between actual and expected sex-related outcomes, and that evidence of this perceived disconnect can be found in a greater post-intercourse decrease in outcome expectancies among heavier viewers.

We also explore gender differences in this process. Because television's messages about sex are less uniformly positive for females than males,²⁴ 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 in spring 2001 (T1) and re-interviewed the same group one and three years later, in the springs of 2002 (T2) and 2004 (T3). Our sample was recruited from a purchased list of households with a high probability of containing a member aged 12-17. This list was based on residential telephone listings, supplemented with other sources of information. The sample frame was stratified by census tract race/ethnicity to produce 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 just prior to conducting an interview with a randomly selected adolescent from the household. Youth provided verbal assent. Our baseline refusal rate was 36%. Most adults who refused consent cited time constraints rather than concerns with the sexual content of the survey.

Nonresponse and Attrition Weights

Without weights, the baseline sample of 2,003 youth had demographic characteristics similar to those of all teenagers in the U.S., but included somewhat fewer Hispanics and youth with highly educated parents. A multivariate logistic regression predicting nonresponse at baseline from information provided by the supplier of our sample and a brief nonresponse interview identified higher response rates (1) in census tracts with higher proportions of blacks, (2) among households where an adolescent aged 12-14 was present but not randomly selected, and (3) when females of any age or males aged 14 or younger were randomly selected for sampling. We created nonresponse weights inversely proportional to the probability of enrollment indicated by this regression equation. After applying these weights, there were still small departures from the 1999 Current Population Survey, which we corrected with poststratification weights.

At T2, attrition was 12%. Extensive modeling with rich baseline response data found no evidence of selective attrition.³³ Seventy-three percent of the baseline sample ($N = 1,461$) participated in the T3 survey. Multivariate logistic regression modeling of attrition from baseline to T3 revealed some selective attrition. Overall, attrition was higher among all races for youth over 14 at baseline, males, and those whose parents had greater educational attainment. Among blacks, attrition was also higher among those with the least sexual activity at baseline and was lower among those who, as of baseline, had not engaged in intercourse but had engaged in genital noncoital sexual activity. Results from this modeling were used to generate inverse-probability attrition weights, which were combined with the final baseline weights to produce longitudinal weights. All analyses employed these weights, appropriately accounting for their effects on standard errors.³⁵

After applying these weights, 47% of T3 respondents were female, 68% were white, 14% were black, 12% were Hispanic, and 6% either identified themselves as having other racial/ethnic backgrounds or did not provide information about race/ethnicity (< 1% of cases missing data on race/ethnicity). At least one parent had a college degree for 33% of the longitudinal sample; 59% had a parent who had been otherwise educated beyond high school.

Measures

Sexual initiation regret—We measured sexual initiation regret at T3 with an item taken from the survey of the National Campaign to Prevent Teen Pregnancy: “Do you wish you had waited longer to have sex for the first time (no/yes)?” This question was asked only of those participants who reported having had sexual intercourse by the time of the T3 survey. To help us interpret responses to this item, we also asked three related questions of those who responded in the affirmative: “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?”

Intercourse experience—Intercourse experience was measured at each time point with the item “Have you ever had sex with a boy/girl? By sex we mean when a boy puts his penis in a girl's vagina” (yes/no). At each interview, those with intercourse experience also reported the month and year of their first intercourse. We used this information to determine the relevant analysis sample – youth who initiated sex between September 2001 (the beginning of the reference period for television viewing; see below) and the T3 survey.

Average hours of television viewing—At T2, we measured the average amount of time spent watching television during a typical week with a series of items tapping viewing at various times of day and on various days of the week.

Exposure to sexual content on television—At T2, participants reported how often they watched each of 32 television programs during the prior television season (“since school started last fall”) on a 4-point scale ranging from “never” to “every time it’s on.” We chose programs that were popular with adolescents aged 12-17 at the time of the survey as well as those that contained high levels of sexual content.³⁶ The full set of programs included ones appearing on broadcast networks and basic and premium cable channels and encompassed animated and live action shows, reality shows, sitcoms, and dramas. We created a measure of exposure to television’s sexual content by linking information from our survey to information about the sexual content of the programs. Content information was obtained from ongoing research by Kunkel and colleagues.^{22, 37} Kunkel’s television content analysis representatively sampled hundreds of programs from 10 of the most frequently watched channels, representing all segments of the television industry. Kunkel sampled four to more than a dozen episodes for each program covered in our survey. Coders parsed the episodes into distinct scenes and coded the presence of any sexual behavior (physical flirting, passionate kissing, intimate touching, implied intercourse, depicted intercourse) and sexual talk (e.g., talk about sex that occurred and talk toward sex). Raters coded the degree of focus on sexual behavior or talk in each scene. High levels of agreement (ranging from 89-100%) were observed among coders. For each TV program studied, amount of sexual content was calculated as the average number of scenes per episode containing a major focus on sexual behavior plus the average number of scenes containing a major focus on talk about sex. We derived the exposure measure by multiplying the indicators of the amount of sexual content in each program covered in our survey by self-reported viewing of each program and then summing across programs. Because we used average hours of TV exposure as a control, our sexual content variable reflects the *proportion* of sexual content relative to other material in one’s television diet, regardless of the total amount of television exposure.

Sexual outcome expectancies—At each interview, participants responded to several questions about the likely consequences of having sex. Participants indicated how much they agreed that having sex would (a) “feel good,” (b) “lead you to feel guilty,” (c) “help you feel more mature or grown up,” (d) “give you a bad reputation at school,” (e) “help improve a couple’s relationship,” (f) “make someone more popular at school,” and (g) “lead to a sexually transmitted disease.” For all but two items, participants used 4- and 5-point scales with endpoints of *strongly agree* and *strongly disagree* to indicate their (dis)agreement with the item. For the items about popularity and reputation, participants used a 2-point scale to say whether they agreed or disagreed that having sex would lead to increased popularity or worsen one’s reputation among schoolmates. Outcome expectancy items were coded so that higher scores indicate expectancies that are more positive. The alpha reliability for the outcome expectancy scale at T2 is .69 among the total sample and .64 among the subset of participants who initiated sexual intercourse between T2 and T3. To create a measure of shift in outcome expectancies from T2 to T3, we standardized all T2 and T3 outcome expectancy items, subtracted participants’ responses to corresponding pairs of items from the two surveys, and took the mean of the resulting difference scores. Difference scores were computed in such a way that higher scores on the shift in outcome expectancy scale indicate shifts toward less positive expectancies. In the model that predicted shifts in outcome expectancies and the model that examined the potential mediating influence of shifts in outcome expectancies (see below), we controlled for baseline sexual outcome expectancies.

Covariates—We selected as covariates variables that might influence how adolescents react to their first sexual experience or how people in adolescents’ social networks would react to their loss of virginity, reasoning that both types of variables are likely to influence initiation 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. Race/ethnicity was self-reported. We created three dummy variables to compare blacks, Hispanics, and participants from other racial/ethnic minorities to whites. Respondent age at baseline was measured continuously in years. Controlling for age allowed us to examine the perception of having sex too soon independent of chronological age. Teenagers living with both biological parents were contrasted with all others. Parent education was measured as schooling completed by the more highly educated parent (1 = *less than high school* to 6 = *graduate or professional degree*). We asked participants to anticipate how their parents would react if they had 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 parents' disapproval versus approval or neutrality. We measured peer prescriptive norms by asking respondents, "How would your friends feel if you had sexual intercourse in the next year (1 = *disapprove a lot* to 5 = *approve a lot*)?" One item assessed whether the respondent's friends were primarily older, younger or about the respondent's age, and was dichotomized to indicate "older" versus all other responses. To measure religiosity, we asked participants to indicate on a 4-point scale their agreement with the statement, "Religion is very important in my life." We included two indicators of adolescent interest in sex or sexual readiness prior to television sex exposure: intentions to have sex in the next year (1 = *not at all likely* to 5 = *extremely likely*) and sex self-efficacy. Sex self-efficacy was measured with the item: "How likely is it that you would be able to talk with a boy (if female respondent) or girl (if male respondent) about whether or not you should have sex?" This item was drawn from a larger sexual self-efficacy scale validated in a previous study in which it was shown to have the highest loading among the items making up the scale.³⁴ Finally, we included an indicator of whether the person with whom respondents first had sex was still their relationship partner at T3, as youth are presumably less likely to perceive that the context for sexual initiation was a mistake if they are still in the relationship.

Missing Data Imputation

A small number of respondents had missing data on one or more predictor variables. Although the percentage missing on any one variable was less than 3%, listwise deletion of cases would have resulted in significant sample loss in our multivariate analyses. To avoid bias that listwise deletion might introduce in our results, we imputed missing data on these predictors.³⁸ Imputation was based on random draws corresponding to model-based predicted probabilities.

Overview of Analyses

We used two-group (males vs. females) logistic regression and path analysis to address four questions: (1) Are youth with greater exposure to sex on TV more likely to express regret about their initial experience with intercourse than youth with lesser exposure? (2) Do youth who watch more sex on television experience greater downward shifts in their sex-related outcome expectancies post-initiation than youth who watch less sex on television? (3) Do shifts in sex-related outcome expectancies following intercourse initiation mediate any association between television sex exposure and initiation regret? and (4) Are there gender differences in these processes? Each of the first three questions was tested in a separate model. Model 1 predicted initiation regret among those who were virgins prior to the television exposure reference period. Model 2 compared shifts in expectancies from pre- to post-intercourse initiation among high and low viewers of sex on television. To account for any changes that may occur over this time period as a result of maturation or other time-varying factors apart from intercourse³⁹ we compared such shifts to those evidenced among high and low viewers who did not have 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 return to predicting initiation regret, incorporating shifts in expectancies in our model to test for mediation. We also conducted a Sobel test⁴⁰ of mediation based on Model 3. Although the Sobel test is regarded

as conservative,⁴¹⁻⁴² we employed this test, as it is the most common method for testing mediation.

To test for gender differences, we first constrained all regression/path coefficients in a model to be equal for males and females and then tested whether each constraint is reasonable by examining (for each coefficient separately) the chi-square difference between the fully constrained model and a less parsimonious model that allows for gender-specific coefficients. If a constraint is reasonable, the chi-square difference test between the fully constrained model and one that allows for a gender difference will be non-significant. If the chi-square difference test is significant, then we infer that there is a moderating influence of gender on a relationship in the model, i.e., that the relationship varies by gender. In examining gender differences involving the two TV variables (exposure to sexual content and average hours of viewing), we constrained and freed both parameters simultaneously due to their conceptual interdependence.

All analyses were conducted in Mplus 3.12 using maximum likelihood for parameter estimation.³⁵ 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 T2* test statistic.⁴³

To be included in the analyses described above, respondents had to have completed interviews at all 3 survey waves ($N = 1,390$). Respondents also had to have valid sexual behavior and TV exposure data at all time points. One hundred forty-eight respondents requested that we skip questions about sexual behavior (an option given during the interview) at one or more of the surveys. These respondents were excluded from all analyses. To control for sexual behavior prior to television exposure, we included in our analysis sample only those youth who had never had intercourse (“virgins”) prior to September 2001, the reference period for the television items ($N = 981$; $n_{\text{female}} = 507$, $n_{\text{male}} = 474$). Analyses predicting initiation regret from television exposure were necessarily restricted to those youth who initiated intercourse between September 2001 and the time of the third survey ($N = 382$; $n_{\text{female}} = 180$, $n_{\text{male}} = 202$).

Results

Of the 981 youth who were virgins prior to September 2001, 73% were white, 12% Hispanic, 9% black, 3% Asian, and 3% of other races or ethnicities. The mean age of these youth at that time was 15 years. Of the 382 youth who initiated sex between September 2001 and our third survey, 61% of females and 39% of males reported that they wished they had waited longer to have sex for the first time. Of those who said they wish they had waited longer to have sex for the first time, 70% said they were personally not ready to have sex, 76% said their relationship was not at the right point, and 65% said they were not with the right person. Thus, it appears that many of those who regretted the timing of first intercourse had more than one aspect of the experience that they subsequently looked back on with regret. The question about the timing of first intercourse seems to have captured both these feelings of regret with regard to the first experience with intercourse and a sense that things would have been better if only they had waited longer to have sex for the first time.

Model 1

In our initial two-group model, we estimated the multivariate association between initiation regret and exposure to sex on television, controlling for all baseline covariates. This analysis tested whether there is indeed an association between TV sex exposure and initiation regret, and whether that association differs by gender.

Chi-square testing revealed three gender differences. The association between the television variables and initiation regret differed by gender, $\chi^2(2) = 11.57, p < .01$, as did the associations

between age and initiation regret, $\chi^2(1) = 4.50, p = .03$, and between two-parent family status and initiation regret, $\chi^2(1) = 5.44, p = .02$. Parameter estimates for the initial multivariate model are presented in Table 1.

As predicted, exposure to television sexual content was a stronger predictor of initiation regret among males. The more television sexual content males viewed, the more likely they were to subsequently report regretting their initial sexual experience. Amount of exposure to sexual content on television was unassociated with initiation regret among females.

Other significant predictors of regretting initiation were being more religious, having weaker baseline intentions to have sex, not being with one's first sexual partner at T3, and not having mainly older friends. Among males only, being older was associated with a higher likelihood of regret.

Model 2

The purpose of Model 2 was to analyze shifts in sex-related outcome expectancies from before to after first intercourse among youth who were high and low viewers of televised sex. There may be naturally occurring shifts in expectancies over this time period as a result of maturation or other factors apart from intercourse experience; to account for any such shifts, it was necessary to compare shifts among those with new intercourse experience to ones evidenced by high and low viewers of televised sex who did *not* initiate intercourse over the same period. We achieved this comparison by testing for an interaction between sexual initiation and exposure to sexual content in predicting changes in expectancies.

Chi-square testing revealed three gender differences. The association between the TV sex exposure-intercourse initiation interaction term and negative shift 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 shift in outcome expectancies, $\chi^2(1) = 5.41, p = .02$, and between sex self-efficacy and negative shift in outcome expectancies, $\chi^2(1) = 7.58, p < .01$.

The final results for Model 2 are presented in Table 2. The main effect of television sex exposure on negative shifts in outcome expectancies was significant and negative among both males and females ($b = -.06, SE = .02, p < .05$). That is, those who saw more sex on television had more positive sexual outcome expectancies at T3 than they had prior to television exposure, and this positive shift was greater than for those who saw less sex on television. This effect was qualified among males, however, by the significant interaction between intercourse initiation and exposure to sex on television ($b = .13, SE = .05, p < .01$). This interaction implies that for males who remained virgins at least until the T3 survey, higher exposure to sex on television was significantly associated with a positive shift in sex-related outcome expectancies, just as was true for all females. This can be seen in the negative coefficient for the (simple) main effect displayed in Table 2, which reflects the effect among non-initiating males. Among males who *did* initiate intercourse, those who watched more sex on television were more likely than those who watched less sex to experience a negative shift in sex-related outcome expectancies from pre- to post-intercourse.

Model 3

Having established negative shift in outcome expectancies as a plausible mediator of the association between TV sex exposure and initiation regret among males, we estimated a path model to assess the mediating pathways. As for Model 1, the analysis sample for Model 3 was restricted to youth who initiated sexual intercourse between September 2001 and the time of the third survey, as it is only among these youth that initiation regret is possible. To test for mediation, we estimated a direct path from TV sex exposure to initiation regret, as well as an

indirect path via negative shift in outcome expectancies. 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. 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, greater exposure to sex on television among males was associated with a greater negative shift in sexual outcome expectancies ($b = .09$, $SE = .04$, $p < .05$), which in turn was associated with an increased likelihood of regret ($b = .65$, $SE = .14$, $p < .001$). In addition, there was a significant positive association between exposure to sex on television and initiation regret among males ($b = .28$, $SE = .12$, $p < .05$) that was independent of shifts in their sexual outcome expectancies. To test whether negative shifts in sexual outcome expectancies explained a significant portion of the association between television sex exposure and initiation regret among males, we used Baron and Kenny's⁴⁴ modification of the Sobel test[†]. The Sobel test ($z = 1.88$) for the indirect effect of exposure to televised sexual content on initiation regret through negative shift in sexual outcome yielded 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 find remarkably high rates of sexual initiation regret. The majority of sexually experienced females and more than one in three males said that they wish they had waited longer to have sex for the first time. We hypothesized that television contributes to these high rates of regretted sex and found support for this hypothesis among males. Specifically, males exposed to greater amounts of sexual content in their television diets prior to sexual initiation were more likely to regret the timing of their sexual initiation than were males who watched less sexual content. In prior work,³³ we found that exposure to television sexual content is prospectively associated with early sexual initiation, even after controlling for other predictors of adolescent sex. This finding suggested that television might have a causal effect on sexual initiation, a concern because early sex may have negative ramifications for youth. Earlier age of first sex is correlated with both pregnancy and sexually transmitted disease (STD),⁴⁵ and might also 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. Among males who had ever had sex, those exposed to more sex on television are more likely to regret the circumstances of their first sexual experience and “wish they had waited.” We cannot tell from our data whether this is a minor regret or one 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 related to sex 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.

[†]The formula for this modified Sobel test is $z = a*b/\text{SQRT}(b^2 * sa^2 + a^2 * sb^2)$, 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 .

Because female television characters are more often shown to experience negative sexual consequences than are male characters,²⁴ we expected to find weaker evidence of an association between exposure to sex on television and downward shifts in outcome expectancies following sexual initiation among female participants, and consequently less association between television and sexual regret in this group. Instead, we found no association. We cannot be sure why this is the case, as negative consequences of sex, while portrayed more commonly for female characters, are nonetheless rare on television,³⁷ and the association between viewing and sexual initiation is as strong for female as for male adolescents.³³ Moreover, rates of reported regret are higher among females. It may be that, for female youth, factors besides television viewing are more important in explaining reactions to first sex. The associations we uncovered between our control variables and sexual initiation regret may provide some clues as to why females are so likely to regret the timing 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 on their baseline levels of these variables. Compared with males, females said that religion was a more important part of their lives ($M_{\text{female}} = 3.40$, $M_{\text{male}} = 3.11$, $p < .001$) and reported weaker intentions to have sex ($M_{\text{female}} = 1.65$, $M_{\text{male}} = 2.09$, $p < .001$). Though we can only speculate based on our data, these differences may help account for the disproportionately higher rate of regret among females.

Our understanding of the association between television sex exposure and sexual initiation regret is limited by our use of a single item to measure regret. Although responses to our question about the timing of first intercourse were highly correlated with responses to questions about whether respondents felt personally ready to have sex, whether their relationship was at the right point to have sex, and whether they were with the right person, we cannot know for certain what it means that youth say 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 teenagers had with their first sexual partner, who initiated sex, and where the sex took place. We also, unfortunately, did not include in our survey a question about how satisfying the first sexual experience was, nor did we ask detailed questions about the consequences respondents 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 on this topic, it will be important to collect such information so that we can understand precisely what aspect of sex makes it seem regrettable and how this relates to exposure to televised sexual content.

Although our finding of high rates of sexual initiation regret among youth replicates findings from the National Campaign to Prevent Teen Pregnancy,¹ our percentages are lower than the two-thirds of youth expressing regret in their survey. There are several possible reasons for the difference. Our sample was 15-20 years old at the time of the survey, while their sample was 12-19. Theirs is a national probability sample (ours is not), and the context of the question was different in the two surveys. Our survey asked the question as part of an ongoing survey covering both media use and sex, while theirs asked the question as part of a one-time survey regarding issues of reproductive health. Any of these factors might affect the overall rates of reported regret. By either metric, however, at least half of sexually experienced teenagers in the U.S. 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 pre-intercourse, or if 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 finding that television sets male adolescents up to experience sexual initiation regret suggests a need for intervention. Possibilities include reaching out to parents, to teens, and to the television industry. Parents of teenagers could be encouraged to monitor and set limits on the type of television 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 and develop skills for watching and 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 valuable insight 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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Table 1
Two-Group Logistic Regression Predicting Initiation Regret at T3 among Males and Females^a

Predictor variable	Males (n = 202)	Females (n = 180)
T2 total television exposure ^b	-.31 (.12)**	.14 (.15)
T2 television sex exposure ^b	.34 (.12)**	-.24 (.16)
Age in years at baseline ^b	.21 (.10)*	-.14 (.10)
Still with first sexual partner at T3	-.47 (.20)*	-.47 (.20)*
Race/ethnicity (vs. white)		
Black	.04 (.31)	.04 (.31)
Hispanic	.26 (.39)	.26 (.39)
Other race or ethnicity	-.71 (.37)	-.71 (.37)
Two-parent household ^b	.23 (.38)	-.57 (.31)
Parent education	-.10 (.07)	-.10 (.07)
T1 parent disapproval of sex	-.03 (.36)	-.03 (.36)
T1 has mainly older friends	-.72 (.25)**	-.72 (.25)**
T1 friend approval of sex	.12 (.09)	.12 (.09)
T1 religiosity	.23 (.09)**	.23 (.09)**
T1 sex intentions	-.28 (.10)**	-.28 (.10)**
T1 positive outcome expectancies	-.25 (.16)	-.25 (.16)
T1 sex self-efficacy	-.06 (.11)	-.06 (.11)

Note. Entries are unstandardized regression coefficients (standard errors in parentheses).

^a Among those who initiated intercourse between T2 television exposure and T3 survey

^b Coefficient differed between males and females

* $p < .05$;

** $p < .01$

Table 2
Two-Group Regression Analysis Predicting Negative Shift in Outcome Expectancies from T2 to T3^a

Predictor variable	Males (n = 474)	Females (n = 507)
T2 total television exposure	.02 (.02)	.02 (.02)
T2 television sex exposure	-.06 (.02)*	-.06 (.02)*
Initiated intercourse between T2 and T3	-.01 (.04)	-.01 (.04)
Television sex exposure × intercourse initiation ^b	.13 (.05)**	-.05 (.05)
Age in years at baseline	.01 (.01)	.01 (.01)
Race/ethnicity (vs. white)		
Black	-.03 (.08)	-.03 (.08)
Hispanic	-.12 (.07)	-.12 (.07)
Other race or ethnicity	-.03 (.07)	-.03 (.07)
Two-parent household	.05 (.05)	.05 (.05)
Parent education	.01 (.01)	.01 (.01)
T1 parent disapproval of sex	.09 (.08)	.09 (.08)
T1 has mainly older friends	.00 (.05)	.00 (.05)
T1 friend approval of sex ^b	.01 (.03)	.06 (.03)*
T1 religiosity	.02 (.02)	.02 (.02)
T1 sex intentions	.04 (.03)	.04 (.03)
T1 positive outcome expectancies	.11 (.04)**	.11 (.04)**
T1 sex self-efficacy ^b	.07 (.03)*	-.02 (.03)

Note. Entries are unstandardized regression coefficients (standard errors in parentheses).

^a Among those who were virgins prior to T2 television exposure.

^b Coefficient differed between males and females

* $p < .05$;

** $p < .01$