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Correlates of Oral Sex and Vaginal Intercourse in Early and Middle Adolescence

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Abstract

This study examined whether a comprehensive set of psychosocial factors was equally predictive of both adolescent vaginal intercourse and oral sex among 1,105 adolescents aged 12–16. Logistic regressions were used to examine the relationships between parental communication, religiosity, bonding to school, heavy drinking, sex expectancies, normative beliefs, and both oral sex and vaginal intercourse. Age, gender, bonding to school, heavy drinking, and negative health expectancies predicted both oral sex and vaginal intercourse. Parental communication was associated with vaginal intercourse but not oral sex. Behavior-specific normative beliefs were differentially associated with oral and vaginal sex.

Few studies have examined the risk and protective factors associated with oral sex, despite recent findings suggesting that adolescents are more likely to engage in oral sex than vaginal intercourse (Prinstein, Meade, & Cohen, 2003; Remez, 2000). National data indicate that between 36% and 49% of adolescents aged 15–19 report having engaged in oral sex (Gates & Sonenstein, 2000; Hoff, Greene, & Davis, 2003). These data are cause for concern given research showing that oral sex places individuals at some risk for HIV and sexually transmitted infections (STIs) such as human papillomavirus (HPV) and gonorrhea (Edwards & Carne, 1998). Given the prevalence and potential risks associated with oral sex, it is important to understand the psychosocial factors that are predictive of involvement in this behavior in order to design effective prevention programs.

A number of studies have found that psychosocial factors in the family, school, peer, and individual domains predict vaginal intercourse among adolescents (Kotchick, Shaffer, Forehand, & Miller, 2001; Resnick et al. 1997). Fewer studies have examined the relationship between these factors and oral sex. A recent study by Prinstein et al. (2003) indicates that adolescents who reported having had oral sex were more likely to report that their best friend had also had oral sex. In addition, a significant positive association was found between the friend's perceived number of oral sex partners and the total number of partners reported by the respondent. This was not the case when vaginal intercourse was examined, suggesting that adolescent oral sex behavior may be more susceptible to peer influences than vaginal intercourse. Adolescents who were rated as more popular by their peers were also more likely to have reported engaging in oral sex. However, among adolescents who had engaged in oral sex, those who reported a greater number of partners were less popular among their peers.

These findings indicate a strong, yet complex relationship between peer sexual behavior and oral sex.

The present study tests the implicit assumption underlying many sex education courses: psychosocial variables that predict adolescent vaginal intercourse extend to other risky sexual behaviors. The study will examine whether a comprehensive set of risk and protective factors is equally predictive of both oral sex and vaginal intercourse in early and middle adolescence. Specifically, a total of 11 psychosocial factors that have been previously identified as determinants of vaginal intercourse were examined to determine whether these same factors were associated with oral sex. Based on extant research, we expected that a majority of the factors examined would be equally related to both oral sex and vaginal intercourse. We also hypothesize that perceived peer behavior and attitudes will exhibit the strongest association with oral sex.

METHOD

Sample

The data were drawn from the first wave of a 3-year longitudinal study of adolescent sexuality conducted in 10 counties in northern and southern California. A list assisted sample of households from the greater San Francisco Bay Area (Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties) and Los Angeles County in California was used to recruit study participants. Data were collected using in-home computer assisted self-interviews (CASIs), that averaged between 25 and 35 minutes in length. The CASIs were administered to the adolescents in a private setting. Written parental consent was obtained for all respondents as per the approved IRB protocol.

A total of 1,105 youth completed the first CASI for a response rate of 75%. The average age of the participants was 14.1 ($SD = 1.42$, range = 12–16 years) with 48.2% ($n = 533$) females, and 102 Latinos (9.2%), 65 African Americans (5.9%), 53 Asian Americans (4.8%), 742 European Americans (67.1%), and 140 individuals of other ethnicities (13%). Owing to the small numbers within individual ethnic groups other than European American, a single dichotomized ethnicity item was created (white and nonwhite). In order to maximize data, missing values were replaced using a linear-regression imputation approach. Factor scores were developed using principal axis factoring with direct oblimin rotation and Bartlett factor scores were developed to represent each dimension.

Measures

Sexual activity—Oral sex was measured with a single dichotomous yes/no item, “Have you ever had oral sex with a girl/boy? (When a girl/boy puts her/his mouth or tongue on your genitals or you put your mouth or tongue on a girl’s/boy’s genitals).” Vaginal intercourse was measured by asking participants, “Have you ever had sexual intercourse? By sexual intercourse, we mean when a boy puts his penis into a girl’s vagina.”

Sex expectancies—Respondents answered 13 questions that assessed the perceived likelihood of personally experiencing a variety of outcomes as a result of engaging in sexual intercourse. A factor analysis identified three sex expectancy factors: positive expectancies, negative psychosocial expectancies, and negative health expectancies. Positive expectancies included *being more popular*, *feeling more loved and wanted*, and *feeling more attractive*. Negative psychosocial expectancies included *feeling guilty*, *getting into trouble with your parents*, and *disappointing people who are important to you*. Negative health expectancies included *getting pregnant/getting someone pregnant* and *getting a sexually transmitted disease*.

Parental communication about sex—Adolescents were asked whether or not their parents or guardians had ever talked to them about the facts of life, refusal skills, birth control and STI prevention strategies, and about parental attitudes toward the respondent having sex at his/her current age and before marriage. Dichotomous yes/no answers were summed to form a scale ranging from 0 to 7 with higher numbers reflecting more comprehensive parental communication about sexual issues.

Peer attitudes—Peer attitudes toward the respondent's personal sexual behavior were measured with two items. Respondents were asked to indicate how upset their three closest friends would be if the respondent had (a) oral sex and (b) sexual intercourse. Response options ranged from very upset (1) to not at all upset (4).

Peer behavior—Perceived peer sexual behavior was assessed by asking the respondents to indicate how many of their three closest friends had engaged in oral sex and how many had ever engaged in sexual intercourse. Response options ranged from none of them (1) to all of them (4). Respondents were also asked to indicate how many of their same-aged peers they thought had had oral sex and second, how many of their peers had had sexual intercourse. Response options ranged from none of them (1) to all of them (4). A factor analysis identified two items: perceived peer oral sex behavior and perceived peer sexual intercourse.

Bonding to school—Bonding to school was measured by asking youth three questions about their school experiences. Specifically they were asked, "In general, about how well do you do in school compared with other students in your classes"? Responses ranged from well below average (1) to well above average (5). They were also asked, "How important is it for you personally to do well in school"? Responses ranged from very important (1) to not very important (5). And, "How much do you like school"? Responses ranged from like it a lot (1) to dislike it a lot (5). A factor analysis yielded a single underlying school bonding factor.

Religiosity—Three items assessed adolescents' religiosity. Respondents were asked, "How often do you go to church, synagogue, mosque, temple, or other religious services?" and, "How often do you go to other church or religious activities such as youth groups, prayer meetings, bible study, or other religious volunteer groups?" Responses ranged from, never or less than once a year (1) to more than once a week (7). They were also asked, "How important or unimportant is religion to you, personally, in your everyday life?" Responses ranged from very important (1) to not at all important (4). A factor analysis identified a single religiosity factor.

Heavy episodic drinking—Heavy episodic drinking was measured by asking how often, during the past 30 days, respondents had five or more whole drinks within a 2-hour period. Because the responses were positively skewed, they were log-transformed before the analyses.

Background characteristics—Background variables included gender, age, and ethnic/racial identity. Respondents were allowed to select from among eight racial/ethnic categories; more than one category could be selected. For the current analyses, ethnicity was dummy coded into a single variable, non-Hispanic white versus nonwhite.

RESULTS

Overall, 10.9% of adolescents in the sample reported having engaged in oral sex while 8.0% reported having engaged in vaginal intercourse. A cross-tabulation of oral sex by vaginal intercourse suggests that of those who had reported having oral sex, 61% reported having had vaginal intercourse as well. In other words, the association between oral sex and vaginal intercourse was quite high. Significant differences emerged between those who were sexually experienced (i.e., had engaged in either oral sex or vaginal intercourse) and those who were

not (see Table 1). Adolescents who had engaged in oral sex were more likely to be older, report more heavy episodic drinking in the past month, believe that a greater number of their peers were sexually active, and perceive that their close friends would approve of their sexual activity than those who had not engaged oral sex. In addition, adolescents who reported having had oral sex reported lower levels of bonding to school, fewer negative psychosocial expectancies and negative health expectancies, and lower levels of religiosity than adolescents who had not had oral sex. Similar findings emerged when comparing adolescents who had engaged in vaginal intercourse with those who had not. Interestingly, adolescents who reported having had vaginal intercourse were more likely to have had their parents communicate with them about a greater number of sexual topics than adolescents who had not had vaginal intercourse.

A series of hierarchical logistic regression analyses were conducted to determine whether parental communication, bonding to school, religiosity, heavy episodic drinking, normative beliefs, and sexual expectancies predicted oral sex and vaginal intercourse after controlling for age, gender, and ethnicity. The results of the logistic regressions show that age and gender were associated with oral sex. Females and older adolescents were more likely to report engaging in these behaviors than were males and younger adolescents (see Table 2). Ethnicity was not significantly associated with oral sex. Adolescents who reported higher levels of school bonding were less likely to have engaged in oral sex ($OR = .79, p < .01$) than adolescents with lower levels of school bonding. Heavy drinking was positively related to oral sex ($OR = 4.28, p < .01$).

Sex expectancies and peer norms were also associated with oral sex. Adolescents who reported higher levels of negative psychosocial expectancies ($OR = .72, p < .05$) and negative health expectancies ($OR = .71, p < .01$) were less likely to report having had oral sex. Both peer oral sex behavior as well as perceived peer approval for oral sex were significantly associated with oral sex. Adolescents who perceived that a greater number of their peers had engaged in oral sex were more likely to report having oral sex than adolescents who believed that fewer of their peers had engaged in oral sex ($OR = 3.75, p < .01$). Peer approval of oral sex was positively and significantly associated with oral sex ($OR = 1.51, p < .05$). Perceived peer sexual intercourse and peer approval of sexual intercourse were not associated with oral sex.

As with oral sex, the results of the logistic regressions show that gender and age were associated with vaginal intercourse (see Table 2) while ethnicity was not. Parental communication ($OR = 1.27, p < .01$) and heavy drinking ($OR = 7.44, p < .0001$) were significantly and positively associated with vaginal intercourse. Negative health-related sexual expectancies, however, were negatively associated with vaginal intercourse ($OR = .67, p < .01$). Peer sexual intercourse behavior was significantly related to adolescent vaginal intercourse ($OR = 2.55, p < .01$) as was peer approval of sexual intercourse ($OR = 1.91, p < .01$). Bonding to school was negatively associated with vaginal intercourse ($OR = .83, p < .05$). Perceived peer oral sex behavior and peer approval of oral sex were not predictive of vaginal intercourse.

DISCUSSION

The current study examined the association between a comprehensive set of risk and protective factors and both oral sex and vaginal intercourse in early and middle adolescence. The hypothesis that the same risk and protective factors underlie different sexual behaviors is partially supported by the finding that a number of them were similarly predictive, in both direction and magnitude, of oral sex and vaginal intercourse. Generally, it was noted that personal attributes, such as age and gender, were equally predictive of both behaviors. Additionally, several constructs that were not specific to a particular sexual behavior, such as school bonding and heavy drinking, were also similarly predictive. One factor related to vaginal

intercourse, negative health expectancies, was also similarly predictive of both sexual behaviors.

A strong association emerged between parental communication and vaginal intercourse, but not oral sex. This might result from the fact that a majority of the parental communication items focused on vaginal intercourse, specifically emotional reactions to having sex, refusal skills for intercourse, and pregnancy and STI/HIV prevention information. Although some of these topics apply indirectly to oral sex, they may not be directly relevant. Future research should examine the role of particular communication topics on specific adolescent sexual behaviors.

Not surprisingly, behavior-specific normative items were differentially associated with the two sexual behaviors of interest. For example, perceived peer oral sex attitudes and oral sex behavior were associated with the respondent's own oral sex behavior but not with vaginal intercourse. These results illustrate the principle of compatibility (Ajzen, 1989) that stipulates that the association between measures of beliefs and behaviors is a function of their correspondence. That is, the more similar the two measures are in terms of action, target, context, and time, the stronger the statistical correlation. As a result, it is not surprising that given the focus on vaginal intercourse, parent-child communication about sex is significantly associated with vaginal intercourse, but not oral sex, and that perceived peer *oral sex* behavior is related to adolescent oral sex, but not vaginal sex. These findings underscore the need to address oral sex as a behavior separate from vaginal intercourse in order to provide youth with more comprehensive health promotion programs that speak of a range of sexual behaviors in which they may be participating.

Contrary to the proposed hypothesis, peer attitudes and behaviors were not the strongest predictors of oral sex. Rather, past month heavy drinking showed the strongest association with both oral sex and vaginal intercourse. Although using past month heavy drinking to predict lifetime sexual behavior confounds issues of timing and sequence, heavy drinking provides a useful index of adolescent risk taking. The finding that it relates to both sexual behaviors is consistent with problem-behavior theory (Jessor & Jessor, 1977), which posits that when factors in the personality and perceived environment systems create a proneness to engage in behavior that transgresses social and legal norms, individuals are likely to engage in a variety of risk behaviors. Thus, one problem behavior, such as past month heavy drinking, is likely to be more strongly related to another problem behavior (e.g., sexual behavior) compared with more distal individual variables in the perceived environment such as friends' approval of problem behavior and friends' modeling of problem behavior.

Peer attitudes and behavior, however, exhibited the second strongest relationship with oral sex underscoring the need for prevention programs to include a component that addresses normative beliefs. With regard to substance use, previous research demonstrated that correcting young people's overestimations of alcohol and drug use among peers is an effective strategy for reducing use among youth (Hansen & Graham, 1991). Efforts to change young people's perceptions about peer sexual behavior and approval may likewise result in reductions in the numbers of adolescents engaging in higher level sexual behaviors such as oral sex.

The current study has several limitations. First, although one-third of the sample was comprised of racial/ethnic minorities, the numbers in each specific category were small and thus combined as nonwhite for analytic purposes. Therefore, the ability to make ethnic comparisons was limited. Second, a majority of the respondents who were sexually active indicated that they had engaged in both oral sex and vaginal intercourse, thereby limiting our ability to tease out factors that are associated specifically with oral sex. However, given the high association between vaginal intercourse and oral sex ($r = .61$), it is surprising that unique predictors of sexual behavior emerge. Third, the numbers of sexually experienced youth in the sample were

relatively small (oral sex = 120; vaginal intercourse = 88), limiting the power of our analyses when comparing them with sexually inexperienced youth. Finally, it should be noted that these analyses were cross-sectional; thus, it cannot be determined what the direction of effect is between variables such as parental communication and adolescents' sexual behavior. Future assessments with the second and third waves of survey data will help address this issue.

Nonetheless, these findings do suggest that many of the factors related to vaginal intercourse are also associated with other sexual behaviors such as oral sex. Thus, efforts to impart information to youth about the potential negative health consequences of vaginal intercourse, for example, are also likely to generalize and influence other sexual behaviors. For other influences such as peer norms, specific messages tailored to individual sexual behaviors may be needed.

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References

- Ajzen, I. Attitude structure and behavior. In: Pratkanis, AR.; Breckler, SJ.; Greenwald, AG., editors. Attitude structure and function. Hillsdale, NJ: Lawrence Erlbaum Associates; 1989. p. 241-274.
- Edwards S, Carne C. Oral sex and the transmission of viral STIs. *Sexually Transmitted Infections* 1998;74:6–10. [PubMed: 9634307]
- Gates GJ, Sonenstein FL. Heterosexual genital sexual activity among adolescent males: 1988–1995. *Family Planning Perspectives* 2000;32(6):295–304. [PubMed: 11138866]
- Hansen WB, Graham JW. Preventing alcohol, marijuana, and cigarette use among adolescents: Peer pressure resistance training versus establishing conservative norms. *Preventive Medicine* 1991;20:414–430. [PubMed: 1862062]
- Jessor, R.; Jessor, S. Problem behavior and psychological development: A longitudinal study of youth. New York, NY: Academic Press; 1977.
- Kotchick BA, Shaffer A, Forehand R, Miller KS. Adolescent sexual risk behavior: A multi-system perspective. *Clinical Psychology Review* 2001;21(4):493–519. [PubMed: 11413865]
- Prinstein MJ, Meade CS, Cohen GL. Adolescent oral sex, peer popularity, and perceptions of best friends' sexual behavior. *Journal of Pediatric Psychology* 2003;28(4):243–249. [PubMed: 12730281]
- Remez L. Oral sex among adolescents: Is it sex or is it abstinence? *Family Planning Perspectives* 2000;32(6):298–304. [PubMed: 11138867]
- Resnick MD, Bearman PS, Blum RW, Bauman KE, Harris KM, Jones J, et al. Protecting adolescents from harm: Findings from the National Longitudinal Study of Adolescent Health. *Journal of the American Medical Association* 1997;278(10):823–833. [PubMed: 9293990]

TABLE 1
Differences Between Initiators of Oral Sex/Vaginal Intercourse and Non-Initiators, Mean (*SD*)

Variable	Oral Sex		Vaginal Intercourse	
	No (n = 979)	Yes (n = 120)	No (n = 1,011)	Yes (n = 88)
Female (%)	88.3	11.7	91.2	8.8
Male (%)	89.8	10.2	92.8	7.2
White (%)	88.2	11.8	91.5	8.5
Nonwhite (%)	90.9	9.1	93.1	6.9
Age	13.91 (1.40)**	15.28 (0.86)	13.94 (1.40)**	15.40 (.81)
Religiosity	.03 (1.06)**	-.27 (0.94)	.03 (1.06)**	-.35 (.87)
Bonding to school	.09 (1.33)**	-.67 (1.67)	.06 (1.36)**	-.63 (1.60)
Heavy drinking	.02 (0.12)**	.17 (0.30)	.02 (0.12)**	.20 (.32)
Parental communication	3.63 (1.95)	3.93 (1.89)	3.62 (1.95)**	4.18 (1.82)
Negative psychosocial expectancies	.13 (1.03)**	-1.01(1.06)	.10 (1.05)**	-1.12(1.00)
Negative health expectancies	.07 (1.22)**	-.62 (1.13)	.06 (1.22)**	-.69(1.17)
Positive expectancies	-.01 (1.16)	.08 (1.10)	-.01 (1.16)	.06 (1.08)
Peer oral sex	.56 (0.62)**	1.71 (0.83)	.59 (0.66)**	1.71 (.82)
Peer sexual intercourse	.41 (0.57)**	1.32 (0.87)	.42 (0.57)**	1.57 (.85)
Peer approval oral sex	2.46 (1.13)**	3.45 (0.75)	2.49 (1.13)**	3.48 (.72)
Peer approval sexual intercourse	2.14 (1.17)**	3.18 (1.01)	2.15 (1.17)**	3.40 (.80)

Note. Within-group (by sexual behavior) *t*-test comparisons were conducted.

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p<.01.

TABLE 2
Predictors of Oral Sex and Sexual Intercourse, Odds Ratios

Predictor	Oral Sex		Sexual Intercourse	
	OR	95% CI	OR	95% CI
Age	1.58 ^{***}	(1.23, 2.03)	1.74 ^{***}	(1.28, 2.38)
Gender	.39 ^{**}	(.22, .72)	.28 ^{***}	(.14, .56)
White	.87	(.49, 1.52)	.96	(.49, 1.89)
Religiosity	.95	(.72, 1.26)	.85	(.60, 1.19)
Bonding to school	.79 ^{**}	(.67, .93)	.83 [*]	(.69, 1.00)
Heavy drinking	4.28 ^{**}	(1.52, 12.05)	7.44 ^{***}	(2.40, 23.02)
Parental communication	1.10	(0.96, 1.25)	1.27 ^{**}	(1.09, 1.49)
Negative psychosocial expectancies	.72 [*]	(.53, .98)	.75	(.52, 1.09)
Negative health expectancies	.71 ^{**}	(.56, .88)	.67 ^{**}	(.51, .88)
Positive expectancies	.96	(.75, 1.22)	1.02	(.76, 1.37)
Peer oral sex	3.75 ^{**}	(2.44, 5.74)	1.43	(.90, 2.27)
Peer sexual intercourse	.92	(.59, 1.42)	2.55 ^{**}	(1.56, 4.15)
Peer approval oral sex	1.51 [*]	(.98, 2.32)	1.02	(.62, 1.68)
Peer approval sexual intercourse	1.14	(.80, 1.62)	1.91 ^{**}	(1.25, 2.94)

* $p < .05$;

** $p < .01$;

*** $p < .0001$.