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Exposure to Degrading Versus Nondegrading Music Lyrics and Sexual Behavior Among Youth

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ABSTRACT

BACKGROUND. Early sexual activity is a significant problem in the United States. A recent survey suggested that most sexually experienced teens wish they had waited longer to have intercourse; other data indicate that unplanned pregnancy and sexually transmitted diseases are more common among those who begin sexual activity earlier. Popular music may contribute to early sex. Music is an integral part of teens' lives. The average youth listens to music 1.5 to 2.5 hours per day. Sexual themes are common in much of this music and range from romantic and playful to degrading and hostile. Although a previous longitudinal study has linked music video consumption and sexual risk behavior, no previous study has tested longitudinal associations between the content of music lyrics and subsequent changes in sexual experience, such as intercourse initiation, nor has any study explored whether exposure to different kinds of portrayals of sex has different effects.

DESIGN AND PARTICIPANTS. We conducted a national longitudinal telephone survey of 1461 adolescents. Participants were interviewed at baseline (T1), when they were 12 to 17 years old, and again 1 and 3 years later (T2 and T3). At all of the interviews, participants reported their sexual experience and responded to measures of more than a dozen factors known to be associated with adolescent sexual initiation. A total of 1242 participants reported on their sexual behavior at all 3 time points; a subsample of 938 were identified as virgins before music exposure for certain analyses. Participants also indicated how frequently they listened to each of more than a dozen musical artists representing a variety of musical genres. Data on listening habits were combined with results of an analysis of the sexual content of each artist's songs to create measures of exposure to 2 kinds of sexual content: degrading and nondegrading.

OUTCOME MEASURES. We measured initiation of intercourse and advancement in noncoital sexual activity level over a 2-year period.

RESULTS. Multivariate regression analyses indicated that youth who listened to more degrading sexual content at T2 were more likely to subsequently initiate intercourse and to progress to more advanced levels of noncoital sexual activity, even

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Key Words

adolescent sexual behavior, media effects, music lyrics, sexually explicit media

Abbreviation

STD—sexually transmitted disease

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after controlling for 18 respondent characteristics that might otherwise explain these relationships. In contrast, exposure to nondegrading sexual content was unrelated to changes in participants' sexual behavior.

CONCLUSION. Listening to music with degrading sexual lyrics is related to advances in a range of sexual activities among adolescents, whereas this does not seem to be true of other sexual lyrics. This result is consistent with sexual-script theory and suggests that cultural messages about expected sexual behavior among males and females may underlie the effect. Reducing the amount of degrading sexual content in popular music or reducing young people's exposure to music with this type of content could help delay the onset of sexual behavior.

BY THE TIME they reach 12th grade, 3 of 5 young people in the United States have engaged in sexual intercourse.¹ Sex is part of a healthy life, and developing an interest in sex is natural as younger teens undergo hormonal and other physical changes and older teens begin to take on young adult roles. Although there is no clear age at which sexual activity becomes appropriate, it is clear that for some youth, intercourse initiation happens too soon. A recent national survey suggested that two thirds of sexually experienced teens wish they had waited longer to have intercourse.² Moreover, early sexual initiation creates the potential for significant health risks. One in 5 sexually active high school seniors has had ≥ 4 sexual partners and more than one third failed to use a condom the last time they had sexual intercourse.¹ Nearly 900 000 teenagers become pregnant in the United States each year (1 of every 5 sexually active teen girls).³ An estimated 1 in 4 sexually active teens gets a sexually transmitted disease (STD) every year (~ 4 million teen cases of STDs annually) and half of all new human immunodeficiency virus infections in the United States occur among young people.⁴ Unplanned pregnancies and STDs are more common among those who begin sexual activity earlier,⁵ probably because some youth begin activity before they are prepared for the responsibilities entailed or because they begin having sex as part of relationships/circumstances that are less likely to foster responsible behavior. Although much is known about the predictors of intercourse initiation, there remain wide gaps in our knowledge and in our ability to predict other sexual behavior, including sexual risk behavior.

There is good reason to believe that music may have an important influence on adolescents' sexual behavior. On average, American youth listen to music from 1.5 to 2.5 hours a day, which does not include the amount of time they are exposed to music via music videos.⁶ Music media grow in importance as youth become older. Sixty percent of teens aged 15 to 18 years report spending >1

hour a day listening to music, and a quarter of them listen in excess of 3 hours per day. Some have argued that, because popular music is such a large part of adolescents' everyday experience, youth cannot be understood without a serious consideration of how music fits into their lives.⁷ From music, adolescents gain information about society, social and gender roles, and expected behavior, and they use music to facilitate friendships and social interactions and to help them create a personal identity.⁷⁻⁹ It is reasonable to expect, therefore, that the messages conveyed in popular music have significant implications for adolescent socialization and behavior.

References to relationships, romance, and sexual behavior are commonplace in the music that is most popular with teens, with $\sim 40\%$ of popular songs in the mid-1990s containing such references.⁷ A recent analysis of the content of television shows, movies, magazines, newspapers, and music popular among teens demonstrated that sexual content is much more prevalent in popular music lyrics than in any other medium.¹⁰ Despite their sexual nature, some researchers have argued that the words of popular songs matter very little, suggesting that youth do not necessarily understand or even pay attention to lyrical content.¹¹⁻¹³ Although listening to music may often be only a secondary activity for many youth, the sexual references in many popular songs may be difficult for them to ignore, because the language used to describe sex has become increasingly direct.^{7,14} Consider, for example, these lyrics by the rap music artist Lil' Kim: "When it comes to sex don't test my skills, 'cause my head game will have you head over heels. Guys wanna wife me and give me the ring. I'll do it anywhere, anyhow; I'm down for anything."¹⁵ The interest in sex expressed in these lyrics is unlikely to be lost on many teens.

There is strong theoretical justification for the notion that listening to sexual lyrics may influence adolescents' sexual behavior. According to social cognitive theory,¹⁶⁻¹⁸ people learn how to perform new behaviors by observing others and will imitate the behaviors they have observed insofar as those behaviors are perceived to have functional value. This theory would predict that listening to musicians sing about having sex with no unfavorable consequences will lead teens to perceive this behavior as appropriate and desirable, thereby increasing the likelihood that they will imitate the behavior. The likelihood of imitation increases when the model is perceived as attractive or similar to the self.¹⁶ Highly popular music artists can, therefore, serve as especially potent role models for teens.

Some versions of social learning theory argue that what people learn from media role models are "scripts."¹⁹⁻²¹ A script typically includes information about what events are likely to occur in a specific scenario, how a person should behave in that scenario, and what the likely outcomes of their behavior will be. Sex-

ual scripts establish norms and expectations about how and with whom to be sexual, why and when to have sex, and what the appropriate setting and sequence of events are. Through its dominant themes and characterizations, music may provide young people insights into particular sexual scripts, shaping their attitudes and assumptions about sexual relationships and creating a notion of what is expected and normative.²² These attitudes, expectations, and norms may, in turn, play a role in adolescents' sexual decision-making and behavior.

The only study to examine the association between exposure to sexual content in music and adolescents' sexual intentions and activity was reported recently by Pardun et al.¹⁰ In this study, Pardun et al¹⁰ analyzed the content of popular music lyrics for references to sexual development, romantic relationships, and sexual behavior and found that the more teens listened to music that contained such references, the more likely they were to be sexually active and to anticipate future sexual activity. In that study, higher levels of exposure to sexual music content might have led to increased sexual activity and future intentions to be sexually active; however, a plausible alternative interpretation is that teens who were sexually active or anticipating sexual activity in the near future chose to listen to more sexual music than their sexually inactive peers.^{23–25} This alternative explanation could not be ruled out, because the researchers did not know the sequence of these events.

Another limitation of the study by Pardun et al¹⁰ is that it did not consider the specific nature of the sexual content. Because media depictions of sexuality contain a diversity of messages about sex that may affect teens' sexual decision-making and behavior differently (perhaps through the communication of distinct sexual scripts), to treat all sexual content the same may be to overlook potentially important distinctions.

One depiction of courtship and sexual relationships that is common in youth-oriented media (and that provides a very specific sexual script) features sex-driven males competing with one another for females who are viewed as sexual objects or conquests whose value is based on their physical appearance.^{21,26} This portrayal of men as sexually insatiable and women as sexual objects is particularly prevalent in music videos,^{27–29} the frequent viewing of which is associated with stronger endorsement of women as sexual objects³⁰ and more traditional gender role attitudes.^{30–32} Media researchers have speculated that these types of portrayals may promote sexual self-objectification (distancing oneself from one's own desires and actions), thereby promoting early sexual activity as objectified youth ignore their anxieties surrounding sexual initiation.^{30,33} Repeated exposure to these portrayals may also lead to the internalization of perceived gender norms that prescribe sexually degrading behavior as central to male and female gender roles. Although the behavioral effects of exposure to media

portrayals of men as sex driven and women as sexual objects are unknown, endorsement of these types of beliefs is associated with an earlier age of first sexual activity and with more and riskier sexual experiences among both males and females.^{34–36} Thus, portrayals of sexuality that objectify and degrade either gender may affect sexual decision-making and behavior differently from portrayals that do not.

Current Study

This study tests the prospective relationship between exposure to degrading and nondegrading sexual music content and subsequent changes in adolescent sexual behavior. We collected longitudinal data on adolescents' media use and sexual behavior, conducting 3 surveys. Music listening was assessed in the second of these 3 surveys and used to predict initiation of sexual activities in the following 2 years among participants, taking into account sexual experiences before the second survey. This design allowed for the possibility that sexual experience influences teens' selection of sexual music content and accounted for that possibility in testing for the effects of music on sexual behavior. The design also allowed us to take into account baseline characteristics that might contribute both to sexual behavior and exposure to sexual content in music, including several individual and family characteristics. By controlling for these possible confounding variables, we were able to more confidently attribute any differences in teens' sexual behavior to their exposure to sexual content in music.

Because media researchers have often stressed the importance of investigating subgroup differences in the effects of media,^{25,37} we tested for gender and racial group differences in the association between exposure to sexual music lyrics and teens' sexual behavior. Music preferences and interpretation of musical content differ by gender and race,^{6,38–40} as do some effects of media use on teen's sexual attitudes and behaviors.^{33,37,41,42} Conducting gender group comparisons may be especially important when examining the effects of degrading sexual content, because this content is typically gender specific in its messages about expected sexual behavior.

METHODS

Procedure

We conducted a national telephone survey in spring 2001 (T1) and reinterviewed the same group 1 and 3 years later, in the springs of 2002 and 2004 (T2 and T3, respectively). The survey measured media use, sexual knowledge, attitudes, and behavior and a large set of demographic and psychosocial variables known to predict sexual behavior or media use.

Sample Recruitment

Our sample for this study was recruited from a purchased national list of households with a high probability of containing a member aged 12 to 17 years. 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 before conducting an interview with a randomly selected teen from the household. Teens provided verbal assent. Our refusal rate at baseline was 36%, similar to other studies of less sensitive topics. The vast majority of those adults who refused consent cited time constraints rather than a concern with the sexual content of the survey.

Baseline Sample Characteristics and Weights

Without weights, the baseline sample of 2003 teens had demographic characteristics similar to those of all teens in the United States 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 with parents identified higher response rates: (1) in census tracts with higher proportions of blacks, (2) among households where a teen aged 12 to 14 years was present but not randomly selected, and (3) when girls of any age or boys aged ≤ 14 years 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. These nonresponse and poststratification weights were combined to form final baseline weights.

Sample Attrition and Longitudinal Weights

At T2, attrition was 12%. Extensive multivariate modeling with rich baseline response data found no evidence of selective attrition.⁴¹ Seventy-three percent of the baseline sample ($N = 1461$) 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 teens >14 at baseline, boys, 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 of the analyses used these weights, appropriately accounting for their effects on SEs.⁴³

After applying these weights, 47% of T3 respondents were girls, 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 race/ethnicity). At least 1 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 Behavior

Questions assessed behavior with someone of the opposite sex. Intercourse experience at each time point was measured 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 T2, those with intercourse experience also reported the month and year of their first intercourse experience. We used this date to determine the relevant analysis sample: youth who had not had sex by September 2001 (the beginning of the reference period for music listening; see below). At all 3 of the interviews, we also measured lifetime levels of noncoital experience with a scale developed for this study,⁴⁴ based on a measure used by Miller et al.⁴⁵ Adolescents indicated whether they had ever (1) kissed, (2) "made-out (kissed for a long time)," (3) touched a breast/had their breast touched, (4) touched genitals/had their genitals touched, and (5) given oral sex or received oral sex. Items 1 and 3 were asked of all youth; others were asked only if the response was "yes" to the item listed immediately before it. Participants received a score of 1 to 5 reflecting the highest level of noncoital behavior experienced; adolescents who reported none of the noncoital behaviors were included in the lowest category, along with those who had only kissed.

Exposure to Sexual Content in Music

At T2, participants indicated how often (never, sometimes, or a lot) they listened to each of 16 music artists on CDs, tapes, over the Internet, or on the radio "since school started last fall." These 16 artists represented a variety of music genres (eg, teen pop, rap, and alternative rock) and included male and female performers. They were chosen from lists of top billboard artists. We selected those who were featured in teen magazines around the time of the survey and/or those who participated in teen-oriented music and entertainment award shows near the time of survey administration. We created measures of exposure to sexual content in music by linking information from our survey to information about the sexual content of each artist's most recently

released album (before our T2 survey). Two raters independently coded the lyrics, obtained from Internet Web sites, of all songs ($N = 193$) from each of the 16 albums. The unit of analysis was the song. Raters first judged whether a song contained 1 or more references to sexual behavior (implicit or explicit references to intercourse, oral sex, or other sexual acts). For each song deemed to contain ≥ 1 sexual reference, raters then judged whether the song contained only nondegrading references to sex or contained ≥ 1 degrading sexual reference. Thus, these classifications of content were mutually exclusive, and the degrading/nondegrading designation accounted for all of the instances of sexual content. Examples of nondegrading sexual lyrics from our study include: "When my eyes open I wanna see your face/Spendin' my days in your sweet embrace/Just one night with you could set me free/I get next to you and I get dizzy, dizzy/You make me think of things to come/I'm dreamin' day and night of making love," from Ninety-Eight Degrees, "Dizzy."⁴⁶

Examples of degrading sexual lyrics include: "Half the ho's hate me, half them love me/The ones that hate me/Only hate me 'cause they ain't fucked me/And they say I'm lucky/Do you think I've got time/To fuck all these ho's?" from Ja Rule, "Livin' It Up."⁴⁷

For each song containing a sexual reference, raters also judged whether the reference was implicit or explicit and whether the reference was about casual or committed sex. These dimensions strongly overlapped with the degrading/nondegrading distinction. Of songs with degrading sexual lyrics, 71% were judged to contain explicit references to sex, and 96% were judged to be about casual sex. In contrast, 51% of songs with nondegrading sexual lyrics contained explicit references to sex and only 19% were judged to be about casual sex. In our predictive analyses, we chose to focus on the degrading/nondegrading dimension because it was of central theoretical concern and because it seemed to encompass all 3 characteristics (ie, the definition of degrading sexual lyrics strongly implies that they also be explicit and address casual sex).

To establish interrater reliability for classifying the type of content in a song, raters double-coded one third ($n = 63$) of all of the songs. These songs were selected via stratified random sampling, with artists as strata. Interrater reliability was satisfactory (Cohen's κ ranged from 0.74 to 0.92).

For each artist studied, the proportion of songs containing degrading sexual lyrics was calculated by dividing the number of the artist's songs that contained any degrading sexual references by the total number of songs on the artist's album, regardless of their sexual content. Similarly, the proportion of songs containing nondegrading sexual lyrics was calculated by dividing the number of the artist's songs that contained only nondegrading sexual references by the total number of songs on the artist's album (these 2 indices sum to indicate the

proportion of songs with any sexual references). We derived the 2 exposure measures (exposure to degrading sexual content in music and exposure to nondegrading sexual content in music) by weighting each content score by self-reported frequency of listening to each artist and summing across all 16 of the artists. Both exposure measures were standardized to a mean of 0 and an SD of 1.

Total Time Spent Listening to Music

At T2, participants reported the total amount of time they spend listening to music on CDs, tapes, over the Internet, or on the radio during a typical week (0 = no time to 5 = ≥ 10 hours). Because of this statistical control, our sexual content variables should be viewed as reflecting the effect of a high proportion of sexual content relative to other content in one's musical diet, regardless of the total amount of listening.

Covariates

All of the covariates were measured as part of the baseline interview. Gender and race/ethnicity (dummy coded as white versus black, Hispanic, or other) were self-reported. Respondent age, calculated from date of birth, and baseline interview date was measured continuously in years.

We included several indicators of social environment known to predict initiation of coitus. Teens who reported living with both of their 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 = completed graduate or professional degree). Parental monitoring was measured with a 5-item scale (eg, "When you are away from home, your parents know where you are and who you are with"; items rated from 1 = strongly agree to 5 = strongly disagree) developed to predict adolescent risk behavior ($\alpha = .70$).⁴⁸ An additional measure tapped parental prescriptive norms by asking perceived parental response if the respondent 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 (responses of 1 or 2) versus approval or neutrality (responses of 3, 4, or 5). A single 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. We measured perceived friends' approval of sex 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)?"

We also assessed a number of other personal characteristics that are known correlates of adolescent sexual behavior. Mental health ($\alpha = .68$) was assessed with the Mental Health Inventory, a well-validated 5-item scale

tapping affective state over the previous 4 weeks.⁴⁹ Respondents' self-reported grades in school at baseline were used as an indicator of academic performance (1 = mostly As to 5 = mostly Fs). Deviant behavior was measured with 6 items drawn from previous studies of adolescent risk behavior ($\alpha = .65$ in this sample).⁵⁰ Participants indicated how many times in the past 12 months they had: been sent out of class; broken into a house, school, or place of business; skipped school; cheated on a test; damaged something on purpose; or stolen something (1 = not at all, 4 = ≥ 10 times). 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." Sensation seeking, a strong predictor of sexual initiation in a previous study of this sample,⁴¹ was measured with 3 items from the Zuckerman scale ($\alpha = .58$).⁵¹

Finally, we included several indicators of adolescent interest in sex or sexual readiness before music listening to control for the possibility that youth who are considering coital or noncoital activities that they have not yet enacted may listen to more sex-oriented music. These indicators included baseline level of noncoital sexual activity, intentions to have sex in the next year (1 = not at all likely to 5 = extremely likely), expected negative consequences of having sex, and sex self-efficacy. Expected negative consequences ($\alpha = .60$) were measured with a 3-item scale (eg, "If you had sex, you would feel guilty afterward") drawn from a previous study.⁴² Sex self-efficacy was measured with a single 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 scale used in a previous study in which it was shown to have the highest factor loading.⁴²

Analyses

To be included in the current analyses, respondents had to have completed interviews at each of the 3 survey waves ($N = 1390$). Respondents also had to have valid sexual behavior and music exposure data at all 3 of the time points. One hundred forty-eight respondents requested that we skip questions about sexual behavior (an option presented during the interview) at ≥ 1 of the 3 surveys. These respondents had missing data for sexual behavior. To control for sexual behavior before music exposure, the analysis sample for predicting intercourse was restricted to those youth who had never had intercourse ("virgins") before the reference period for the music items (September 2001; see above). Thus, the final sample for these analyses was 938. Tests predicting noncoital behavior included all of the respondents who provided data on sexual behavior at all 3 of the survey waves ($N = 1242$). Because we did not have dates for noncoital behavior, we were not able to control for level of noncoital behavior just before music exposure in

these analyses (analogous to what we did with the analyses predicting intercourse initiation). We did, however, control for the level of noncoital behavior at the time of the baseline survey.

We began by testing simple associations between our T2 music variables and intercourse initiation by T3 and advancement in the level of noncoital behavior between T1 and T3. Because teens who listen to more sexual content in music also listen to more music overall, the music variables are best understood in the context of one another. We, thus, examined all 3 of the music variables (exposure to degrading and nondegrading sexual content and total amount of music listening) simultaneously in these tests. We also tested whether other respondent characteristics might explain any relationship between listening to sexual content and sexual behavior by examining bivariate associations between these characteristics and exposure to sexual content in music at T2, intercourse initiation by T3, and advancement in the level of noncoital behavior between T1 and T3.

We then tested multiple-group path models to look (separately) for gender and racial group differences in the relationships between exposure to sexual content in music and sexual behavior while controlling for the effects of all of the other variables. We were limited to comparing whites and nonwhites in our models that examined racial group differences, because our sample sizes for minority subgroups were too small to obtain reliable estimates of group differences. To test for between-group differences, we first constrained each model parameter separately to be equal across groups. We then calculated the difference between χ^2 statistics for this constrained model and an unconstrained model that allowed for gender or racial group differences and tested each χ^2 difference for significance. A significant effect indicates that the influence of the predictor differs for boys/girls or whites/nonwhites. In examining between-group differences in the path coefficients involving the music variables, we constrained/freed all of the music parameters at once because of their conceptual interdependence.

All of the analyses were conducted in Mplus 3.12 using maximum likelihood for parameter estimation.⁴³ To be certain that our estimates were robust to violations of the assumption of multivariate normality, we estimated SEs using a sandwich estimator and tested the significance of coefficients with the Yuan-Bentler T2* test statistic.⁵²

Missing Data Imputation

Ten covariates were missing in small numbers of cases among those retained through the third wave (0.5%–3.0% for 4 variables and $<0.5\%$ for 6 variables). To avoid bias that listwise deletion of cases with missing data might introduce in our results, we imputed missing data on these predictors.⁵³ Imputation was based on

random draws corresponding to model-based predicted probabilities.

RESULTS

In our weighted longitudinal sample, 17% had ever had intercourse at baseline, 29% at the first follow-up assessment, and 53% at the second follow-up assessment. Rates of intercourse observed in this sample are similar to those found in other national surveys with household sampling frames (eg, the National Survey of Family Growth⁵⁴).

Content Analysis

Table 1 shows the musical genre of each of the 16 artists whose lyrics we analyzed, the number of songs analyzed per artist, the percentages of each artist's songs containing any sexual references, and the percentage of each artist's songs containing sexually degrading lyrics. As the table shows, all but 3 artists had 1 or more songs that made reference to sexual behavior. Sexual lyrics were found in music by artists of all of the genres but were most prevalent in the songs of rap and rap metal artists. The percentage of songs with sexual lyrics ranged from 0% to 71% across the 16 artists. The percentage of songs that contained sexually degrading lyrics ranged from 0% to 70% across artists, with the highest concentration of degrading sexual lyrics observed among the songs of rap and rap metal artists.

Before controlling for other variables, greater exposure to music with degrading sexual content at T2 was strongly and positively related to initiation of intercourse by T3 and advancement of noncoital activity between baseline and T3 (see Table 2). In contrast, exposure to music with nondegrading sexual content was negatively associated with intercourse initiation and unassociated with advancement of noncoital activity. Greater

exposure to music in general was also related to teens' sexual behavior. Teens who spent more time listening to music were more likely than those who spent less to initiate intercourse and to progress in their noncoital activity.

Simple associations between other respondent characteristics and both intercourse initiation and advancement of noncoital behavior are also shown in Table 2. As can be seen, almost all of these factors were significantly related to advances in sexual behavior. Most were also associated with exposure to degrading and nondegrading sexual music content at T2, although more characteristics were associated with degrading than with nondegrading music exposure. Some of these variables could, therefore, account for the observed relationships between exposure to sexual music content and later sexual behavior. To test for music effects independent of these variables and to increase the sensitivity of the analyses predicting sexual behavior, we entered all of these variables into our multivariate models as covariates.

We first tested multiple-group models predicting intercourse initiation and noncoital activity by gender and by race but found no differences in the associations between music exposure and sexual advancement for boys versus girls or whites versus nonwhites. Thus, we report results of a single-group multiple regression analysis (with race and gender included among the covariates) in Table 3. As this table shows, the more teens listened to degrading sexual music content, the more likely they were to subsequently initiate intercourse and progress in their noncoital activity. These music effects held, even though 18 other predictors of sexual behavior were taken into account. Exposure to nondegrading sexual music was unrelated to changes in sexual behavior in these multivariate models.

TABLE 1 Musical Genre, Number of Songs, and Sexual Content of Songs by Each Artist Included in the Content Analysis

Artist No.	Musical Genre	Number of Songs per Album	% of Songs With Sexual Content	% of Songs With Degrading Sexual Content
1	Hard rock	12	50	0
2	Alternative rock	15	33	0
3	Alternative rock	11	0	0
4	Rap-rock	14	64	43
5	Rap-rock	11	63	45
6	Rap	13	70	70
7	Rap	17	71	59
8	Rap	13	0	0
9	Rap-metal	14	21	14
10	R&B	12	42	17
11	Country	12	0	0
12	Country	13	8	0
13	Teen pop	12	33	0
14	Teen pop	13	23	0
15	Teen pop	12	42	0
16	Teen pop	13	23	0

TABLE 2 Associations Between Candidate Predictors and Exposure to Sexual Lyrics and Sexual Behavior

Predictor Variable	Exposure to Degrading Sexual Lyrics at Time 2 ^a (n = 1390)		Exposure to Nondegrading Sexual Lyrics at Time 2 ^a (n = 1390)		Intercourse Initiation by Time 3 (n = 981)		Level of Noncoital Sex at Time 3 (Controlling for Time 1 Level) (n = 1242)	
	β	P	β	P	β	P	β	P
Music exposure variables								
Time 2 exposure to degrading sexual lyrics					.36	<.001	.20	<.001
Time 2 exposure to nondegrading sexual lyrics					-.14	.02	-.05	.13
Time 2 total time spent listening to music					.21	<.001	.10	.002
Covariates								
Age, y	-.01	.84	.01	.79	.29	<.001	.04	.21
Female gender	-.03	.44	.24	<.001	-.11	.02	-.10	.002
Black (vs non-Hispanic white)	.24	<.001	-.05	.16	.10	.07	.01	.70
Hispanic (vs non-Hispanic white)	.13	<.001	-.01	.91	.06	.36	-.02	.60
Other race (vs non-Hispanic white)	.06	.05	.03	.44	.09	.05	.02	.51
Lives with both parents	-.18	<.001	-.10	.02	-.11	.07	-.04	.19
High parent education	-.18	<.001	-.05	.20	-.09	.10	-.06	.03
Time 1 parental monitoring	-.07	.04	.07	.06	-.30	<.001	-.13	<.001
Time 1 perceived parent disapproval of sex	-.10	.003	-.01	.86	-.06	.13	.03	.17
Time 1 has mostly older friends	.04	.32	.02	.61	.12	.02	.00	.96
Time 1 perceived friend approval of sex	.17	<.001	-.08	.02	.39	<.001	.14	<.001
Time 1 good mental health	-.06	.07	-.08	.02	-.09	.07	-.02	.40
Time 1 low school grades	.17	<.001	-.01	.73	.24	<.001	.08	.003
Time 1 deviant behavior	.15	<.001	-.10	.004	.35	<.001	.11	<.001
Time 1 religiosity	.03	.38	.12	<.001	-.14	.002	-.11	<.001
Time 1 sensation seeking	.14	<.001	.04	.25	.26	<.001	.16	<.001
Time 1 level of noncoital activity	.22	<.001 ^b	.04	.27 ^b	.47	<.001 ^c	.57	<.001
Time 1 intentions to have sex	.26	<.001	.00	.98	.44	<.001	.12	.002
Time 1 expected negative consequences	-.17	<.001	.09	.02	-.27	<.001	-.12	<.001
Time 1 sex self-efficacy	.11	.003	.02	.52	.38	<.001	.17	<.001

^a Tests for exposure to degrading sexual lyrics control for exposure to nondegrading sexual lyrics and total music exposure. Tests for nondegrading sexual lyrics control for exposure to degrading sexual lyrics and total music exposure.

^b Because of nonimputed missing values on time 1 noncoital activity, n for this analysis was 1298.

^c Because of nonimputed missing values on time 1 noncoital activity, n for this analysis was 938.

DISCUSSION

To our knowledge, this is the first study to test longitudinal associations between exposure to sexual content in music lyrics and changes in sexual behavior. Our results provide evidence that such exposure is related to advances in a range of sexual activities among adolescents, including intercourse and noncoital behavior. These associations were evident among male and female listeners and among whites and nonwhites and held even after accounting for a wide variety of other personal and social factors correlated with adolescent sexual behavior and with exposure to sexual lyrics. These findings contribute to the emerging body of evidence of the role of a variety of media in the sexual socialization of youth.^{41,55}

Our study also identified an important limitation to music effects. Exposure to sexual lyrics was not related to changes in sexual behavior when those lyrics were not sexually degrading. Although there was a significant bivariate relationship between exposure to nondegrading sexual lyrics and intercourse initiation, this relationship disappeared when covariates, including exposure to degrading lyrics, were controlled. This suggests quite strongly that the influence of sexual music content on teens' sexual development is specific to content that is

sexually degrading. In our coding scheme, lyrics classified as degrading depicted sexually insatiable men pursuing women valued only as sex objects. These types of portrayals objectify and degrade women in ways that are obvious but do the same to men by depicting them as sex-driven studs whose individual desires are subsumed in their gender role. Adolescents who listen to a lot of music containing these objectifying and limiting characterizations of sexuality progress more quickly in their sexual behavior, regardless of their race or gender.

Our results suggest that the relationship between exposure and behavior may be causal in nature, because we controlled for teens' previous sexual experience, as well as factors like parental monitoring, religiosity, and deviance; however, our correlational data do not allow us to make causal inferences with certainty. If the relationship is causal, listening to music with degrading sexual content may have important public health and other societal consequences, because those who initiate sex early have more STDs and unplanned pregnancies.⁵ It is important to point out, however, that at the time of the third survey, about half of our sample had become legal adults (18–20 years); initiation of intercourse in this

TABLE 3 Multivariate Regression Analyses Predicting Intercourse Initiation and Advancement in Noncoital Sexual Behavior

Predictor Variable	Intercourse Initiation by Time 3 (n = 938)		Level of Noncoital Sex at Time 3 (n = 1242)	
	β	P	β	P
Time 2 exposure to degrading sexual lyrics	.23	<.001	.18	<.001
Time 2 exposure to nondegrading sexual lyrics	-.06	.29	.00	.89
Time 2 total time spent listening to music	.09	.04	.06	.05
Age, y	.09	.08	.04	.27
Female gender	.03	.59	-.06	.08
Black (vs non-Hispanic white)	.03	.52	-.02	.57
Hispanic (vs non-Hispanic white)	-.01	.86	-.05	.09
Other race (vs non-Hispanic white)	.09	.04	.01	.77
Lives with both parents	-.02	.64	-.01	.66
High parent education	-.05	.27	-.05	.06
Time 1 parental monitoring	-.04	.39	-.08	.005
Time 1 perceived parent disapproval of sex	.04	.33	.05	.02
Time 1 has mostly older friends	.07	.07	-.02	.59
Time 1 perceived friend approval of sex	.12	.03	.04	.29
Time 1 good mental health	.03	.57	.01	.60
Time 1 low school grades	.12	.02	.02	.51
Time 1 deviant behavior	.05	.32	.02	.45
Time 1 religiosity	-.06	.14	-.09	<.001
Time 1 sensation seeking	.03	.59	.09	.003
Time 1 level of noncoital activity	.21	<.001	.36	<.001
Time 1 intentions to have sex	.08	.17	-.02	.73
Time 1 expected negative consequences	.02	.70	.00	.93
Time 1 sex self-efficacy	.14	.01	.12	<.001

group would not be considered early according to US norms and might be considered healthy.

That the effect of sexual music content on adolescents' sexual behavior is specific to degrading lyrics suggests something about the process by which this effect occurs. Musicians who incorporate this type of sexual imagery in their songs are not simply modeling an interest in healthy sexual behavior for their listeners; they are communicating something specific about what are appropriate sexual roles for men and women. These lyrics are likely to promote acceptance of women as sexual objects and men as pursuers of sexual conquest.^{21,33} Teens who are repeatedly exposed to and accept these messages may come to see these as appropriate characterizations for themselves and enact these stereotyped gender roles in their sexual behavior. Despite the fact that degrading sexual lyrics are particularly demeaning in their treatment of women, they affect adolescent boys and girls similarly. This could have worrisome implications for what both genders come to expect from their own sexual partners and experiences. It may be that girls who are repeatedly exposed to these messages expect to take a submissive role in their sexual relationships and to be treated with disrespect by their partners. If so, these expectations may have lasting effects on their relationship choices, a possibility that warrants further investigation. Boys, on the other hand, may come to interpret reckless male sexual behavior as

"boys being boys" and dismiss girls' sexual preferences and desires as inconsequential. Our research is unable to test for these effects but does suggest that degrading sexual lyrics do more than "go in one ear and out the other."

We have explained the effect of degrading sexual lyrics as operating through the acquisition of a specific sexual script in which sexually aggressive men treat women as valued only for the sexual pleasure that they can provide. There are, however, other characteristics of degrading sexual lyrics that may contribute to their effects. For example, degrading sexual lyrics are more likely than nondegrading sexual lyrics to be explicit and to focus on casual rather than committed sex. In the future, researchers may want to distinguish the effects of these dimensions to determine whether multiple processes operate to determine teen sexual behavior.

Lyrical content may be only part of what drives the associations found in this study. For example, teens who listen to music by artists who use degrading sexual imagery in their songs probably also watch music videos by these artists, in which case the effect of these songs is likely to be greatly enhanced.^{31,32,56} Adding a visual portrayal of sex may reinforce sexual lyrics not only by increasing the number of sexual cues in the message⁵⁷ but also by aiding the interpretation of the meaning of a song and clarifying ambiguous lyrics.⁵⁸ Other than listening to music and watching videos by music artists,

teens may also read about them in music magazines, attend live performances, and otherwise expose themselves to the messages that these artists portray. The music and the artists form a consistent package that many youth identify with strongly.^{7,23,59,60} Not all youth will identify with these artists, however, and not all youth will interpret their lyrics in the same way. Interpretation probably depends on many factors, such as age, race, gender, social background, where youth are in their sexual development, and how involved they are in the music to which they listen.^{25,37} Future work is needed to elucidate the meanings assigned to degrading sexual lyrics by male and female listeners and how these may explain the associations that we have observed.

We also observed an association between time spent listening to music in general and changes in sexual behavior. The more time teens spent listening to music, the more likely they were to advance in their noncoital sexual behavior and to initiate intercourse. This was true although the sexual content of the music was controlled for statistically. It may be that listening to popular music, regardless of its content, results in heightened physiologic arousal that, through a process of excitation transfer,⁶¹ incites sexual behavior among teens. Alternatively, time spent listening to music may be a proxy for a covariate that we did not measure in our survey, such as use of leisure time. It is likely that youth who spend a great deal of time listening to music also spend more time at parties and clubs and less time working, studying, interacting with their families, or watching TV. This difference may create greater opportunities to meet potential sexual partners and/or pressure to engage in sexual activity. A third alternative was alluded to earlier in our recommendation for caution regarding interpretations of the degrading music lyric effect. It may be something about popular musical artists other than their lyrics that produces a correlation between music listening and sexual advancement. The artists may project sexual images, lifestyles, or otherwise adult behavior that youth identify with and emulate, and this in turn may result in progressing sexual activity.

This underscores an important limitation to our study. Although we accounted for many individual and environmental factors that might otherwise explain the relationship between exposure to sexual music content and adolescent sexual behavior, including sexual interest, readiness, and behavior before music exposure, it is possible that we have overlooked some variable that may account for the association. A second limitation concerns the level of detail in our coding scheme. We coded 2 general categories, sex and sexual degradation, that comprise a set of more specific attitudes and behaviors that we did not attempt to distinguish (eg, oral sex, anal sex, intercourse, and behavior toward committed versus casual partners). We also coded for sexual content at the level of the song rather than coding for discrete

references to sexual behavior, as has been done in some recent media content analyses.^{10,62} Future research should undertake a more detailed analysis of music sexual content to confirm that our findings are robust to this limitation. A related shortcoming is that we only asked participants about 16 musical artists. Although these artists were popular with teens at the time of our survey and represent the musical genres that teens listen to most commonly,⁶ a measure that included a broader sample of artists, including non-English-speaking artists, would likely be more sensitive and may have shown stronger effects for music exposure than those reported here.

We were also limited by our inability to distinguish among racial and ethnic minorities in our multiple-group comparisons. Research has shown that patterns of media use and interpretation of media content may differ across racial/ethnic subgroups. The vast majority of nonwhites in our sample were black and Hispanic youth. Both of these groups had significantly more exposure to degrading sexual content than did whites, and neither group's exposure to nondegrading sexual content differed from that of white youth. These findings are consistent with research showing that black and Hispanic youth listen to more rap music,^{7,63,64} the genre with the highest concentration of degrading content in our analysis. Although black and Hispanic youths' amounts of exposure to sexual content, relative to whites', were similar, their interpretation of this content may nevertheless have differed. Future research should attempt to discriminate among other minority groups to determine whether the effects observed in our study fail to hold among certain racial and ethnic groups.

Finally, we were not able to fully control for previous sexual experience when predicting advances in noncoital behavior. Because we did not know the precise dates on which teens advanced from one level of noncoital behavior to the next, we were limited to controlling for noncoital behavior at baseline, ~6 months before the reference period for music exposure. Because adolescents' music choices are likely to be shaped, in part, by their level of sexual experience,²³⁻²⁵ we may have overestimated the relationship between exposure to degrading sexual content and advances in noncoital behavior. Nonetheless, the analyses presented go beyond a simple cross-sectional design, and our prediction of intercourse is not affected by ambiguity in timing.

These limitations notwithstanding, our findings suggest a need for intervention. Reducing the amount of degrading sexual content in popular music, or reducing young people's exposure to music with this type of content, could delay initiation of intercourse and related activities. This, in turn, may reduce sexual risk behavior and sexual regret. Intervention possibilities include reaching out to parents of adolescents, to teens, and to the recording industry. Parents could be encouraged to

monitor the type of music to which their children are exposed, set limits on what they can purchase and listen to, and be careful not to listen to sexually degrading music when children are around. Parents could also be encouraged to discuss the sexual content of music with their children, offering their own perspectives on the sexual themes to which their children are exposed. Through media education, teens could be made aware of the ways in which sex is depicted and perhaps distorted in the music to which they are exposed and develop skills for listening to and thinking about the sexual messages of music in a more critical way. Finally, the recording industry could be made aware of the potential negative impact of sexually degrading music. Additional research, as well as feedback from stakeholders, is needed to determine which of these strategies is most appropriate and likely to meet with success. Future research should also move beyond the examination of intercourse initiation to investigate directly the psychological and public health consequences implied by early sexual initiation (eg, sexual regret, number of sexual partners, unplanned pregnancies, and sexually transmitted infections). Such research would provide important evidence regarding the connection between adolescent sexual behavior and exposure to degrading sexual music content while also suggesting ways to mitigate adverse outcomes.

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Exposure to Degrading Versus Nondegrading Music Lyrics and Sexual Behavior Among Youth

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