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Oral vs. Vaginal Sex Experiences and Consequences Among First-Year College Students

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Abstract

To fully understand late adolescents' experiences of oral sex, we must consider both risk and normative developmental perspectives. Sexual experiences include a range of behaviors, but research on sexual behaviors and consequences focuses primarily on vaginal sex. Oral sex occurs at rates similar to vaginal sex, and carries some, though less, risk than vaginal sex. The current study examined the event-level prevalence and consequences of oral sex compared to vaginal sex with other-sex partners in first year college students. Daily data were from recently sexually active first year college students ($N = 253$ people, 834 days; M age, 18.4 years; $SD = 0.4$; 56% female; 31% Hispanic/Latino; 17% African American, 14% Asian American/Pacific Islander, 25% European American, 12% multiracial) who reported on sexual behaviors and consequences. Both positive (intimacy, physical satisfaction) and negative (worrying about health, guilt) consequences were less common for oral than vaginal sex. Gender differences suggested that female adolescents may find vaginal sex more rewarding than oral sex whereas male adolescents may find them equally rewarding.

Keywords

oral sex; sexual behavior; adolescents

INTRODUCTION

Although sexual experiences are multidimensional and include many behaviors, research on adolescent sexual behavior predominantly focuses on vaginal sex (defined here as a penis penetrating a vagina) in heterosexual samples. This focus likely reflects the fact that vaginal sex is the only behavior that carries the risk of pregnancy and carries one of the highest transmission rates of sexually transmitted infections (STIs) (Burchell, Winer, de Sanjosé, & Franco, 2006; Holmes, Levine, & Weaver, 2004). However, from such a risk perspective, the study of oral sex (defined here as a mouth coming in contact with another person's genitals) is still important. Although STI transmission is lower from oral than vaginal sex,

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adolescents are less aware of transmission and less likely to use protective methods from STIs with oral than vaginal sex (Downing-Matibag & Geisinger, 2009; Fielder & Carey, 2010b; Halpern-Felsher, Cornell, Kropp, & Tschann, 2005).

In addition, researchers have advocated studying adolescent sexual behavior from a normative developmental perspective that examines non-procreative sexual behaviors as a part of sexuality development and potential contributors to positive and negative outcomes (Tolman & McClelland, 2011). Consistent with this normative perspective, most individuals engage in oral sex by the end of adolescence/start of adulthood, and thus oral sex is part of the exploration and development of one's sexual self in this period (Bay-Cheng & Fava, 2011; Cornell & Halpern-Felsher, 2006; Dalton & Galambos, 2009). However, little is known about how individuals experience oral sex, and how this experience differs from vaginal sex. In this article, we examined prevalence and consequences of oral and vaginal sex in an ethnically diverse sample of college students. Use of daily data enabled us to examine within-person differences in oral compared to vaginal sex, and to understand proximal perceptions of sexual experiences.

Occurrence of Oral Sex During Adolescence

When researchers refer to adolescents as abstinent, sexually active, or transitioning to first sex, they most often are referring to the occurrence or absence of vaginal sex (Cummings, Auerswald, & Ott, 2014; Santelli et al., 2006). College students in the United States generally use similar definitions (Byers, Henderson, & Hobson, 2009). By this definition, about 62% of U.S. college students have been sexually active in their lifetime (Chambers, 2007). However, oral sex is as, if not more, common. By age 18 to 19, 70% of U.S. male adolescents and 63% of female adolescents report having engaged in oral sex with an other-sex partner (Chandra, Mosher, & Copen, 2011). Rates of engaging in oral sex are relatively similar to rates of vaginal sex for U.S. adolescents and college students, whether considering overall recent behavior (American College Health Association, 2008), daily-level behavior (Hensel, Fortenberry, & Orr, 2008; Patrick & Maggs, 2009), or engaging in these behaviors during hookups (Lewis, Granato, Blayney, Lostutter, & Kilmer, 2012). However, for late adolescents, both of these behaviors are relatively infrequent at the daily level, with more than 90% of days not involving either oral or vaginal sex (Hensel et al., 2008; Patrick & Maggs, 2009).

Consequences of Oral Sex

It is also important to understand consequences of oral sex from both risk and normative perspectives. From a risk perspective, consequences of sex can be reinforcing. Adolescents generally perceive oral sex to have fewer costs and fewer benefits than vaginal sex (Chambers, 2007; Vannier & Byers, 2013). Thus, if individuals perceive oral sex as less rewarding, they may be less likely to engage in oral sex compared to vaginal sex in the future. From a normative developmental perspective, consequences provide information about how adolescents perceive different sexual behaviors that may play a role in building their sexual subjectivity or satisfaction (Smith & Shaffer, 2013). However, most past work on consequences of sex has focused on vaginal sex and its long-term consequences such as unwanted pregnancies and STIs (Vasilenko, Lefkowitz, & Welsh, 2014; Welsh, Rostosky, &

Kawaguchi, 2000), depressive symptoms (Meier, 2007; Spriggs & Halpern, 2008), and perceived consequences of first vaginal sex. Existing research suggests that although some adolescents do report negative consequences such as regret and pain, positive consequences like pleasure and love are more common (O'Sullivan & Hearn, 2008; Smiler, Ward, Caruthers, & Merriwether, 2005; Wight et al., 2008).

A more complete understanding of the consequences of sex, however, necessitates collection of data close to the actual sexual event, thus reflecting individuals' immediate experiences and lessening retrospective recall (Bolger, Davis, & Rafaeli, 2003), allowing reports to be less influenced by subsequent events such as breakups. Although limited work has examined recent vaginal sex, one study found that college students reported a positive consequence (most commonly intimacy and satisfaction) on nearly all days they had vaginal sex, but a negative consequence (most commonly worry about health and guilt) on less than half of vaginal sex days (Vasilenko, Lefkowitz, & Maggs, 2012). Although not specific to consequences, other daily and ecological momentary assessment (EMA) studies have shown increased positive affect, decreased negative affect, and less social anxiety after reports of vaginal sex compared to measurement occasions when adolescents had not had sex (Fortenberry et al., 2005; Kashdan et al., 2014; Shrier, Shih, Hacker, & de Moor, 2007).

Less is known about the experience of oral sex compared to vaginal sex. For positive consequences, late adolescents in the U.S. perceive oral sex as less satisfying, pleasurable, and intimate than vaginal sex (Brady & Halpern-Felsher, 2007; Chambers, 2007; Halpern-Felsher et al., 2005). For negative consequences, guilt and regret are less associated with oral than vaginal sex (Brady & Halpern-Felsher, 2007; Eshbaugh & Gute, 2008; Halpern-Felsher et al., 2005). Adolescents accurately believe that oral sex is less likely to result in negative health outcomes, such as STIs and pregnancy than vaginal sex (Halpern-Felsher et al., 2005). College students report more negative reactions to hookups that include vaginal sex compared to other types of sex, whereas oral sex hookups are not associated with negative reactions (Lewis et al., 2012).

Past work has provided important information about consequences of oral sex, but questions remain. First, most studies do not examine actual experienced consequences at the within-person, event level, instead examining ratings of hypothetical scenarios (Halpern-Felsher et al., 2005; Shrier et al., 2007), between-person comparisons of people who have ever engaged in oral or vaginal sex (Lewis et al., 2012), or within person general perceptions of oral vs. vaginal sex (Chambers, 2007; Halpern-Felsher et al., 2005). In addition, prior research has examined long-term consequences of sex, which may be more influenced by intervening experiences. One exception is a study by Hensel et al. (2008), which used daily data to compare affect on oral compared to vaginal sex days (but did not directly examine specific perceived consequences). Thus, in the current study, we examined within-person consequences of sex on days of oral compared to vaginal sex.

The Role of Gender in Consequences of Sex

There are also gender differences in perceived consequences of oral and vaginal sex. Sexual double standards in the U.S. (Bordini & Sperb, 2012; Crawford & Popp, 2003) suggest that sex outside of marriage or committed relationships is more acceptable for men than women,

which may lead female adolescents to interpret their sexual behavior more negatively. Female adolescents and young women are more likely to feel bad, regretful, and unsatisfied and less likely to feel increased popularity from vaginal sex compared to male adolescents and young men (Brady & Halpern-Felsher, 2007; Higgins, Trussell, Moore, & Davidson, 2010; Tsui & Nicoladis, 2004; Wight et al., 2008). Young men are more likely to report physical satisfaction from oral sex than young women (Galinsky & Sonenstein, 2011).

Work examining the role of gender in relative consequences of oral and vaginal sex has focused on long-term consequences. Some research suggests that vaginal sex is more positive for male compared to female adolescents; vaginal sex is more closely linked to increased popularity, improved relationship quality, and orgasm than oral sex for male adolescents, but these differences are smaller or in the opposite direction for female adolescents (Brady & Halpern-Felsher, 2007; Halpern-Felsher et al., 2005; Richters, de Visser, Rissel, & Smith, 2006). Vaginal sex hookups are associated with increased negative consequences for female but not male college students, whereas oral sex hookups are not associated with negative consequences for either gender (Fielder & Carey, 2010a). In contrast, other research has demonstrated that oral sex is less strongly associated with female adolescents' pleasure and happiness, and more strongly associated with female adolescents' fear than vaginal sex, and these differences are significantly smaller for male adolescents (Brady & Halpern-Felsher, 2007; Vasilenko, Maas, & Lefkowitz, 2015). Daily/EMA studies of vaginal sex have found no significant differences in positive or negative affect after vaginal sex (Shrier et al., 2007) and few differences in negative consequences, although women do report more dissatisfaction and greater health concerns after vaginal sex with a non-relationship partner than men (Vasilenko et al., 2012). In the current study, we build on this past work by examining gender differences in the daily consequences of oral compared to vaginal sex. Due to prior conflicting results and the lack of studies of short-term consequences, it is difficult to predict the direction of gender differences for short-term consequences.

The current study used event-level daily data to examine experiences and consequences of oral and vaginal sexual behavior. This work extends past research by testing within-person differences in oral and vaginal sex consequences. By using each person as his or her own control, these analyses better control for potential confounding individual factors (Curran & Bauer, 2011). Specifically, the goals of the current study were to:

1. Describe the frequency of oral and vaginal sex in a sexually active sample.
2. Examine the perceived positive and negative consequences of engaging in oral sex compared to vaginal sex. Based on past research, we predicted that oral sex would lead to fewer positive and fewer negative consequences than vaginal sex.
3. Describe how gender moderates the association between type of sex and consequences.

METHOD

Participants

First year students at a large Northeastern U.S. state university received e-mail invitations to participate in the University Life Study (ULS), a seven-semester study of college student health behaviors, with a focus on alcohol use and sexual behaviors. Eligible individuals were 17–20 years old and were U.S. citizens/permanent residents. We used a stratified random sampling procedure with replacement to achieve a diverse sample in terms of gender and race/ethnicity. In total, 744 students (65.4% of students invited) provided informed consent and participated in Semester 1 (S1). Each semester, participants received an email with a secure link to the survey. Participants completed informed consent electronically. Each semester they completed one longer web-based baseline survey, and then each day for the next 14 consecutive days received an email inviting them to complete a daily survey about the prior day, resulting in up to 14 days of data per participant per semester. They received \$25 for the S1 and \$25 for the S2 baseline surveys, received \$3 to complete each daily survey, and received an \$8 bonus for each semester that they completed all 14 days of daily surveys.

In Semester 2 (S2), 87.3% of the S1 participants completed the web-based surveys. Of these participants, 39.6% ($N = 258$) reported engaging in oral and/or vaginal sex on at least one of the 28 days of daily surveys in S1 or S2. These rates were due to low rates of sexual behavior on any given day rather than due to low completion rates, as 97.3% of S1 participants who completed a baseline survey completed at least one daily survey. Participants contributed a total of 17,627 days of data during S1 and S2.

The 258 participants engaged in oral and/or vaginal sex on 861 days. Because vaginal sex, by our definition, can only occur with an other-sex partner, we removed 27 days of oral sex with same-sex partners (15.9% of all oral sex days) so that comparisons between oral sex and vaginal sex were not confounded by gender of partner. Thus, 253 participants who engaged in oral and/or vaginal sex on 834 days served as the data for the analyses in this article.

Participants in this analytic sample averaged 18.4 ($SD = 0.4$) years of age at S1. The sample was 56% female. Thirty-one percent of the sample identified as Hispanic/Latino. Among non-Hispanic/Latino participants, 17% identified as African American, 14% as Asian American/Pacific Islander, 25% as European American, and 12% multiracial. 96% of the sample identified as heterosexual, with 3.4% identifying as bisexual, and < 1% identifying as other ($n = 1$, “bicurious–more hetero though”).

Although data in this article were based on a sub-set of days from these 253 participants, we calculated average daily response rate for this sample based on all 28 possible days. The mean completion rate of the 28 days was 90% (25.1 days), with a median of 100%, and a range from 2 to 28 days.

Measures

Consequences of sexual behavior—On any day for which participants reported engaging in at least one sexual behavior, they were asked yes/no questions about their perceived positive and negative consequences of these behaviors (Vasilenko et al., 2012). We chose these consequences based on past research examining motives for and against sexual behavior (Cooper, Shapiro, & Powers, 1998; Patrick, Maggs, Cooper, & Lee, 2010; Sprecher & Regan, 1996). Whereas this past research examined motivations to have sex in order to achieve or avoid a particular consequence, we assessed whether participants actually experienced these consequences. We assessed three positive consequences grouped as physical satisfaction (two items: feel physically satisfied; feel a thrill or rush) and intimacy (one item: feel intimate or closer to a partner). We also assessed six negative consequences, categorized as worry about health (three items: worry about pregnancy; worry about STD exposure; worry about HIV exposure) and guilt (three items: went against morals or ethics; parents may find out; wish had not had sex). These categories have been empirically validated as groupings of motivations in past research (Cooper et al., 1998; Patrick et al., 2010). For each category that had two or three items, we created a categorical variable that indicated whether the participant experienced any of the consequences in that category. All consequences are shown in Table 1.

Daily oral and vaginal sexual behavior—Each day, participants answered questions about their prior day behavior, “from the time you woke up until you went to sleep.” Participants answered questions about six different sexual behaviors (kissing, touching, performing oral sex, receiving oral sex, vaginal sex, anal sex), including these three questions used in the current analyses: “Did you perform oral sex on a partner?”; “Did a partner perform oral sex on you?”; “Did you have vaginal sex?” Behaviors were defined as follows: “Oral sex refers to a person putting his or her mouth on a partner’s genitals”; “Vaginal sex refers to sex in which the penis penetrates the vagina.” If participants reported engaging in oral, vaginal, or anal sex on more than one occasion on that day, they were asked to answer the remaining questions about their most recent time. Performing and receiving oral sex on a given day were combined to indicate whether the participant engaged in oral sex on that day. We created a type of sex variable to indicate whether participants engaged in oral sex but not vaginal sex (coded as 1) or vaginal sex with or without oral sex (coded as 0). We coded variables this way because of our interest in the distinct salience of engaging in oral sex compared to vaginal sex.

On any day for which participants reported that they engaged in at least one sexual behavior, they were asked several follow-up questions, including the gender of their partner and their relationship with the partner. We dichotomized relationship partner into 1 = regular dating partner (regular dating partner, living together, engaged, married) or 0 = not regular dating partner (stranger, friend, casual dating partner). Each day, participants were asked “How many drinks of alcohol did you drink?” Anyone who reported more than 25 drinks was capped at 25.

RESULTS

Our first aim was to describe the frequency of oral compared to vaginal sex in a sexually active sample, as well as characteristics of these sexual experiences (e.g., partner's gender, relationship to partner). Of the larger ULS sample whose status could be determined at S2 ($N = 697$), 57.8% of participants reported that they had engaged in both vaginal and oral sex in their lifetime, 10.5% of participants reported that they had engaged in oral but not vaginal sex, and 1.4% reported that they had engaged in vaginal but not oral sex.

There were 834 sampled days across S1 and S2 when a participant engaged in oral and/or vaginal sex with an other-sex partner. That is, of the 17,627 days sampled, only 4.7% were days on which a participant had oral and/or vaginal sex with an other-sex partner. On days of oral or vaginal sex with an other-sex partner, participants had both oral and vaginal sex on 45.7% of days, had only oral sex on 18.6% of days, and had vaginal but not oral sex on 35.7% of days. Participants' sexual partner was a regular dating partner on 78.5% of oral and vaginal sex days, 66.5% of oral sex only days, and 79.5% of vaginal sex only days.

Table 1 shows percentages of participants who experienced each sex-related consequence on days they had oral sex, compared to days they had vaginal with or without oral sex. Participants reported experiencing at least one positive consequence on the majority of oral sex and of vaginal sex days, with high rates of physical satisfaction and increased intimacy as a result of engaging in oral and/or vaginal sex. Rates of experiencing negative consequences were substantially lower, with participants reporting at least one negative consequence on less than half of vaginal sex days and on about one quarter of oral sex days. No specific negative outcome of oral or vaginal sex occurred on more than 20% of days.

Our second and third aims were to examine the perceived positive and negative consequences of engaging in oral sex compared to vaginal sex, and to describe how gender moderated this association. To address these aims, we conducted four logistic multilevel models to estimate how type of sex and gender (0 = female, 1 = male) predicted experiencing consequences of sex (intimacy, physical satisfaction, health, and guilt). At Level 1 (days), we estimated the following:

$$\text{Prob}(\text{Consequence}=1|\pi) = \phi$$

$$\log[\phi / (1 - \phi)] = \pi_0 + \pi_1 * (\text{Oral Sex}) + \pi_2 * (\text{Non-relationship Sex}) + \pi_3 * (\text{Number of Drinks})$$

Here, the probability of experiencing a consequence was a function of an intercept (π_0) representing the average odds of experiencing the consequence for women on vaginal sex days, the effect of having oral compared to vaginal sex (π_1) and controls for the type of sexual partner (π_2) and number of drinks consumed (π_3). These coefficients were predicted by the following at Level 2:

$$\pi_0 = \beta_{00} + \beta_{01} * (\text{Male}) + \beta_{02} * (\% \text{ Oral Sex Days}) + \beta_{03} * (\% \text{ Oral Sex Days X Male}) + r_0$$

$$\pi_1 = \beta_{10} + \beta_{11} * (\text{Male}) + r_1$$

$$\pi_2 = \beta_{20}$$

$$\pi_3 = \beta_{30}$$

Here, the L1 intercept π_0 was predicted by an intercept for women (β_{00}), the effect of being male (β_{01}), the between-person measure of how often an individual had oral compared to vaginal sex (β_{02}), a gender by between-person oral sex interaction (β_{03}), and an error term (r_0). The within-person effect of oral compared to vaginal sex π_1 included an intercept (female; β_{10}) and a term for the effect of being male (β_{11}), which tests for gender differences in the effect of oral sex, and an error term (r_1). Finally, we controlled for the type of sexual partner (β_{20}) and number of drinks consumed (β_{30}).

Results are shown in Table 2. At the between-person level, students whose sex days more frequently included only oral sex were less likely to report intimacy as a result of sex than students whose sex days more frequently included vaginal sex (β_{02}). The coefficient examining gender differences for the intercept (i.e., vaginal sex days) was marginally significant ($p = .055$), indicating that the effect was marginally smaller for male students (calculated as the effect for the reference group [female students] and the difference for male students; $\beta_{02} * \beta_{03} = .72$ OR for male, compared to .23 OR for female). At the within-person level, there was a significant effect for gender, with female students 47% less likely to report intimacy as a result of having oral compared to vaginal sex (β_{10}), whereas male students were 55% *more* likely to report intimacy as a result of oral sex compared to vaginal sex (calculated as $\beta_{10} * \beta_{11}$). There was no significant effect of relationship status on intimacy consequences.

Women whose sex days more frequently included only oral sex (between-person) were 76% less likely to report physical satisfaction than students whose sex days more frequently included vaginal sex (β_{02}). There was a marginally significant gender difference in this association ($p = .052$), indicating male students had a lesser between-person difference in experiencing satisfaction as a result of more oral compared to vaginal sex ($\beta_{02} * \beta_{03} = .75$ OR for male, compared to .24 OR for female). At the within-person level, there was a significant effect for gender, with female students 74% less likely to report satisfaction as a result of oral compared to vaginal sex (β_{10}), whereas male students were only about 21% less likely to do so ($\beta_{10} * \beta_{11}$). There was no significant effect of relationship status on physical satisfaction.

There were no significant between-person effects of having oral sex on experiencing a health consequence. At the within-person level, female students were 87% less likely to report worrying about health as a result of oral compared to vaginal sex (β_{10}), whereas male students were only about 58% less likely to worry about health as a result of oral compared to vaginal sex ($\beta_{10} * \beta_{11}$). There was no significant effect of relationship status on worrying about health.

There were no significant between-person effects of having oral sex on experiencing guilt. At the within-person level, a significant gender interaction (β_{11}) indicated that male students were less likely to feel guilt as a result of oral compared to vaginal sex, whereas odds of guilt did not differ for female students by type of sex. In addition, students felt more guilt when they had sex with a non-relationship compared to relationship partner.

DISCUSSION

In this study, we compared consequences of oral sex to consequences of vaginal sex, demonstrating that positive consequences were quite common for both oral and vaginal sex, though less common for oral sex. Negative consequences were less common than positive consequences, and were less common for oral sex than for vaginal sex. There were a number of gender differences in the relative consequences of oral compared to vaginal sex.

Frequency of Oral Sex

In this college student sample, having engaged in both oral and vaginal sex by their first year in college was most common (60%), but having oral but not vaginal sex (10%) was more common than the reverse (1%). This finding was consistent with the limited prior work on college students, and work on early adolescents that has demonstrated that oral and vaginal sex are commonly initiated around the same time, and that vaginal sex occurs after oral sex and other sexual behaviors (Chambers, 2007; Lam et al., 2002; Lindberg, Jones, & Santelli, 2008; Song & Halpern-Felsher, 2011). Thus, these sexual behavior patterns seem similar whether initiated earlier in adolescence or later during emerging adulthood.

At the daily level, only about 5% of sampled days involved oral and/or vaginal sex. Thus, sexual behavior was a relatively uncommon part of students' daily lives, despite the fact that the majority of students had engaged in these behaviors at some point. On days that participants did have sex, however, engaging in both behaviors was most common, followed by engaging only in vaginal sex, and, least commonly, engaging only in oral sex. This finding supports past work with younger adolescents and college students, which suggests that vaginal sex is more common than oral sex, but that both occur relatively infrequently (Hensel et al., 2008; Patrick & Maggs, 2009). This finding is important in that society—and the media in particular—often portrays and expects risky sex to be a frequently occurring behavior on college campuses (Hines, Saris, & Throckmorton-Belzer, 2002). In fact, protected oral or vaginal sex carries little physical risk and, in actuality, occurs with less frequency than other behaviors that carry potential severe short-term (e.g., heavy alcohol use) (Patrick & Maggs, 2014) or long-term risks (e.g., tobacco use) (Centers for Disease Control and Prevention, 2013). Understanding the benefits and comparative risk of oral and vaginal sex in adolescents' sexuality development will provide sex education programs with clearer information to address the misconceptions held by society and media.

Consequences of Sexual Behavior

For these college students, engaging in sexual behavior, often with a dating partner, was a largely positive experience, as students report these experiences are physically and emotionally satisfying. These findings suggest the importance of studying sexual behavior from a normative developmental perspective that considers positive consequences such as intimacy and physical pleasure as factors that contribute to normative sexuality development. Scholars have argued that sexual experiences are normative and even essential for identity development and formation (Tolman & McClelland, 2011), and empirical evidence suggests that sexual experience in general, and college students' positive experiences the first time they had sex in particular, predict their current sexual subjectivity

and/or sexual satisfaction (Horne & Zimmer-Gembeck, 2005; Smith & Shaffer, 2013). Thus, positive consequences from day-to-day sexual experiences likely contribute to subsequent sexual self-concept and sexual satisfaction.

Consequences of sex differ by type of sex—Consequences of sex differed by type of sexual behavior. By examining associations at the within-person level, we were able to make stronger inferences by excluding stable, third variables (Curran & Bauer, 2011) and demonstrate that it is not simply types of people who choose to engage in oral or vaginal sex who differ in consequences, but that an individual's consequences differ based on his or her behaviors on a given day. Consistent with prior research using hypothetical scenarios or between-person comparisons (Brady & Halpern-Felsher, 2007; Chambers, 2007; Vannier & Byers, 2013), we found that, at the within-person level, adolescents were less likely to report feeling intimacy or satisfaction as a result of sex on oral sex compared to vaginal sex days. Similarly, past research on negative consequences demonstrates that guilt and regret are less associated with oral sex than with vaginal sex (Brady & Halpern-Felsher, 2007; Eshbaugh & Gute, 2008; Halpern-Felsher et al., 2005). In our study, at the within-person level, college students were less likely to report worrying about their health as a result of sex on days they had oral sex compared to days they had vaginal sex. Thus, college students were generally experiencing both fewer positive and fewer negative consequences of oral sex than of vaginal sex.

Vaginal sex may be more emotionally charged—both positively and negatively—due to its unique status as a behavior that marks the transition from abstinent to sexually active by both researchers and adolescents (Byers et al., 2009). Thus, adolescents may not ascribe the same meaning or importance to oral sex as they do to vaginal sex, seeing more costs and more benefits to vaginal sex (Chambers, 2007; Vannier & Byers, 2013). Adolescents' interpretation of their sexual behaviors can influence their mental health (Vasilenko et al., 2014), and thus our findings suggest that vaginal sex may be associated with both more positive mental health outcomes and more psychological distress compared to oral sex. In addition, these evaluations of sexual behaviors may influence likelihood of engaging in these behaviors in the future (Vasilenko et al., 2012), and adolescents may be more motivated to engage in vaginal compared to oral sex in the future due to perceptions of more positive consequences. As a result, oral sex may play a different role in normative sexuality development, potentially leading to less change in sense of sexual self and mental health outcomes than vaginal sex.

Gender matters—Past work, although mixed, suggests that women experience more negative and fewer positive consequences of sexual behavior than men (Brady & Halpern-Felsher, 2007; Sprecher, 2014; Wight et al., 2008). In the current study, for positive consequences, female adolescents were less likely to report feeling intimate with their partner and feeling physically satisfied as a result of sex on days they had oral sex compared to days they had vaginal sex, whereas the difference was smaller or in the opposite direction for male adolescents. These findings support past research at a global level with younger adolescents that suggests that female adolescents perceive a smaller benefit from oral compared to vaginal sex for pleasure compared to male adolescents (Brady & Halpern-

Felsher, 2007). Thus, female adolescents may experience more intense feelings, both physical feelings like satisfaction, and relational feelings like intimacy, as a result of vaginal compared to oral sex. For male adolescents, these two types of behaviors may be more similar experiences. It may be that the sexual double standard and the high value that society places on female virginity (Bordini & Sperb, 2012; Crawford & Popp, 2003; Sprecher & Regan, 1996) make the act of vaginal sex more different from oral sex for women than it is for men, who do not have similar pressure toward virginity. That is, the social pressure on women to remain virgins, generally defined as abstaining from vaginal sex (Sprecher & Regan, 1996), makes women perceive a greater difference between engaging in oral and vaginal sex.

In terms of negative consequences, although oral sex resulted in less worrying about health than did vaginal sex for both female and male adolescents, the difference was greater for female than for male adolescents. Because pregnancy may be experienced as a more immediate concern for female than male adolescents, vaginal sex may have more health salience for women than oral sex does. Research on first vaginal sex generally suggests that vaginal sex results in more negative consequences such as regret for female than for male adolescents (Brady & Halpern-Felsher, 2007; Sprecher, 2014; Wight et al., 2008). In the current sample, there were similar findings for recent sex, with male adolescents less likely to feel guilt as a result of oral compared to vaginal sex, whereas female adolescents' guilt did not differ by type of sex. Overall, these gender differences suggest that female adolescents may find vaginal sex more rewarding than oral sex, whereas male adolescents may find them equally rewarding. From a normative developmental perspective, women then likely incorporate these differences in experienced consequences of vaginal vs. oral sex into their sexual self-concept (Tolman & McClelland, 2011). As a result, it is possible that female adolescents, more so than male adolescents, develop a sexual self-concept that includes greater desire for vaginal sex over only oral sex, potentially putting themselves at higher physical risk from future sexual behavior.

Our findings have several limitations that warrant caution in interpretation and suggest future directions for new research. First, we focused on one college sample at a predominantly residential university. Findings cannot be generalized to college students at other types of institutions (e.g., religious universities, commuter colleges) or to late adolescents who do not attend college. Second, given our interest in comparing oral to vaginal sex, we focused our examination to behaviors with other-sex partners. However, in our larger sample, about 15% of oral sex only days were with same-sex partners. Future research should consider the consequences of different types of sex for same-sex partnerships, including oral sex, genital touching, and (for men) anal sex. In addition, many lesbian, gay, and certainly bisexual individuals have sexual experiences with both same- and other-sex partners (Morgan, 2014). Understanding the consequences of partner gender for sexual minority youth may be particularly important for better understanding the process of realizing one's sexual identity and coming out.

Third, in this sample, condom use rarely occurred on oral sex days. Thus, using condoms was confounded with type of sex, which may partially explain differences in consequences. Fourth, our research focused on comparing any oral sex to vaginal sex. Performing and

receiving oral sex differ in terms of stimulation and climax (Pinkerton, Cecil, Bogart, & Abramson, 2003), which likely impacts perceived consequences. Future research should consider consequences of performing and receiving oral sex separately, which we did not have the power to do because of the low occurrence of performing or receiving oral sex in isolation. Finally, future work should consider how consequences of sex predict subsequent sexual motives, future sexual behaviors including condom use, or psychological well-being and mental health. For instance, positive reactions to hookups predict future likelihood of engaging in subsequent hookups (Owen, Fincham, & Moore, 2011). A better understanding of how positive and negative consequences predict future choices about oral and vaginal sex could help to inform messages conveyed in prevention programming aimed to help late adolescents make sexual decisions.

In summary, this study contributed to the literature on oral sex by demonstrating that the majority of college students have engaged in oral and vaginal sex at some point, but that the occurrence of these behaviors at the daily level is relatively rare. Our findings advance research on consequences of oral sex compared to vaginal sex by demonstrating that, at the within-person level, oral sex is associated with a lower likelihood of experiencing both positive and negative consequences, and that gender moderates this association. These results contribute to our understanding of oral sex as a normative part of sexuality development, with consequences distinct from vaginal sex.

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Table 1

Percentage of Days Participants Reported Consequences of Sex by Type of Sex

	Oral Only (19.3%)	Vaginal (81.7%)
Positive Consequences	87.7	95.0
Intimacy		
Feel intimate or closer to a partner	73.5	87.8
Physical Satisfaction		
Feel physically satisfied	63.2	80.8
Feel a thrill or rush	42.6	55.4
Negative Consequences	27.7	40.2
Health		
Worry about pregnancy	5.2	17.2
Worry you were exposed to HIV/AIDS	5.2	5.3
Worry you were exposed to another STI	4.5	6.2
Guilt		
Went against your morals or ethics	11.0	10.5
Worry your parents might find out	4.5	7.1
Wish you had not had sex	2.6	5.3

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Table 2
 Logistic Multi-level Models Predicting Probability of Experiencing Interpersonal Consequences of Sex by Gender and Vaginal/Oral Sex

	Intimacy		Physical Satisfaction		Health		Guilt	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Average Odds (Vaginal Sex Day) π_0								
Intercept (Female) β_{00}	5.37***	4.10, 7.04	6.04***	4.66, 7.83	0.29***	0.21, 0.39	0.25***	0.18, 0.34
Male β_{01}	0.56*	0.34, 0.91	0.71	0.44, 1.14	1.15	0.71, 1.87	1.01	0.63, 1.62
% of Days Oral Sex (Female) β_{02}	0.23**	0.12, 0.64	0.24**	0.11, 0.52	0.66	0.29, 1.54	1.13	0.51, 2.54
% of Days Oral Sex X Male β_{03}	3.14 ⁺	0.98, 10.11	3.09 ⁺	0.99, 9.64	0.64	0.21, 1.95	0.60	0.21, 1.75
Oral Sex Days π_1								
Intercept (Female) β_{10}	0.53**	0.30, 0.92	0.26***	0.16, 0.41	0.13***	0.09, 0.20	0.84	0.55, 1.29
Male β_{11}	2.92*	1.02, 8.40	3.02*	1.22, 7.48	4.48**	1.89, 10.64	0.43**	0.24, 0.79
Non-Relationship Sex π_2								
Intercept β_{20}	0.60	0.27, 1.34	0.61	0.24, 1.51	1.40	0.76, 2.59	2.22**	1.23, 4.00
Number of Drinks π_3								
Intercept β_{30}	0.94**	0.91, 0.98	1.0	0.94, 1.06	1.06*	1.01, 1.11	1.04 ⁺	1.00, 1.09

Note. N = 834 days, 253 individuals.

⁺ $p < .10$,

* $p < .05$,

** $p < .01$,

*** $p < .001$.