

# Oral Versus Vaginal Sex Among Adolescents: Perceptions, Attitudes, and Behavior

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**ABSTRACT.** *Objective.* Despite studies indicating that a significant proportion of adolescents are having oral sex, the focus of most empirical studies and intervention efforts concerning adolescent sexuality have focused on vaginal intercourse. This narrow focus has created a void in our understanding of adolescents' perceptions of oral sex. This study is the first to investigate adolescents' perceptions of the health, social, and emotional consequences associated with having oral sex as compared with vaginal sex, as well as whether adolescents view oral sex as more acceptable and more prevalent than vaginal sex.

*Methods.* Participants were 580 ethnically diverse ninth-grade adolescents (mean age: 14.54; 58% female) who participated in a longitudinal study on the relationship between risk and benefit perceptions and sexual activity. Participants completed a self-administered questionnaire that inquired about their sexual experiences and percent chance of experiencing outcomes from, attitudes toward, and perceived prevalence of oral versus vaginal sex among adolescents.

*Results.* More study participants reported having had oral sex (19.6%) than vaginal sex (13.5%), and more participants intended to have oral sex in the next 6 months (31.5%) than vaginal sex (26.3%). Adolescents evaluated oral sex as significantly less risky than vaginal sex on health, social, and emotional consequences. Adolescents also believed that oral sex is more acceptable than vaginal sex for adolescents their own age in both dating and nondating situations, oral sex is less of a threat to their values and beliefs, and more of their peers will have oral sex than vaginal sex in the near future.

*Conclusions.* Given that adolescents perceive oral sex as less risky, more prevalent, and more acceptable than vaginal sex, it stands to reason that adolescents are more likely to engage in oral sex. It is important that health care providers and others who work with youths recognize adolescents' views about oral sex and broaden their clinical preventive services to include screening, counseling, and education about oral sex. *Pediatrics* 2005;115:845-851; adolescent sexual behavior, risk perception, STDs, oral sex.

ABBREVIATIONS. STI, sexually transmitted infection; ANOVA, analysis of variance.

Although the past several decades have produced a host of research on adolescent sexuality as well as numerous prevention and intervention efforts aimed at reducing adolescents' engagement in risky sexual behaviors, the majority of these efforts have focused solely on vaginal intercourse. This concentration has occurred despite studies indicating that a significant proportion of adolescents are engaging in noncoital sexual activities, including oral sex.<sup>1-5</sup> Studies indicate that between 14% and 50% of adolescents have had oral sex before their first experience with sexual intercourse,<sup>3,5-8</sup> that more adolescents have had oral sex than vaginal sex,<sup>5,8,9</sup> and that few adolescents who engage in oral sex are using barrier protection.<sup>1,6,9</sup> The emphasis on vaginal sex has resulted in intervention efforts providing limited education and guidance about oral sex, including the potential risk of sexually transmitted infections (STIs), including HIV.<sup>1,10</sup> Most clinical preventive service guidelines provide specific guidelines concerning only screening or education about vaginal sex or sex in more general terms.<sup>11-14</sup> To the extent that adolescents perceive oral sex as less risky and more acceptable and that these perceptions influence their decisions to engage in oral sex, it is critical that health care providers include screening and education about oral sex into their practice.

Although it is true that oral sex negates the risk of pregnancy and entails significantly less risk of STI transmission, various studies and case reports suggest that oral sex is still a potential transmission route for oral, respiratory, and genital pathogens,<sup>6,15-18</sup> including STIs such as herpes, hepatitis, gonorrhea, chlamydia, syphilis, and HIV.<sup>15</sup> Although HIV transmission rates are lower for oral sex than vaginal and anal sex,<sup>17</sup> HIV and STI transmission is still possible through oral sex,<sup>6,16-18</sup> with 1 estimate for HIV transmission through oral sex of 0.04% compared with 0.06% for anal sex,<sup>17</sup> and another estimate of 1% (range: 0.85-2.3%) for oral sex with a single partner, as compared with 10% (range: 4.2-12%) for anal sex.<sup>18</sup> There is a concern about the potential for a rise in STI transmission rates from oral sex as a result of a general misperception that oral sex entails no risk at all or very little risk as compared with vaginal or anal sex, and therefore it is engaged in more frequently and with no use of barrier protec-

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tion.<sup>1,6,10,15,16</sup> Such concern has resulted in the need for research on why adolescents are engaging in oral sex and how they view oral sex.<sup>1,4,6,8,15,16,18,19</sup> Nevertheless, surprisingly few empirical studies have assessed adolescents' attitudes toward or perceptions of oral sex, especially as compared with vaginal sex. Only 1 study<sup>6</sup> has investigated adolescent oral sex experience and risk perceptions, finding that although 96% of the sample acknowledged HIV transmission risk for vaginal and anal sex, significantly fewer (68%) acknowledged the risk for oral sex. That study was limited in that it asked only about HIV risk and not other risks, such as other STIs or social and emotional risks that are pertinent to adolescent decision making, and it did not analyze the potential effect that experience with oral sex may have on the perceptions of risk. Furthermore, although there is evidence that adolescents are more likely to have vaginal intercourse if they believe that they will benefit from the experience,<sup>20,21</sup> no study has extended this research to oral sex.

Adolescents' perceptions of the extent to which peers are engaging in oral sex are also important, because studies have shown that adolescents are more likely to have vaginal sex when they perceive that it is more prevalent among their peers.<sup>22–25</sup> One study<sup>9</sup> investigated the influence of adolescent perceptions of best friends' oral sex behavior on engagement in oral sex, finding that perceptions of friends' behavior were significantly associated with engagement in oral but not vaginal sex. Although these results provide support for the relationship between perceptions of best friends' behavior and adolescents' own behavior, previous studies have not investigated perceived prevalence of oral sex among adolescents' peer group in general.

The goals of this study were to fill these gaps in our understanding of adolescents' engagement in oral sex by determining whether adolescents perceive oral sex as less risky, more beneficial, more acceptable, and more prevalent among peers than vaginal sex. In so doing, we tested the following hypotheses with young adolescents in ninth grade: (1) adolescents are more likely to have engaged in oral than vaginal sex, (2) adolescents will perceive oral sex as less likely to result in health risks (eg, STIs) and social risks (eg, getting into trouble) than vaginal sex, (3) adolescents will have more favorable attitudes about participating in oral sex than vaginal sex, and (4) adolescents will perceive the prevalence rates of oral sex among similar-aged youths to be greater than vaginal sex.

## METHODS

### Participants

Participants were 580 adolescents (mean age: 14.54; SD: .56; 58% female, 42% male) who participated in a longitudinal study on the relationship between risk and benefit perceptions and sexual activity. In this longitudinal study, participants were surveyed every 6 months; however, all of the data included in the current study come from the second wave of data collection. Participants were ethnically diverse, with 40.0% describing themselves as white/non-Hispanic, 23.9% as Latino, 17.3% as Asian, 7.3% as Pacific Islander, 3.1% as African American, 0.2% as American Indian/Alaskan Native, and 8.3% as mixed or other. According to partic-

ipants' reports, 9% of their mothers had a professional degree, 2.4% had some education after college, 16.4% had a 4-year college degree, 28.8% had at least some college education, 18.6% of the mothers had a high school degree, 12.5% did not graduate from high school, and 12.0% of the participants reported that they did not know their mother's educational level.

### Procedures

Participants were recruited from mandatory ninth-grade classes in 2 California public high schools. Researchers came to each class, introduced the study to the students, and invited all ninth-grade students to participate. Students received study information and consent forms during class time and were asked to bring the materials home to share with their parents. Interested participants signed the adolescent assent form, and parents signed the parental consent form. Of the 1180 students who received consent packets, 665 (56.36%) returned completed consent forms. Of these, 637 (95.79%) completed the first survey, for an overall participation rate of 53.98%. The 580 participants included in this study completed the second wave of data collection, representing 91% of the original 637 participants. Participants did not significantly differ from the overall population of students in their schools on ethnicity or socioeconomic status.

Participants completed the self-administered questionnaire during regular class periods at their school. Before beginning the survey, the researchers explained the instructions for completing the surveys and remained available to answer questions that arose during the survey. Refreshments were provided for all participants. In addition, schools were reimbursed for their assistance. This money was used for school supplies for the students. The Institutional Review Board at the University of California, San Francisco, approved the study.

### Measures

#### Demographics

Participants provided information about their age, grade, gender, ethnicity, and mother's level of education.

#### Engagement in and Intentions to Have Oral and Vaginal Sex

Participants were asked about the number of times they had had oral sex and vaginal sex in their entire life, with the following 6 response choices: never, 1 time, 2 times, 3 times, 4 times, and 5 or more times. Participants were also asked whether they intended to have vaginal sex and oral sex in the next 6 months, with responses provided on a 5-point scale ranging from "definitely will not" (1) to "definitely will" (5) (Table 1). Vaginal sex was defined as "regular" sex, or "going all the way" (in which the boy's penis is inserted into the girl's vagina). This was also specified as consensual sex, whereby both partners choose to have sex and neither was forced.

#### Chance Estimates of Experiencing Risks and Benefits From Oral and Vaginal Sex

Participants read 2 scenarios concerning sexual behavior. The scenarios were identical except for the specification of having vaginal sex versus having oral sex (ie, "Imagine that you have been dating Tanya for 3 months. You both have had sex with 2 other people but not with each other. Tonight you and Tanya have sex (oral sex) 1 time. You do not use a condom or other safer sex method."). After reading this scenario, participants estimated the chance that they would personally experience 12 sex-related risks and benefits (see Tables 2 and 3 for the list of risks and benefits).

Participants' chance estimates were provided using any percentage between 0% and 100%. The quantitative response scale (0%–100%) was chosen over scales that use lexical probability terms (eg, "likely," "probably") to estimate risk due to the great variability in meaning ascribed to these terms by adolescents.<sup>26–28</sup>

#### Attitudes Toward Engagement in Oral and Vaginal Sex

Participants responded to 5 items concerning their attitudes and acceptability of vaginal sex and oral sex (see Table 4 for items). Participants responded to each item on a 5-point scale, ranging from "strongly agree" (5) to "strongly disagree" (1).

**TABLE 1.** Participants' Engagement in and Intentions to Have Oral and Vaginal Sex

	Total, % (n)	Male, % (n)	Female, % (n)
Have had oral sex	19.60 (112)	18.20 (43)	20.80 (69)
Have had vaginal sex	13.50 (78)	14.00 (34)	13.10 (44)
Have had oral and vaginal sex	10.53 (60)	11.44 (27)	9.94 (33)
Intend to have oral sex in the next 6 mo	31.50 (178)	34.50 (80)	29.40 (98)
Intend to have vaginal sex in the next 6 mo	26.20 (148)	29.00 (67)	24.10 (80)

**TABLE 2.** Adolescents' Chance Estimates of Experiencing Positive and Negative Outcomes for Vaginal Compared With Oral Sex

	Vaginal Sex, Mean % (SD)	Oral Sex, Mean % (SD)	F Value	P Value
<b>Risks</b>				
Get chlamydia	52.98 (25.40)	37.55 (28.86)	105.69	.000
Get HIV	49.92 (26.77)	37.64 (30.06)	77.01	.000
Become pregnant	67.63 (23.41)	16.71 (29.31)	824.86	.000
Relationship gets worse	42.13 (26.86)	35.61 (26.41)	37.47	.000
Bad reputation	41.46 (28.60)	37.58 (28.54)	10.54	.001
Get into trouble	71.71 (31.86)	63.16 (35.56)	64.77	.000
Feel bad about self	54.81 (34.11)	45.90 (34.91)	31.70	.000
Feel guilty	55.42 (33.85)	48.19 (35.43)	46.95	.000
<b>Benefits</b>				
Experience pleasure	72.03 (30.44)	59.19 (36.41)	43.93	.000
Feel good about self	40.01 (32.58)	40.26 (33.75)	.000	.999
Be more popular	27.13 (26.76)	26.85 (26.94)	.066	.797
Relationship gets better	41.29 (25.29)	39.71 (26.53)	.310	.578

### Perceived Peer Engagement in and Intentions to Have Oral and Vaginal Sex

For both vaginal and oral sex separately, participants indicated the number of teens their age, out of 100, whom they think have had sex, intend to have sex in the next 6 months, and will not have sex in the next 6 months (see Table 5 for more details).

## RESULTS

All analyses were conducted using the statistical software SPSS, Version 10.

### Experience With and Intentions to Have Oral and Vaginal Sex

Table 1 presents the number of participants overall and by gender who reported having had oral sex and vaginal sex and who intend to have oral and vaginal sex in the next 6 months. In this group of ninth graders, a significantly greater number of partici-

pants have had oral sex (19.6%) than vaginal sex (13.5%;  $\chi^2 = 191.48$ ,  $df = 1$ ,  $P < .000$ ), and more participants intended to have oral sex in the next 6 months (31.5%) than vaginal sex (26.3%;  $\chi^2 = 216.18$ ,  $df = 1$ ,  $P < .000$ ). There were no gender differences in adolescents' sexual experiences or intentions.

### Perceived Risks and Benefits Associated With Oral and Vaginal Sex

A within-subjects, repeated measures analysis of variance (ANOVA) compared participants' chance estimates of experiencing positive and negative outcomes associated with having either oral sex or vaginal sex. Potential interaction effects of gender and oral sex experience (dichotomously scored) were also explored in this model. As shown in Table 2, results supported our hypotheses for 9 of the 12 outcomes.

**TABLE 3.** Adolescents' Chance Estimates of Experiencing Positive and Negative Outcomes for Vaginal Versus Oral Sex, for Adolescents With and Without Oral Sex Intentions

	Intentions		No Intentions		F Value	P Value
	Oral Sex, Mean % (SD)	Vaginal Sex, Mean % (SD)	Oral Sex, Mean % (SD)	Vaginal Sex, Mean % (SD)		
<b>Risks</b>						
Get chlamydia	30.93 (2.16)	51.87 (1.93)	40.91 (1.48)	54.24 (1.32)	8.94	.003
Get HIV	31.99 (2.26)	49.07 (2.03)	40.54 (1.54)	51.31 (1.39)	6.54	.011
Become pregnant	10.48 (2.17)	67.60 (1.76)	19.68 (1.50)	67.78 (1.22)	8.33	.004
Relationship gets worse	25.86 (1.94)	36.98 (2.04)	39.90 (1.32)	44.46 (1.39)	8.68	.003
Bad reputation	28.77 (2.10)	35.54 (2.14)	41.69 (1.45)	44.40 (1.47)	3.53	.061
Get into trouble	44.64 (2.51)	59.93 (2.33)	71.99 (1.71)	77.60 (1.59)	19.51	.000
Feel bad about self	28.86 (2.49)	40.07 (2.46)	54.01 (1.71)	61.76 (1.69)	1.83	.177
Feel guilty	25.12 (2.40)	40.41 (2.43)	59.31 (1.64)	62.71 (1.67)	27.52	.000
<b>Benefits</b>						
Experience pleasure	73.81 (2.64)	83.69 (2.22)	51.76 (1.83)	66.23 (1.54)	3.02	.083
Feel good about self	55.63 (2.43)	52.39 (2.40)	33.32 (1.66)	34.46 (1.64)	2.53	.112
Be more popular	32.44 (2.00)	33.13 (2.02)	23.97 (1.37)	24.84 (1.38)	.008	.928
Relationship gets better	48.79 (1.96)	48.86 (1.87)	35.72 (1.34)	37.61 (1.28)	.695	.405

**TABLE 4.** Adolescents' Attitudes Toward Engagement in Vaginal Sex Versus Oral Sex\*

	Vaginal Sex, Mean (SD)	Oral Sex, Mean (SD)	F Value	P Value
It is okay for teens my age to have (vaginal/oral) sex with someone they are dating.	2.62 (1.19)	2.87 (1.25)	21.889	.000
Teens my age are too young to have (vaginal/oral) sex.	3.51 (1.23)	3.34 (1.27)	6.37	.012
It is okay for teens my age to have (vaginal/oral) sex with someone they are not dating.	1.96 (1.10)	2.17 (1.14)	27.36	.000
It is okay for teens my age to have (vaginal/oral) sex with someone they are in love with.	3.02 (1.30)	3.05 (1.32)	1.39	.239
Having (vaginal/oral) sex at my age is against my moral/ethical/religious beliefs.	3.08 (1.41)	2.93 (1.34)	4.62	.032

\* Responses made on a 5-point scale, ranging from strongly agree (5) to strongly disagree (1).

Adolescents correctly perceived the chance of experiencing health-related negative outcomes, including chlamydia, HIV, and pregnancy, as significantly less likely to occur from oral than vaginal sex. Concerning, however, was the greater number of participants who estimated absolutely zero chance of contracting chlamydia and HIV from oral sex (14% and 13%) versus vaginal sex (1% and 2%).

Adolescents also evaluated a number of social and emotional risks as less likely to occur for oral sex than for vaginal sex (Table 2). More specific, participants believed that it is less likely that their relationship with their partner will get worse, that they will get a bad reputation, that they will get into trouble, that they will feel bad about themselves, or that they will feel guilty from having oral sex compared with vaginal sex. Adolescents did believe that they were more likely to experience pleasure from vaginal sex than from oral sex. No significant differences were found between oral and vaginal sex regarding potential social or emotional benefits, including feeling good about oneself, being more popular, or relationship getting better.

Significant interactions between gender and outcome estimates were found for 2 outcomes: male adolescents believed that one's relationship is more likely to get better from having vaginal than oral sex (means: 50.33 and 46.97 for vaginal and oral sex, respectively) than did female adolescents (means: 38.06 and 39.96;  $F = 4.04, P < .05$ ). Female adolescents believed that pleasure was more likely to occur from vaginal sex than oral sex (means: 68.66 and 51.88) than male adolescents (means: 85.24 and 81.48;  $F = 17.68, P < .001$ ).

Significant within-subject interactions between adolescents' own experience with oral sex and their perceived chance of a risk resulting from having oral versus vaginal sex were found. Specifically, adolescents who have had oral sex reported a greater difference in risk estimates for oral versus vaginal sex than did adolescents without oral sex experience for the following 4 outcomes: pregnancy (means for ad-

olescents with oral sex experience were 67.32 and 9.31 for getting pregnant if they have had vaginal and oral sex, respectively, compared with 67.69 and 18.54 for adolescents without oral sex experience;  $F = 5.65, P < .05$ ), getting into trouble (means: 59.26 and 45.14 vs 73.13 and 65.83, respectively;  $F = 6.56, P < .01$ ), having their relationship get worse (means: 38.49 and 27.80 vs 42.54 and 37.48, respectively;  $F = 5.32, P < .05$ ), or feeling guilty (means: 38.49 and 25.24 vs 57.65 and 51.84, respectively;  $F = 7.16, P < .01$ ). Nevertheless, for all 4 of these outcomes, adolescents with and without oral sex experience estimated the risks as less likely to happen from having oral sex than vaginal sex.

We also conducted a within-subjects, repeated measures ANOVA to determine whether participants' chance estimates of experiencing positive and negative outcomes associated with having either oral sex or vaginal sex varied by participants' intentions to have oral sex in the near future. As shown in Table 3, significant interactions were found for 6 of the 8 risks and none of the benefits. A close look at the means presented in Table 3 indicates that adolescents with intentions to have oral sex in the next 6 months perceived an even greater difference in their perceptions of experiencing a negative outcome from having oral than vaginal sex than did adolescents without intentions to have oral sex in the near future. Nevertheless, the pattern of results for differences in chance estimates for oral versus vaginal sex remained invariant across oral sex intentions. Specifically, for all outcomes, adolescents with and without oral sex intentions estimated the risks as less likely to happen from having oral sex than vaginal sex.

#### Adolescents' Attitudes About Participating in Oral Versus Vaginal Sex

A within-subjects, repeated measures ANOVA compared participants' attitudes toward oral sex versus vaginal sex (Table 4). As expected, adolescents believed that having oral sex is more acceptable for their age group than vaginal sex. Specifically, partic-

**TABLE 5.** Adolescents' Perceived Peer Engagement in Vaginal Versus Oral Sex

Out of 100 Teens Your Age, How Many . . .	Vaginal Sex, Mean (SD)	Oral Sex, Mean (SD)	F Value	P Value
Have had (vaginal/oral) sex?	40.87 (25.22)	46.72 (25.13)	49.39	.000
Will choose not to have (vaginal/oral) sex in the next 6 mo?	44.81 (26.01)	41.65 (25.45)	13.27	.000
Will have (vaginal/oral) sex in the next 6 mo?	34.27 (23.79)	39.02 (24.37)	65.52	.000
Will wait to have (vaginal/oral) sex until they are married?	31.29 (24.66)	26.80 (24.44)	33.08	.000

ipants reported more acceptance of having oral sex with someone they are dating and with someone they are not dating than vaginal sex. Participants also agreed more that teens their age were too young to have vaginal sex, compared with oral sex. In addition, participants believed that vaginal sex was more against their moral, ethical, or religious beliefs, compared with oral sex. Participants did not demonstrate a significant difference in attitudes between having oral or vaginal sex with someone with whom they are in love. Interaction effects of gender and oral sex experience (dichotomously scored) were also conducted for each attitude variable. No significant interactions were found for oral sex experience. There was 1 significant gender interaction ( $F = 5.23, P < .05$ ), in which female adolescents agreed that vaginal sex at their age is against their ethical beliefs more than is oral sex (means: 3.08 for vaginal sex and 2.86 for oral sex), whereas male adolescents on average reported no difference in such beliefs between vaginal or oral sex (means: 2.60 for both sex types).

### Perceived Peer Engagement in and Intentions to Have Oral and Vaginal Sex

Results from a within-subjects ANOVA indicated that adolescents in this study believed that a greater number of adolescents their age have had and intend to have oral sex in the near future compared with vaginal sex. The adolescents also perceived that more teens will choose to abstain from vaginal sex in the near future and will wait to have vaginal sex until marriage, as compared with oral sex (Table 5).

Significant within-subject interactions between adolescents' own experience with oral sex and perceptions of peer engagement were noted for 2 outcomes. Adolescents who have had oral sex reported a greater difference in the number of their peers who have had oral sex than vaginal sex (means: 56.42 for oral sex and 47.38 for vaginal sex) than adolescents without oral sex experience (means: 43.41 and 38.41;  $F = 4.36, P < .05$ ). Similarly, adolescents with oral sex experience reported a greater difference in the number of their peers who intend on having oral sex as compared with vaginal sex in the next 6 months (means: 47.68 and 37.82, respectively) than adolescents without oral sex experience (means: 36.26 and 32.66, respectively;  $F = 14.18, P < .001$ ). For both of these outcomes, adolescents with and without oral sex experience perceived that more adolescents are having and intend on having oral sex than vaginal sex.

### DISCUSSION

Most studies of adolescent sexuality have focused on vaginal intercourse, thus failing to consider how adolescents perceive the risks, benefits, and prevalence rates of oral sex as compared with vaginal sex and the extent to which adolescents view oral sex as more acceptable than vaginal sex. The results from this study provide important insight into how young adolescents perceive oral sex as compared with vaginal sex, with critical implications for health care providers.

We found that more adolescents have had and intend to have oral sex than vaginal sex. Although

the health risks associated with having oral sex are less than that of vaginal sex, oral sex does carry a risk for STI transmission, including HIV. In this study, the majority of adolescents acknowledged that oral sex could result in chlamydia and HIV, and they correctly evaluated oral sex as resulting in these health risks significantly less often than vaginal sex. However, of concern is the finding that a small but important percentage of adolescents believed that there is no chance of contracting chlamydia or HIV from oral sex. Although there is limited information on the actual rates of STI and HIV transmission from oral sex, it is clear that the risk is not zero.<sup>15–18</sup> That so many adolescents are having oral sex and view it as safe, perceiving little or no risk resulting from engaging in oral sex, stresses the importance of needing more research on oral sex transmissibility rates and increased health education about oral sex.

In addition to fewer health risks, the adolescents in this study perceived fewer social and emotional risks for oral sex compared with vaginal sex. In particular, the adolescents in this study believed that they are less likely to get a bad reputation, get into trouble, feel bad about themselves, or feel guilty from having oral as compared with vaginal sex. Furthermore, they believed that having oral sex is less of a threat to one's relationship with their partner. Adolescents also believed that oral sex is more acceptable than vaginal sex for adolescents their own age in both dating and nondating situations, and less of a threat to their values and beliefs, and that more of their peers will have oral sex than vaginal sex in the near future. These results, coupled with the finding that adolescents' own experience with and intentions to have oral sex seem to confirm their perceptions of less risk, may help to explain statistics showing that a far greater number of adolescents are engaging in oral sex than vaginal sex and at younger ages.<sup>1–9</sup> Although limited research has not found evidence for oral sex predicting coitus in the future,<sup>29</sup> some researchers have suggested that noncoital behaviors could be predictors for engaging in intercourse.<sup>7</sup> Limited evidence also suggests a relationship between oral sex and intercourse, although it does not specify a predictive order.<sup>30</sup> Clearly, the dearth of information about the relationship and timing of oral sex in relation to coitus and other sexual activity, especially with longitudinal data, should be addressed to gain a better understanding of adolescent sexual behavior and its progression over time.

It is interesting that the adolescents in this study did not perceive any differences in social or emotional benefits between having oral sex or vaginal sex, suggesting that although adolescents believe that they will feel less guilty and bad about themselves if they have oral sex, they are no more likely to have positive emotions resulting from either type of sexual behavior. It is also interesting that the adolescents had similar attitudes toward having oral sex and vaginal sex with someone with whom they are in love. This finding is consistent with the literature showing a correlation between a committed relationship and more favorable attitudes toward and less

risk associated with sexual activity as compared with casual sex relationships.<sup>31–33</sup>

To the extent that adolescents perceive oral sex as less risky, more beneficial, more prevalent, and more acceptable than vaginal sex, it stands to reason that adolescents are more likely to engage in oral than vaginal sex. These findings are important from a public health perspective and have critical implications for health practitioners. It is important that health care providers recognize the diversity of adolescent sexual experiences and that discussions regarding oral sex be included in clinical risk assessments and sexual health education.

Given the suggestion that adolescents do not view oral sex as sex and see oral sex as a way of preserving their virginity while still gaining intimacy and sexual pleasure,<sup>2,4,10</sup> they are likely to interpret sexual health messages as referring to vaginal sex. Unfortunately, most of the guidelines for clinical preventive services do not suggest specific education or guidance for any noncoital sexual activities. Although these guidelines do recommend talking to adolescents about their involvement in sexual behaviors and educating adolescents on ways to reduce their risk for STIs, they do not specifically address sexual risk assessment or education regarding oral sex. Instead, the guidelines typically use terms such as “sexually active” or “sexual behavior” or provide guidelines concerning only sexual intercourse.<sup>11–14</sup> It thus is imperative that health care providers specifically discuss oral sex and other noncoital sexual behaviors with adolescents, providing information and guidance about potential health risks and risk-reducing strategies such as barrier protection (eg, condoms, dental dams), as well as stressing the importance of talking to one’s sexual partners about their sexual history, including noncoital experiences. The results from this study also highlight the importance of discussing not only health risks with adolescents but also the social and emotional risks and benefits associated with oral sex. Furthermore, the fact that adolescents are having oral sex early in adolescence suggests that such education should begin prior to the high school years.

There are limitations to this study that must be noted. First, the generalizability of our findings is limited. Although our study sample is reasonably representative of the ethnic and socioeconomic groups of the larger school population from which we sampled, we do not have additional demographic and sexual experience information about the nonparticipants. In addition, the sensitive nature of the topic of study and that parental consent was required for participation may factor into reasons for our low participation rate. Nonparticipants could have chosen not to participate based on fears of their sexual experience being revealed to adults and thus getting into trouble or being stigmatized. Furthermore, our sample is limited to young adolescent ninth graders. Thus, our findings should be interpreted with caution because it is conceivable that they could be limited to young adolescents with relatively low levels of sexual experience. Clearly, more research is needed on older adolescents to investigate how risk

perceptions change as adolescents mature and gain more exposure to and have more experience with oral as compared with vaginal sex. Second, although vaginal sex was defined explicitly on the survey, oral sex was not well defined and thus we cannot be sure which behaviors were included in participants’ understanding of oral sex. This limits the interpretation of the findings because it is possible that participants included other behaviors, such as French kissing, in their interpretation of the term “oral sex.” Similarly, we did not assess the extent to which the adolescents in this study have given or received oral sex. This information is important because some studies have shown gender differences in the extent to which adolescents perform and receive oral sex.<sup>3,5–8</sup> For example, Newcomer and Udry<sup>5</sup> found that girls were more likely to have received oral sex than to have given it and that fellatio was less common than vaginal sex or cunnilingus in their overall sample. These results, however, are in contrast to other studies that have not found significant gender differences.<sup>3,6</sup> Third, although a number of risks were assessed, the health risks queried about were limited to pregnancy, chlamydia, and HIV. Future studies that examine adolescents’ perceptions of oral sex should include a wider range of STIs and other negative health outcomes. Finally, this study was not longitudinal and therefore cannot address the extent to which adolescents’ perceptions and attitudes are motivating their engagement in oral sex or are instead reflective of their own experiences.

Despite these limitations, this is 1 of the first studies to provide a more comprehensive understanding of adolescents’ perceptions of oral sex. The results clearly indicate that adolescents perceive oral sex as less risky, more beneficial, more prevalent, and more acceptable than vaginal sex. These findings stress the importance of understanding the beliefs and attitudes underlying the breadth of adolescents’ sexual experiences and that adolescents are engaging in a broad range of sexual behaviors that include oral sex. To help adolescents make informed sexual decisions, parents, health care providers, and other educators must broaden their clinical and educational efforts to include screening, counseling, and education about oral sex, including discussion of the potential health, emotional, and social consequences and methods to prevent negative outcomes for all sexual activities, including noncoital behaviors such as oral sex.

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