Adolescent Oral Sex, Peer Popularity, and Perceptions of Best Friends' Sexual Behavior

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Objective To provided initial descriptive information regarding adolescents' engagement in oral sex and to investigate adolescents' perceptions of their best friends' sexual behavior and peer-reported popularity as two social mechanisms that may influence engagement in oral sex. **Methods** A total of 212 tenth graders reported their engagement in oral sex and intercourse, number of sexual partners, and use of sexually transmitted infection (STI) protection, as well as perceptions of their best friends' sexual behaviors. Sociometric assessment yielded peer-reported measures of adolescents' preference- and reputation-based popularity. **Results** Adolescents were more likely to report engagement in oral sex than intercourse, report more oral sex partners than intercourse partners, and were unlikely to report use of STI protection during oral sex. Perceptions of best friends' behavior were significantly associated with adolescents' own oral sex behavior, but not intercourse. Adolescents who reported sexual activity had high levels of reputation-based popularity, but not likeability among peers; however, sex with more partners was associated with lower levels of popularity. **Conclusions** Implications for prevention programs are discussed.

Key words sexual behavior; peer relations; sexually transmitted infection.

The rate of sexually transmitted infections (STIs) among adolescents is increasing at an unprecedented rate. Currently, over three million American teenagers become infected with one or more STIs each year (Centers for Disease Control and Prevention [CDC], 2000), including both bacterial (e.g., gonorrhea, chlamydia) and viral infections (e.g., herpes, HIV). Recent concern has focused on noncoital sexual behaviors that may pose a risk for STIs among adolescents. For instance, public attention has focused on the surprisingly high percentage of high school adolescents (i.e., grades 9 through 12) who report engagement in oral sex. Although the topic is rarely investigated empirically, extant data suggest that approximately 33%–59% of high school teens and, more specifically, 7%–24% of adolescent virgins report that they have either given or received oral sex (Breakwell & Fife-Schaw, 1992; Gates & Sonenstein, 2000; Haas, 1979; Newcomer & Udry, 1985; Schuster, Bell, & Kanouse, 1996). Yet little is known about adolescents' potential for contracting an STI by engaging in oral sex or about psychological factors that may influence adolescents' decision to engage in this type of behavior.

Is oral sex a risk behavior worthy of empirical investigation? Certainly, the risk of acquiring an STI through engagement in oral sex is substantially less than for other sexual behaviors (e.g., vaginal or anal intercourse). However, recent reviews have suggested that oral sex is a viable and perhaps significant mode of transmission for several bacterial and viral infections, including gonorrhea, herpes, and chlamydia (Edwards & Carne, 1998a, 1998b). Although controversial, some reports also have documented cases of HIV infection probably incurred during oral-genital contact (e.g., Keet et al., 1992). In this investigation, we have elected to examine adolescents' engagement in oral sex, and peer correlates, for three reasons. First, it may be that adolescents engage in oral sex to avoid the risks associated with other sexual behaviors. If so, the study of social influences and social benefits associated with this behavior would be important for prevention efforts. Second, if oral sex presents any health risk at all,

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the substantial proportion of teens that report engagement in this behavior suggests potential concern from a public health perspective. Third, no data are currently available on adolescents' use of STI protection during oral sex or the number of adolescents' oral sex partners; it is therefore difficult to determine whether many adolescents engage in this behavior in a manner that may pose some risk. This initial study offers some preliminary descriptive statistics on adolescents' engagement in oral sex, as well as the study of peer correlates, in an effort to encourage future research in this area.

A main goal of this study was to examine potential social influences and social benefits in the peer milieu that may be associated with adolescents' engagement in oral sex. Several theoretical models suggest that social factors may influence decisions to engage in health risk behaviors. For instance, the theory of reasoned action (Fishbein & Ajzen, 1975) and the information–motivation–behavioral skills models (Fisher & Fisher, 1992) emphasize the role of social norms in guiding teens' intentions and motivations regarding health behaviors. In addition to family, community, and media influences, social norms may be guided by adolescents' perceptions of their best friends' behavior; however, this has been examined rarely. Indeed, friends are adolescents' most available and relevant reference group and the most likely source of information for teens on the practices, norms, and risks associated with sexual behavior (e.g., Graber, Britto, & Brooks-Gunn, 1999). Adolescents are also likely to evaluate the risks associated with specific sexual behaviors through social comparisons with their best friends. We therefore hypothesized that perceptions of best friends' behavior would be associated with adolescents' own sexual behavior. Past research has demonstrated that teens' beliefs regarding their friends' engagement in risky sexual behavior may be associated with their own reported engagement in risk behavior (Walter et al., 1992). Moreover, past work suggests that preadolescent girls with friends who engaged in sexual intercourse before high school are more likely to initiate sexual intercourse behavior in early adolescence than girls with virgin friends (Billy & Udry, 1985).

Adolescents may also associate oral sex with specific social benefits in the peer context, such as high status and popularity among peers. The belief that engagement in oral sex may help maintain or elevate an individual's level of status among peers may be one factor that influences adolescents' decisions to engage in this behavior (i.e., see the AIDS risk reduction model, Catania, Kegeles, & Coates, 1990; health belief model, Janz & Becker, 1984). This belief would be partially supported if, indeed, adolescents who reported engagement in oral sex were also most likely to be nominated by peers as well liked or popular. Both preference- and reputation-based measures of popularity were examined in this study to test this hypothesis. Preference-based sociometric measures evaluate the extent to which adolescents are liked or disliked by peers (see Coie & Dodge, 1983). Three prior investigations have examined likeability among peers in childhood as a predictor of teenage pregnancy in adolescence (Feldman, Rosenthal, Brown, & Canning, 1995; Miller-Johnson et al., 1999; Underwood, Kupersmidt, & Coie, 1996), yielding mixed, inconclusive results. Reputation-based measures of popularity (i.e., "peer-perceived popularity") are based on adolescents' nominations of most- and least-popular peers, identifying adolescents with the greatest levels of power, dominance, and status in the peer group. Adolescents who are high in peer-perceived popularity are not necessarily well liked by their peers but may be nevertheless envied and emulated within the peer context (Parkhurst & Hopmeyer, 1998). No prior study has examined associations between reputation-based measures of popularity and adolescents' sexual behavior. We hypothesized that, compared to others, adolescents who report sexual behavior would be regarded as more popular (i.e., higher levels of peer-perceived popularity) but not necessarily more well liked among peers, indicating that high-status teens may attract greater sexual interest and thus have more opportunity to engage in sexual behavior.

Methods

Participants

Participants included 212 adolescents (86 boys, 40.6%; 126 girls, 59.4%) in the tenth grade at a suburban New England high school. Participants' ages ranged between 15 and 17 years (M = 16.31; SD = .50). The ethnic distribution of the sample was 76.4% white/Caucasian; 9.9% African American; 3.8% Latino American, and 9.9% other/mixed ethnicity within a city of fairly homogeneous, middle-class socioeconomic status (SES). According to school records, approximately 22.3% of students were eligible for free or reduced-price lunch. All tenth grade students were recruited for participation, with the exception of students in self-contained special education classes. Consent forms were returned by 70% of families (n = 255); of these, 92% of parents gave consent for their child's participation (n = 235). Data from students absent on one of the days of testing (n = 23) were excluded from analyses.

Measures

Sexual Behavior. Adolescents' sexual behavior was assessed using items from existing health-risk behavior in-

struments (e.g., Youth Risk Behavior Surveillance) (CDC, 1998; La Greca, Prinstein, & Fetter, 2001). Adolescents were asked to report "the number of partners you had oral sex with in the past year"; responses were used to determine adolescents' *oral sex activity* in the past year (yes or no) and also to index their *number of oral sex partners.* Adolescents who reported at least one oral sex partner were also asked, "How often did you or your partner use STD protection when giving or receiving oral sex during the past year?" (Never, Once in a while, About half the time, Most times, Every time) as a measure of *protected oral sex.* Adolescents responded to the same questions regarding their *sexual intercourse activity,* the *number of sexual intercourse partners,* and their use of STI protection or birth control during sexual intercourse in the past year ("*protected sexual intercourse*"). Comparisons between measures of STI protection during oral sex and intercourse should be made with extreme caution, given the differences in the definitions of protection used for these items (i.e., protected intercourse referred to the use of STI or pregnancy protection); data therefore are reported for descriptive purposes only. Pilot testing and focus groups with adolescents from this school indicated that the wording of these items on oral sex and intercourse were appropriate and sufficient to ensure teens' comprehension of the constructs of interest.

Psychometric properties for these items have been demonstrated in prior studies using this measure (e.g., La Greca et al., 2001). Items on unprotected sex had coefficient alphas of .73 and .77 in two independent samples (Biglan et al., 1990). Biglan et al. also found that high-risk sexual behavior was significantly related to antisocial behavior (r = .21), cigarette use (r = .43), alcohol use (r = .34), and illicit drug use (r = .39).

Perceptions of Friends' Sexual Behavior. Adolescents identified their best friend from a roster of classmates and reported their perceptions of their friend's sexual behavior using a parallel set of questions to those described, including perceptions of their friend's oral sex behavior (i.e., *friend's oral sex activity, number of friend's oral sex partners, friend's protected oral sex*), and sexual intercourse behaviors (i.e., *friend's sexual intercourse activity, number of friend's sexual intercourse partners, friend's protected sexual intercourse*). This procedure is consistent with established methodologies for assessing perceptions of friends' health-risk behavior (e.g., alcohol use, cigarette use), including sexual behavior (e.g., La Greca et al., 2001).

Sociometric Measures. Using alphabetized rosters of all grade mates, adolescents nominated an unlimited number of peers for four sociometric items. The order of names was counterbalanced on each roster to control for possible effects of alphabetization on nominee selection. Nominations were used to compute one measure of preference-based peer status (i.e., *social preference*) and one measure of reputation-based peer status (i.e., *social reputation*). Social preference was computed as a standardized difference between standardized responses to two sociometric items, "Who do you like to spend time with the most?" (like-most) and "Who do you like to spend time with the least?" (like-least), with higher scores indicating greater likeability among peers (Coie & Dodge, 1983). Social reputation was computed as a standardized difference between standardized responses to two different sociometric items (i.e., "Who is most popular?" and "Who is least popular?"), with greater scores indicating that adolescents were perceived by their classmates to have higher levels of popularity (Parkhurst & Hopmeyer, 1998).

Results

Oral Sex: Descriptive Information

Table I lists frequencies and percentages of adolescents who engaged in each form of sexual behavior. There were no significant differences in boys' and girls' reports of sexual behavior. Adolescents were significantly more likely to engage in oral sex as compared to sexual intercourse, $\chi^2(1) = 62.62$, $p < .0001$. Sexually active teens reported a significantly greater number of oral sex partners than sexual intercourse partners, paired t (96) = 4.42, $p < .0001$. Most adolescents who reported engagement in oral sex indicated that they had never used STI protection (see Table I).

Perceptions of Best Friends' Sexual Behavior

Overall, a significant majority of adolescents reported that their best friends' oral sex behavior was similar to their own oral sex behavior. For instance, of the 86 adolescents who reported engagement in oral sex, 56.5% reported that their best friend had also engaged in oral sex in the past year, $\chi^2(1) = 34.84$, $p < .0001$. Of the 126 teens who did not engage in oral sex activity, 82.5% reported that their best friend also did not engage in oral sexual activity. However, there was no significant association between adolescents' reports of engagement in sexual intercourse and their perceptions of their best friend's engagement in sexual intercourse, $\chi^2(1) = 1.03$, *ns*.

Pearson correlations were conducted to examine correspondence between adolescents' reported number of sexual partners and their perceptions of the number of their best friends' sexual partners. A significant association was revealed for oral sex partners, r = .57, $p < .001$, however, no significant association was revealed for sexual intercourse

Table I. Descriptive Information on Adolescents' Reported Sexual Behavior

	Boys *n* (%)	Girls *n* (%)	Total *n* (%)
Oral sex activity, *n* (%) active	33 (37.9)	53 (42.1)	86 (40.4)
No. of oral sex partners[a]			
1	16 (48.5)	30 (56.6)	46 (53.5)
2	8 (24.2)	9 (17.0)	17 (19.8)
3–4	7 (21.2)	13 (24.5)	20 (23.3)
5 or more	2 (6.1)	1 (1.9)	3 (3.5)
Protected oral sex[a]			
Never	24 (72.7)	36 (67.9)	60 (70.0)
Sporadic use[b]	3 (9.0)	8 (15.1)	11 (12.8)
Every time	6 (18.0)	9 (17.0)	15 (17.4)
Sexual intercourse activity, *n* (%) active	20 (22.2)	45 (35.2)	65 (29.8)
No. of sex intercourse partners[b]			
1	9 (45.0)	32 (71.1)	41 (62.5)
2	5 (25.0)	8 (17.8)	13 (20.3)
3–4	3 (15.0)	5 (11.1)	8 (12.5)
5 or more	3 (15.0)	0 (0)	3 (4.7)
Protected sexual intercourse[c]			
Never	2 (10.0)	4 (8.9)	6 (9.2)
Sporadic use[b]	3 (15.0)	17 (37.7)	20 (30.8)
Every time	15 (75.0)	24 (53.3)	39 (60.9)

[a]Percentages based on the number of adolescents who engaged in oral sex in the past year.
[b]Indicates the number and percentage of responses for use of protection "Once in a while," "About half the time," or "Most times."
[c]Percentages based on the number of adolescents who engaged in sexual intercourse in the past year.

partners, $r = .14$, *ns*. Thus, the association for oral sex partners was significantly stronger than the association for sexual intercourse partners, Williams's $t(38) = 2.23$, $p < .05$.

Preference- and Reputation-Based Sociometric Measures of Status

A 2 (Oral Sex; yes/no) × 2 (Gender) MANOVA analysis was conducted to compare adolescents who reported that they did/did not engage in oral sex on the two continuous measures of peer status, entered as a set of dependent variables (i.e., social preference and social reputation). A multivariate main effect for Oral Sex was revealed, Wilks' $F(2, 207) = 9.95$, $p < .0001$, which was significant at a univariate level for social reputation only, $F(1, 208) = 13.45$, $p < .0001$. Adolescents who reported engagement in oral sex were rated by peers as more popular (social reputation $M = .27$; $SD = 1.04$) than adolescents who did not engage in oral sex ($M = -.31$; $SD = 1.08$). No significant interaction effect was revealed.

A parallel set of analyses was conducted to examine preference- and reputation-based peer status for adolescents who reported that they did/did not engage in sexual intercourse. A similar pattern of results emerged. A multivariate effect for sexual intercourse, Wilks' $F(2, 206) = 10.11$, $p < .0001$, was significant at a univariate level for only social reputation, $F(1, 207) = 6.23$, $p < .0001$. Adolescents who reported engagement in sexual intercourse received higher social reputation scores ($M = .29$; $SD = 1.03$) than other adolescents ($M = -.23$; $SD = 1.09$). No significant interactions involving gender were revealed, nor any significant effects for social preference.

Pearson correlations were conducted to examine associations among social preference, social reputation, and the number of adolescents' reported oral sex and sexual intercourse partners. Among adolescents who reported engagement in oral sex, a significant correlation was revealed between the number of reported oral sex partners and social reputation ($r = -.23$, $p < .05$), but not for the association between the number of adolescents' reported oral sex partners and social preference ($r = -.21$, $p = .06$). Overall, these results suggest that adolescents' reported engagement in oral sex with multiple partners was generally associated with lower popularity among peers. No significant associations were revealed between the number of adolescents' reported sexual intercourse partners and their social preference ($r = -.04$, *ns*) or social reputation ($r = .00$, *ns*) among peers.

Discussion

Although the risk of obtaining an STI through oral sex is certainly lower than the risk of infection through sexual in-

tercourse, research has indicated that oral transmission is an important health concern, particularly because some adolescents and adults erroneously view oral sex as a risk-free behavior (Remez, 2000). In this study, adolescents reported that they are significantly more likely to engage in oral sex than in intercourse and engage in oral sex with significantly more partners than for intercourse. Adolescents also reported that they are unlikely to use STI protection during oral sex. In other words, adolescents' behavior may place them at maximum risk for oral transmission of STIs.

This study examined social mechanisms that might influence adolescents' engagement in sexual behavior. Results suggested that perceptions of friends' behaviors were more strongly associated with adolescents' engagement in oral sex than in sexual intercourse, suggesting that oral sex may be more amenable to social influence or intervention. Indeed, not only was adolescents' reported engagement in oral sex related to their perceptions of their best friends' oral sex but also the number of adolescents' reported oral sex partners was associated with their perceptions of the number of their friends' partners. In contrast, no such pattern of results was found for sexual intercourse. Although adolescents may be likely to imitate some of their best friends' behaviors, peer influence may be attenuated for behaviors considered risky and dangerous (i.e., intercourse). Unfortunately, this also suggests that less risky behaviors, such as oral sex, may ultimately pose a greater threat to adolescents' health because they are more strongly influenced and reinforced by perceptions of peers' behavior. Adolescents' perceptions of friends also may be influenced by their own behavior, suggesting that adolescents may be invested in the belief that their peers engage in behaviors in a manner that would match and validate their own decisions.

This study also examined potential social benefits that may be associated with sexual behavior, specifically the associations between oral sex and peer popularity. Findings suggested that adolescents' reports of oral sex and intercourse were significantly associated with peer-perceived popularity but not likeability among peers. These results indicate either that sexually active adolescents enjoy higher status among peers or perhaps that popular adolescents feel more pressured or inclined to report that there are sexually active. Adolescents may believe that sexual activity best matches a prototype of popular, high-status adolescents. Reputation-based measures of peer status identify those individuals who best match this prototype of popularity; indeed, only this measure of status was associated with sexual behavior. The desire to engage in, or simply report, sexual activity may reflect adolescents' motivation to imitate that prototype (e.g., Gibbons & Gerrard, 1995).

It appears, however, that if adolescents' peers afford higher status to those who report engagement in sexual behavior, they do so only for those adolescents who report behaving in a relatively safe manner (i.e., with fewer partners). Greater numbers of adolescents' reported sexual partners were associated with lower levels of popularity and, to some extent, with lower peer acceptance. This is good news for psychologists interested in health prevention efforts because it suggests that the peer culture may be somewhat supportive of safer sexual behavior. This finding also offers important perspectives for the identification of adolescents engaging in risky behavior. Although past work has typically indicated that children rejected (i.e., disliked) by peers are most at risk for negative psychological outcomes (Parker & Asher, 1987), these results suggest that intervention efforts should target popular teens, particularly those who are especially susceptible to the belief that their closest friends are engaging in risk behavior.

In addition to implications for the identification of potentially at-risk adolescents, the results offer directions for intervention efforts. The findings suggest that a significant proportion of teens may be engaging in oral sex in a manner that potentially poses health risk, even within this community (i.e., not clinically referred) sample. Is it reasonable to expect that teens will begin to use STI protection during oral sex? Recent efforts have attempted to make the use of STI protection during oral sex less aversive for teens (e.g., by providing flavored condoms). However, substantial changes in attitudes and social norms may be required before there are noticeable differences in teens' use of protection for this relatively low-risk sexual behavior. Indeed, many teens may purposefully engage in oral sex to avoid the greater risks associated with other sexual behaviors. Perhaps an initial step for prevention would be increased education for adolescents concerning the reduced but still significant risks associated with oral sex. This information would help adolescents make informed decisions about their engagement in and use of protection during oral sex.

Peer education efforts may be especially fruitful to address possible misperceptions of peers' behavior and apparent status differences among adolescents who are or are not reporting engagement in sexual behavior. Indeed, enlisting popular, high-status adolescents may help to address possible stereotypes regarding sexual behavior in adolescence. Actively manipulating social norms and adolescents' perceptions of the social benefits associated with sexual behavior may also prove to be effective prevention strategies. For instance, research has demonstrated that simply educating teens about the tendency to misperceive others' behavior (i.e., pluralistic ignorance) can be an effective strategy to reduce risk behaviors (Schroeder &

Prentice, 1998). Prevention strategies may also encourage teens to view safer sex as normative (i.e., "Most kids your age use protection") or dispel adolescents' misperceptions regarding their peers' approval of sexually risky behavior (i.e., "Kids who engage in risky behavior are less popular among their peers") (Rotheram-Borus & Koopman, 1991; Rotheram-Borus, Mahler, & Rosario, 1995).

Future research should address some of the limitations of this initial investigation on the correlates of oral sex. Investigations of ethnically and economically diverse samples may reveal different proportions of sexually active adolescents and different social norm influences. The use of a self-report assessment may have influenced adolescents' report of sexual behavior; however, this procedure is typical in this type of research and few alternative methods of assessment are currently available. Future work using alternate assessment strategies may determine whether certain adolescents may be motivated to over- or underreport their engagement in sexual behaviors and how this response tendency may further reflect social pressures and perceptions of norms. Assessment of best friends' actual sexual behavior may reveal important information regarding the accuracy of adolescents' perceptions. Last, future research would greatly benefit from longitudinal studies that can examine prospective associations between social factors and future sexual behavior and begin to determine possible directions of effect.

Overall, this research offers important preliminary data on adolescents' oral sex behavior. Although this particular type of sexual behavior has been relatively neglected in past research and in public education health messages, compelling evidence suggests that adolescents' casual engagement in oral sex may pose potential risk to teens' health. The results clearly indicated that adolescents' engagement in sexual behavior is associated with social influences in a manner that preventionists could used to promote safer sexual behavior.

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