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## Exposure to Sexual Lyrics and Sexual Experience Among Urban Adolescents

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### Abstract

**Background**—Two thirds of all sexual references in music are degrading in nature, yet it remains uncertain whether these references promote earlier sexual activity. The purpose of this study was to determine if exposure to lyrics describing degrading sex in popular music is independently associated with sexual behavior in a cohort of urban adolescents.

**Methods**—All ninth-grade health students at three large urban high schools completed in-school surveys in 2006 and 2007. Participants' exposure to lyrics describing degrading sex was computed with overall music exposure and content analyses of their favorite artists' songs. Outcomes included sexual intercourse and progression along a noncoital sexual continuum. Multivariable regression was used to assess independent associations between exposure to lyrics describing degrading sex and outcomes.

**Results**—The 711 participants were exposed to 14.7 hours each week of songs with lyrics describing degrading sex ( $SD=17.0$ ). Almost one third of participants ( $n=216$ ) had previously been sexually active. Compared to those with the least exposure to lyrics describing degrading sex, those with the most exposure were more than twice as likely to have had sexual intercourse ( $OR=2.07$ ; 95%  $CI=1.26, 3.41$ ), even after adjusting for all covariates. Similarly, among those who had not had sexual intercourse, those in the highest tertile of exposure to lyrics describing degrading sex were nearly twice as likely to have progressed along a noncoital sexual continuum ( $OR=1.88$ ; 95%  $CI=1.23, 2.88$ ) compared to those in the lowest tertile. Finally, the relationships between exposure to lyrics describing nondegrading sex and sexual outcomes were not significant.

**Conclusions**—This study supports an association between exposure to lyrics describing degrading sex in popular music and early sexual experience among adolescents.

### Introduction

Early sexual intercourse and the early progression of other sexual behaviors are of concern because of their direct relationship to sexually transmitted infections<sup>1–4</sup> and costly, unwanted teenage pregnancies.<sup>4–6</sup> Recent data indicate that one fourth of all female

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adolescents in the U.S.—and one half of African-American female adolescents—have sexually transmitted infections.<sup>7</sup> More than 750,000 American teenagers become pregnant each year,<sup>8</sup> giving the U.S. one of the highest rates of teenage pregnancy in the developed world.<sup>9</sup>

During the crucial adolescent years, young people in the U.S. are exposed to 2.4 hours of music per day, or >16 hours per week.<sup>10</sup> There are few limits to this access to music; 98% of children and adolescents live in homes with both radios and CD/MP3 players, and 86% of those aged 8–18 years have CD/MP3 players in their bedrooms.<sup>10</sup> These figures have increased substantially over the past decade.<sup>10,11</sup>

More than one third of popular songs contain explicit or strongly implied references to sexual activity,<sup>12</sup> and there is strong theoretical and initial empirical support that exposure to such media may lead to early sexual activity.<sup>13,14</sup> According to the social cognitive theory,<sup>15</sup> people learn not only by direct experience but also by exposure to modeled and rewarded behavior, such as that represented in popular music.<sup>15–17</sup> Music is well known to connect deeply with adolescents and to influence identity development, perhaps more so than any other entertainment medium.<sup>13,18–20</sup>

References to sexual intercourse in popular music lyrics are generally either degrading or nondegrading (Table 1). Degrading sex is defined as sex that (1) is based only on physical characteristics and (2) contains a power differential instead of being mutually consensual.<sup>12,21,22</sup> Degrading references constitute two thirds of all sexual references in popular music,<sup>12</sup> and in particular may promote early sexual activity. This is because they may encourage youth to play out the described roles (sex-driven male partner and acquiescent female partner) rather than resolving their true desires and anxieties surrounding sexual activity.<sup>14,21</sup>

Initial reports suggest that those exposed to more-degrading sexual references in popular music lyrics have greater odds of initiating sexual experimentation at a younger age,<sup>21</sup> but there is a need for replication of these results using varied methodologies and populations. In particular, these findings should be confirmed among African-American and socioeconomically disadvantaged populations. Although these individuals are at greatest risk for the undesirable sequelae of early intercourse,<sup>7</sup> prior work in this area has not focused on these more at-risk populations.<sup>21</sup> Additionally, the measurement of exposure to sexually oriented lyrics presents an important challenge for researchers. Whereas prior work has measured exposure to sexual lyrics with Likert-type checklists,<sup>21</sup> it may be valuable to confirm those findings when using more-intensive information—generated directly by students—that is related to music exposure.

The purpose of this study was to determine if exposure to lyrics describing degrading sex is independently associated with sexual behavior in an urban, socioeconomically disadvantaged cohort of adolescents, even when using an intensively generated assessment of exposure to sexually descriptive lyrics. It was hypothesized that, for both young men and women, exposure to lyrics describing degrading sex in popular music would be independently associated with early sexual experience. It also was hypothesized that exposure to lyrics describing nondegrading sex would not be significantly linked to prior sexual experience.

## Methods

### Design, Setting, and Participants

This cross-sectional analysis used baseline data from a randomized trial comparing two different antismoking programs. For this study, all students enrolled in ninth-grade health classes at three large high schools located in urban, low-income areas of Pittsburgh PA completed a survey in 2006 and 2007 ( $n=857$ ). Overall, approximately 50% of students at these schools are African American; more than half of students receive free or reduced-cost school lunches, and the student body is equally divided by gender.

### Sample

Of the 894 students who were eligible during the first 2 years of data collection (i.e., they were ninth-grade health students in one of the three target schools during that time), 857 (96%) completed the survey. Of those, 711 had complete exposure data (i.e., at least one of their three favorite artists performed one of *Billboard* magazine's top songs during the years 2005–2006). This represented 80% of those eligible. The final sample contained 54% female students and 56% African-American students. The average age was 15.0 years ( $SD=0.8$ ; range: 13–18; Table 2).

### Procedures

The study was approved by the University of Pittsburgh IRB. Students provided assent on computer terminals, and parents were informed about the survey and were offered the opportunity to refuse participation. Students entered all information directly onto computer terminals in school computer laboratories. In the few instances when there were not sufficient computer terminals, students used paper copies of the survey. They did not enter their names or any other unique identifiers.

### Measures

**Independent variables: exposure to lyrics describing degrading and nondegrading sex**—Students reported (1) the number of hours per day that they listen to music and (2) their favorite musical artists. Students were asked to estimate separately their exposure to popular music on weekdays, Saturdays, and Sundays, because prior research demonstrates that these exposures can be very different from one another.<sup>10,11</sup> Through a detailed content analysis,<sup>12,23</sup> the percentage was calculated of each artist's most popular songs that contain lyrics describing degrading sex. An exposure score for lyrics describing degrading sex was then computed by multiplying each student's hours of music exposure by the percentage of his or her favorite artist's songs that contain lyrics describing degrading sex. Finally, that score was divided into tertiles: low exposure, medium exposure, and high exposure. Students reported in order their three favorite artists, whose names they typed in blank spaces (i.e., they did not select from a list). If a first-choice favorite artist was not represented in the database of top popular artists, then the second- or third-choice favorite was used as necessary.

A similar algorithm was used to estimate exposure to lyrics describing nondegrading sex. However, such exposure could not be divided into tertiles, because only 20% of the sample chose favorite artists who sang about nondegrading sex. This was expected for two reasons: these artists are less popular among young people, and, compared with songs portraying degrading sex, far fewer songs are produced that portray nondegrading sex.<sup>12</sup> Thus, to estimate exposure to lyrics describing nondegrading sex, a dichotomous variable was developed to distinguish those songs with lyrics describing nondegrading sex and those without.

Methods for the content analysis have been previously described in detail.<sup>12,23</sup> In brief, two coders independently analyzed for sexual material the top 535 songs from 2005 and 2006 according to *Billboard* magazine's year-end charts. If there were multiple song versions (e.g., edited or explicit), the version that *Billboard* magazine reported had the greatest exposure was the one coded. First, the coders used a dichotomous variable to indicate if sexual intercourse—defined for this analysis as penile–vaginal sex, penile–anal sex, or oral sex—was either explicit or implicit. Then, a separate variable was used by each coder to classify songs with sexual activity as either degrading or nondegrading. Table 1 contains examples of degrading and nondegrading sexual references. According to the Landis and Koch framework<sup>24</sup> for  $\kappa$  values, initial coders had moderate agreement on sexual intercourse ( $\kappa=0.46$ ) and substantial agreement on degrading versus nondegrading sexual intercourse scores ( $\kappa=0.71$ ).<sup>24</sup> After an iterative process of adjudication, additional training, and codebook clarification, coders agreed on all final codes.

**Dependent variables: sexual behavior**—Sexual behavior was measured in two ways. First, a dichotomous measure indicated whether the participant had ever had sexual intercourse (yes versus no). For the survey, sexual intercourse was defined as *when a boy puts his penis in a girl's vagina*. A validated scale was also used to measure an adolescent's progression along a noncoital sexual continuum.<sup>25</sup> The adolescent received a score of 0 if he or she had never kissed; 1 if he or she had kissed only; 2 if he or she had “made out” (defined for the participant in parentheses as *kissed for a long time*); 3 if the respondent had touched breasts or had breasts touched; 4 if he or she had touched genitals or had genitals touched; and 5 if he or she had given or received oral sex.<sup>25</sup>

**Covariates**—Data were collected on a number of sociodemographic characteristics that have been related to sexual intercourse in prior studies. These included age, gender, race, maternal education, and grades. Items were also included from validated scales measuring two dimensions of authoritative parenting,<sup>26</sup> sensation seeking,<sup>27</sup> and rebelliousness.<sup>28</sup> All covariates are listed in Tables 2 and 3.

## Analysis

Descriptive analyses were used to summarize sample characteristics across sexual outcomes. Multivariable analyses were used to assess associations between independent variables (exposure to lyrics describing degrading and nondegrading sex) and sexual behavior (intercourse and, for those who had not had intercourse, progression along a noncoital sexual continuum). Logistic regression was used for the dichotomous variable (intercourse), and ordered logistic regression was used for the ordered categorical outcome (noncoital sexual continuum). By definition, analyses related to the noncoital sexual continuum involved only participants who did not report prior sexual intercourse ( $n=475$ ). The primary multivariable models controlled for all covariates that had bivariate relationships with the outcome at or below the threshold of  $p<0.15$ . Additionally, to determine the robustness of results, all logistic regression analyses were conducted using stepwise backward regression, and all analyses were conducted using the independent variable (exposure to lyrics describing degrading sex) as continuous rather than categorical. For the analyses involving the ordered categorical outcome (noncoital sexual continuum), the proportional odds assumption was tested, and it was not violated.<sup>29</sup>

In multivariable analyses, possible interactions between exposure to lyrics describing degrading sex and age, gender, and race were tested. Participants with missing data were not included in the analysis. For all analyses, a two-tailed  $\alpha$  of 0.05 was used to define significance. Analyses were conducted in 2008.

## Results

Participants were exposed to an average of 31.0 hours of popular music per week ( $SD=21.1$ ) and an estimated 14.7 hours each week of songs with lyrics describing degrading sex ( $SD=17.0$ ). Thirty percent ( $n=216$ ) of the 711 participants had previously had sexual intercourse. Higher exposure to lyrics describing degrading sex, older age, male gender, African-American race, lower grades, higher sensation seeking, and higher rebelliousness were all associated with having had sexual intercourse (Table 2). However, higher exposure to lyrics describing nondegrading sex was not associated with intercourse ( $p=0.67$ ). The 475 participants who had not had sexual intercourse reported a range of behaviors, with most at the stage in which they had touched breasts or had breasts touched. Higher exposure to lyrics describing degrading sex was associated with progression along the noncoital sexual continuum ( $p=0.01$ ). However, exposure to lyrics describing nondegrading sex was not associated with progression along the noncoital sexual continuum ( $p=0.76$ ).

In analyses that controlled for all covariates that had bivariate relationships with the outcome at or below the threshold of  $p<0.15$ , exposure to lyrics describing degrading sex was independently associated with both sexual outcomes (Table 3). Compared to those in the lowest tertile, those with the most exposure to lyrics describing degrading sex had greater odds for having had sexual intercourse (OR=2.07; 95% CI=1.26, 3.41). Likewise, compared to those in the lowest tertile, those with the most exposure to lyrics describing degrading sex had greater odds for having progressed further down the noncoital sexual continuum (OR=1.88; 95% CI=1.23, 2.88).

However, exposure to lyrics describing nondegrading sex was not significantly related to either sexual outcome. Those with exposure to such lyrics did not have significantly higher adjusted odds of having been sexually active (OR=1.15; 95% CI=0.70, 1.89) or having progressed along the noncoital sexual continuum (OR=1.44; 95% CI=0.94, 2.22).

In the models presented in Table 3, other factors independently associated with intercourse included older age, male gender, African-American race, lower maternal education, lower grades, higher sensation seeking, and higher rebelliousness. Only male gender, sensation seeking, and rebelliousness were independently associated with progression along the noncoital sexual continuum in these multivariable analyses.

There were no significant interactions between exposure to degrading sexual lyrics and age, gender, or race in any of the multivariable models. All results were similar when analyses were conducted with stepwise backward logistic regression and when exposure to lyrics describing degrading sex and exposure to lyrics describing nondegrading sex was modeled as a continuous variable.

## Discussion

This study demonstrates that, among this sample of young adolescents, high exposure to lyrics describing degrading sex in popular music was independently associated with higher levels of sexual behavior. In fact, exposure to lyrics describing degrading sex was one of the strongest associations with sexual activity in these models. In contrast, exposure to lyrics describing non-degrading sex in popular music was not associated with greater risk of sexual activity in any of the models.

These findings build on those of previous studies<sup>13,30</sup> suggesting that exposure to sex in media messages may be a risk factor for early sexual progression. Specifically, these results support previous findings<sup>21</sup> that exposure to lyrics describing degrading sex in particular may be a stronger risk factor for early sexual progression than exposure to lyrics describing

nondegrading sex. It is instructive that this study's results were similar to those in the other studies,<sup>13,21,30</sup> despite this sample's having a greater percentage of African-American and socioeconomically disadvantaged participants and its using a more-intensive algorithm to estimate exposure to lyrics describing degrading and nondegrading sex.

Although music lacks the visual elements of film and television, there are reasons why references in popular music may be as potent in relationship to sexual behavior. First, exposure to popular music is rapidly increasing, whereas exposure to films is much lower, and exposure to television is decreasing.<sup>10</sup> Also, music is known to be highly related to personal identity, and young people often model themselves after musical figures in terms of dress, behavior, and identity.<sup>20,31,32</sup> Further studies with rigorous methodology will be necessary to more carefully determine the relative potency of exposure to lyrics describing sex (both degrading and nondegrading) in music.

The relationship between exposure to lyrics describing degrading sex and sexual experience held equally for both young men and women, which is consistent with the social cognitive theory.<sup>15</sup> Lyrics describing degrading sex tend to portray sex as expected, direct, and uncomplicated. Such descriptions may offer scripts that adolescents feel compelled to play out, whether they are cast in the role of either the female or the male partner. However, lyrics describing nondegrading sex may portray more of the complications and complexities of sexual activity, making it less likely that young people will simply and blindly imitate what they hear. Similarly, repeated exposure to lyrics describing degrading sex in music may desensitize individuals to real-life violence and power differentials related to sex. This possibility is consistent with prior studies<sup>15,33–35</sup> showing that media messages containing sexual aggression toward women tend to desensitize both men and women to real-life sexual aggression.

These findings may have implications for sexual health education. Given that exposure is common to lyrics describing degrading sex (>14 hours each week), sexual health lessons in school and in the community are likely to be dwarfed in young people's minds by the lessons they learn through the lyrics' representations of sex. It may be useful for health educators, health professionals, curriculum designers, parents, and community-group leaders to become familiar with the messages that young people receive about sex in their music, so that they can more effectively counter these messages. Innovative interventions and creative techniques are needed to encourage young people to think critically about the veracity of the sex-related messages they receive in their media and to understand the consequences of early sexual behavior. One way of doing this may be to include more media literacy—whereby young people learn to analyze and evaluate media portrayals of sex—in sexual health education.<sup>36–38</sup>

It will be important to evolve research in this area to maintain pace with technologic advancement; for example, MP3 players now have video capability. This study focused only on lyrics. Although it is likely that those exposed to lyrics describing degrading sex similarly are exposed to images depicting it, there may be value for future analyses to more carefully assess the relationship between audio and visual messages.

This study was limited by its cross-sectional design. The associations found between measures of music exposure and sexual behavior do not imply causality. Although it is theoretically plausible that media exposure precedes sexual behavior, it is also possible that engagement in sexual behavior causes young people to seek out media with particular sexual messages. Thus, longitudinal research is needed to more completely explore these associations. This effort was also limited in that the estimated exposure to lyrics describing degrading sex was based on only one favorite artist. It is possible that an adolescent's

favorite artist does not represent total exposure, either because the adolescent lacks access to that artist's music (for financial or other reasons) or because the adolescent listens to a wide variety of music. However, because adolescents generally listen to a narrow range of musical genres,<sup>10</sup> it is likely that the content of an adolescent's favorite artist is largely representative of his or her overall exposure. Finally, it should be noted that the coding of elements such as sexual behavior can be subjective. For this reason, this study employed a complex coding methodology and ensured that inter-rater agreement was adequate.

In summary, adolescents are heavily exposed to lyrics describing degrading sex in popular music, and this exposure is associated with early sexual experience among them in an urban population of youth at high risk for risky sexual behavior. These results provide further support for the need for additional research and educational intervention in this area.

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**Table 1**

Examples of popular music lyrics describing degrading and nondegrading sex

Type of sex	Lyrics
<b>Degrading</b>	<p>Get on top then get to bouncing round like a low rider</p> <p>I'm a seasoned vet when it come to this shit</p> <p>After you work up a sweat you can play with the stick</p> <p>I'm tryin to explain baby the best way I can</p> <p>I melt in your mouth girl, not in your hands</p> <p>Ay bitch! Wait 'til you see my dick</p> <p>Wait 'til you see my dick</p> <p>Ay bitch! Wait 'til you see my dick</p> <p>I'm gonna beat that pussy up</p>
<b>Nondegrading</b>	<p>Come a little closer baby, I feel like strippin' it down</p> <p>Back to the basics of you and me</p> <p>And what makes the world go round</p> <p>Every inch of you across my skin</p> <p>I wanna be stronger than we've ever been</p> <p>I'm here to cater to you</p> <p>Any thing that you want me to do I'll do it</p> <p>Cause I'll be your lover</p> <p>I'll be your lover</p> <p>I'll be your best friend</p> <p>Tell me what I gotta do</p> <p>Tell me what I gotta do and I'll do it</p>

Table 2

Sample characteristics by ever having had intercourse

	<i>n</i> =711	Has had intercourse <i>n</i> =216 (%)	<i>p</i>
<b>Exposure to lyrics describing degrading sex</b>			<0.001
Lowest tertile (0–2.7)	231	20.6	
Middle tertile (2.8–17.5)	234	30.3	
Highest tertile (17.6–70)	231	44.6	
<b>Exposure to lyrics describing nondegrading sex</b>			0.67
No	576	32.6	
Yes	135	30.7	
<b>Age (years)</b>			<0.001
≤15	439	26.4	
>15	272	41.6	
<b>Gender</b>			<0.001
Male	328	42.7	
Female	383	23.3	
<b>Race</b>			
White	281	25.7	0.003
Black	395	39.5	<0.001
Other	103	25.0	0.11
<b>Maternal education</b>			0.11
Did not graduate high school	110	40.8	
Graduated high school but not college	268	32.1	
≥College degree	333	29.6	
<b>Grades</b>			<0.001
A's and B's	382	19.6	
<B's	323	47.1	
<b>Demanding parenting</b>			0.07
Lowest tertile (0–2)	362	36.1	
Middle tertile (2.1–2.3)	124	30.4	
Highest tertile (2.4–3)	218	26.8	
<b>Responsive parenting</b>			0.07
Lowest tertile (0–1.7)	286	36.9	
Middle tertile (1.8–2.3)	271	27.5	
Highest tertile (2.4–3)	148	32.2	
<b>Sensation seeking</b>			0.01
Lowest tertile (0–1.5)	296	28.1	
Middle tertile (1.6–2)	253	30.9	
Highest tertile (2.1–3)	156	43.5	
<b>Rebelliousness</b>			<0.001
Lowest tertile (0–1.3)	317	21.4	
Middle tertile (1.4–1.7)	157	36.7	

	<i>n</i> =711	Has had intercourse <i>n</i> =216 (%)	<i>p</i>
Highest tertile (1.8–3)	232	44.3	

*Note:* Figures do not always sum to total sample size because of missing data.

**Table 3**

ORs for sexual experience based on exposure to lyrics describing degrading sex

	<b>Has had intercourse (dichotomous) <i>n</i>=216</b>	
	<b>OR (95% CI) unadjusted</b>	<b>AOR<sup>a</sup> (95% CI)</b>
<b>Exposure to lyrics describing degrading sex</b>		
Lowest tertile (0–2.7)	1.0 (ref)	1.0 (ref)
Middle tertile (2.8–17.5)	1.67 (1.08, 2.58)**	1.41 (0.85, 2.33)
Highest tertile (17.6–70)	3.10 (2.04, 4.72)*	2.07 (1.26, 3.41)**
<b>Age (years)</b>		
≤15	1.0 (ref)	1.0 (ref)
>15	1.99 (1.43, 2.77)*	1.97 (1.34, 2.91)**
<b>Gender</b>		
Male	1.0 (ref)	1.0 (ref)
Female	0.41 (0.29, 0.57)*	0.36 (0.25, 0.53)*
<b>Race</b>		
White	0.60 (0.43, 0.84)**	1.46 (0.70, 3.02)
Black	2.18 (1.55, 3.06)*	2.48 (1.22, 5.04)**
Other	0.66 (0.40, 1.10)	0.94 (0.49, 1.80)
<b>Maternal education</b>		
Did not graduate high school	1.0 (ref)	1.0 (ref)
Graduated high school but not college	0.69 (0.43, 1.11)	0.73 (0.42, 1.28)
≥College degree	0.61 (0.38, 0.97)**	0.55 (0.32, 0.94)**
<b>Grades</b>		
A's and B's	1.0 (ref)	1.0 (ref)
<B's	3.66 (2.59, 5.16)*	2.47 (1.67, 3.65)*
<b>Demanding parenting</b>		
Lowest tertile (0–2)	1.0 (ref)	1.0 (ref)
Middle tertile (2.1–2.3)	0.78 (0.49, 1.22)	0.69 (0.41, 1.18)
Highest tertile (2.4–3)	0.65 (0.45, 0.95)**	0.73 (0.46, 1.19)
<b>Responsive parenting</b>		
Lowest tertile (0–1.7)	1.0 (ref)	1.0 (ref)
Middle tertile (1.8–2.3)	0.65 (0.45, 0.94)**	0.73 (0.47, 1.12)
Highest tertile (2.4–3)	0.81 (0.53, 1.25)	1.09 (0.62, 1.89)
<b>Sensation seeking</b>		
Lowest tertile (0–1.5)	1.0 (ref)	1.0 (ref)
Middle tertile (1.6–2)	1.14 (0.78, 1.67)	1.08 (0.69, 1.68)
Highest tertile (2.1–3)	1.97 (1.29, 2.99)**	1.75 (1.05, 2.93)**
<b>Rebelliousness</b>		
Lowest tertile (0–1.3)	1.0 (ref)	1.0 (ref)
Middle tertile (1.4–1.7)	2.13 (1.38, 3.29)**	1.70 (1.02, 2.83)**

	<b>Has had intercourse (dichotomous) <i>n</i>=216</b>	
	<b>OR (95% CI) unadjusted</b>	<b>AOR<sup>a</sup> (95% CI)</b>
Highest tertile (1.8–3)	2.93 (2.00, 4.31) <sup>*</sup>	2.00 (1.25, 3.21) <sup>**</sup>

<sup>a</sup> Adjusted for all variables in the table

<sup>\*</sup>  $p < 0.001$ ;

<sup>\*\*</sup>  $p < 0.05$