Published in final edited form as:

Arch Sex Behav. 2018 May ; 47(4): 1283–1293. doi:10.1007/s10508-018-1166-y.

Never Been Kissed: Correlates of Lifetime Kissing Status in U.S. University Students

Eva S. Lefkowitz, Ph.D.¹, Rose Wesche, Ph.D.², and Chelom E. Leavitt, Ph.D.³

¹Human Development & Family Studies, University of Connecticut, 348 Mansfield Rd., Unit 1058, Storrs, CT 06269-1058

²Center for AIDS Intervention Research, Department of Psychiatry and Behavioral Medicine, Medical College of Wisconsin, Milwaukee, WI

³School of Family Life, Brigham Young University, Provo, UT

Abstract

Kissing a partner occurs relatively early during adolescence, and thus, young adults who have never kissed are off-time from their peers. Substantial exploration in the areas of identity and intimacy occur during this period, and kissing may fulfill both of these functions, addressing autonomy and relatedness motives for sexual behaviors. We examined the prevalence and personal, contextual, and adjustment/health predictors of delayed onset of kissing. An ethnically and racially diverse sample of traditionally aged first year university students ($N = 738$; 50.7% female) completed online surveys. Only 14.2% of young adults had never kissed a partner on the lips. Compared to their peers who had kissed partners, young adults who had never kissed were more likely to be Asian American, less likely to be in a romantic relationship, were less extraverted, were more likely to be in the Honors College, and drank alcohol less frequently. In bivariate models but not the multivariate model, young adults who had never kissed were more neurotic, had mothers who were less facilitating of independence, and had lower self-esteem. Findings inform understanding of normative sexuality development, and inform future research on normative and off-time sexual behaviors in young adulthood.

Keywords

Kissing; sexual health; sexual behavior; young adulthood; college

Who doesn't remember their first kiss? For many, kissing serves as the first partnered sexual behavior (O'Sullivan, Cheng, Harris, & Brooks-Gunn, 2007), and the first kiss is often considered a very positive experience (Vasilenko, Maas, & Lefkowitz, 2015). Kissing a partner occurs relatively early in adolescent development, usually before other sexual behaviors (Regan, Durvasula, Howell, Ureño, & Rea, 2004; Welsh, Haugen, Widman, Darling, & Grello, 2005), and therefore, young adults who have never kissed a partner by the start of college are off-time from their peers.

Kissing is generally a positively valenced behavior in and of itself, and is linked to relationship satisfaction and commitment in adolescence and adulthood (Garcia, Cavalie, Goins, & King, 2008; Welsh et al., 2005; Wlodarski & Dunbar, 2013). Physical intimacy is important in romantic relationships (Muise, Giang, & Impett, 2014; Welsh et al., 2005), and kissing is a common aspect of that physical intimacy (Hughes, Harrison, & Gallup, 2007). Thus, kissing is distinct from many other sexual behaviors such as oral and penetrative sex in that it affords many of the positive aspects of other behaviors, without the risk of sexually transmitted infection and/or pregnancy.

Adolescence and the transition to adulthood are periods of substantial exploration (Arnett, 2000; Erikson, 1968). Erikson (1968) described adolescence as a period of identity exploration, and early adulthood as a period of intimacy exploration. Kissing may play a role for exploration in both identity and intimacy, given that kissing is a meaningful early sexual behavior (Welsh et al., 2005), and that sexual behaviors are important both to exploration of self (Arnett, 2000), and to forming intimate relationships with others (Muise et al., 2014). Understanding what distinguishes young adults who have never kissed a partner by the start of college from their peers who have kissed provides important information about normative sexuality development during this period of exploration, in that it identifies the prevalence and predictors of an off-time event. The goals of the current study, therefore, were to understand the prevalence of delayed onset of kissing, and what predicts this delayed onset.

Prevalence of Kissing

In early adolescence, engaging in vaginal sex is non-normative (Finer & Philbin, 2013). By the start of college, it is normative either to have engaged or not to have engaged in vaginal sex (American College Health Association, 2013). It is not until later in the 20's that it becomes non-normative to have never engaged in vaginal sex (Haydon, Cheng, Herring, McRee, & Halpern, 2014). In contrast, by the start of college, the majority of adolescents have kissed a partner in their lifetime. In fact, in a Canadian sample, over half had kissed someone by age 12–13 (Williams, Connolly, & Cribbie, 2008). Eighty-five percent of middle school students have kissed a partner in their lifetime (Halpern, Joyner, Udry, & Suchindran, 2000), and about 90% of college students report having kissed a partner, with an average age of onset of about 15.5 (Regan et al., 2004). Rates are even higher among adolescents in romantic relationships, with 92% of 12–21 year olds reporting kissing their most recent relationship partner at some point (O'Sullivan et al., 2007). In the current study, our first aim was to examine the prevalence of lifetime kissing at the start of college in a diverse sample of traditionally aged college students.

Predictors of Kissing

According to Self-determination theory, individuals may be motivated toward action due to both intrinsic and extrinsic reasons, in order to fulfill the needs of competence, autonomy, and relatedness (Ryan & Deci, 2000). Specific to sex, researchers describe sexual motivations as being either to approach or avoid sex, and either for autonomy/self or relatedness/social reasons (Cooper, Shapiro, & Powers; 1998; Patrick, Maggs, Cooper, & Lee, 2011). In the case of kissing, individuals may kiss or not kiss partners for autonomy

reasons, perhaps because of interest, curiosity, or sexual desire. On the other hand, individuals may kiss or not kiss partners for relatedness reasons, either because they feel pressure to engage (or not) in kissing, or because they want to comply with perceived norms from social groups.

Little is known about what differentiates young adults who have and have not ever kissed someone. In contrast, extensive research has examined differentiators of vaginal sex (see Zimmer-Gembeck & Helfand, 2008 for a review). Past work that has examined predictors of kissing has generally focused on demographic, identity, and relationship predictors of kissing, such as gender, ethnicity/race, sexual orientation, and romantic relationship status (O'Sullivan et al., 2007; Patrick, Maggs, & Lefkowitz, 2015; Regan et al., 2004; Smiler, Frankel, & Savin-Williams, 2011). In the current paper, our second aim was to test correlates of lifetime kissing at the start of college. Because prior research has demonstrated associations between kissing and demographic, identity, and relationship factors, we control for these factors. We then consider correlates in three categories based both on past work on correlates of vaginal sex and on relevant theories. We consider personal characteristics (i.e., religiosity, personality) because of the identity exploration of this period (Erikson, 1968) and because motivations to engage in kissing may be due to autonomy-related motivations (Cooper et al., 1998). We consider contextual characteristics (i.e., academic experiences, maternal relationship) because of the social context of identity exploration, the intimacy exploration of this period (Erikson, 1968), and because motivation to engage in kissing may be due to relatedness-motivations (Cooper et al., 1998). Finally, we consider adjustment/health characteristics (i.e., alcohol use, body mass index, and self-esteem) because being developmentally off time from peers in initiation of vaginal sex is often linked to adjustment issues (Boislard et al., 2016; Zimmer-Gembeck & Helfand, 2008), and because individuals who are motivated to engage in sex are often also motivated to drink alcohol (Patrick et al., 2011).

Personal characteristics

Little research has considered links between personal characteristics and lifetime participation in kissing. Limited evidence suggests that among students attending a Christian-affiliated university, more religious students are less likely to have kissed someone in their lifetime (McMillen, Helm, & McBride, 2011). In contrast to limited research on kissing, extensive research demonstrates that attending religious services more frequently and having more religious attitudes are associated with a decreased likelihood of early vaginal sex (for review, see Rostosky, Wilcox, Comer Wright, & Randall, 2004) and increased likelihood of being abstinent in the late 20's (Boislard, van de Bongardt, & Blais, 2016; Haydon et al., 2014). Indeed, religiosity may lead adolescents to be less motivated toward sex, due to both internalization of religious beliefs and social pressure to conform (Vasilenko, Duntzee, Zheng, & Lefkowitz, 2013). However, kissing is different from vaginal sex in that it is much more common for religious doctrine to forbid vaginal sex than to forbid kissing. Still, based on work on vaginal sex, we predicted that more frequent religious service attendance and holding more religious attitudes would be associated with a lower likelihood of lifetime kissing.

Research has linked personality characteristics to vaginal sex. Individuals higher in extraversion, perhaps because of being highly socially motivated, tend to engage in sexual behaviors earlier, more frequently, with more partners, and have an increased likelihood of vaginal sex hook-ups and more high risk behaviors (Gute & Eshbaugh, 2008; Hoyle, Fejfar, & Miller, 2000; Kurpisz et al., 2016; Miller et al., 2004; Schenk & Pfrang, 1986). College students or adults who are higher in neuroticism are more likely to have engaged in a sexual hook-up and have unprotected sex, and have more frequent vaginal sex (Gute & Eshbaugh, 2008; Hoyle et al., 2000; Kurpisz et al., 2016; Lahey, 2009). Based on this work on vaginal sex, we predicted that both extraversion and neuroticism would be linked to a higher likelihood of lifetime kissing.

Contextual characteristics

Context may play a role in sexual experiences, due to an environment and other people who may endorse particular values and expectations around sexual behavior. These contextual features likely lead to relatedness motivations to comply with perceived norms for sexual behaviors. In the current paper, we considered the academic environment by assessing honors college membership. Although we know of no prior work specific to honors college membership, evidence suggests that in middle school, being highly intelligent is associated with decreased likelihood of vaginal sex, and at least for boys, decreased likelihood of kissing (Halpern et al., 2000). Poor school performance is associated with early onset of sexual intercourse (see Zimmer-Gembeck & Helfand, 2008 for a review). Therefore, we predicted that young adults in the honors college would be less likely to have kissed a partner in their lifetime than other young adults.

Parenting characteristics may help to explain participation in sexual behaviors due to either autonomy or relatedness motivations (Cooper et al., 1998; Ryan & Deci, 2000). Individuals may internalize their parents' norms, leading to self-motivation, or they may make decisions due to motivation to please others. Adolescents whose parents are warm, positive, supportive, high in monitoring, or provide more rules tend to delay sexual intercourse, perhaps because they are more effective at transmitting their norms to their children, though these effects are modest (Buhi & Goodson, 2007; Zimmer-Gembeck & Helfand, 2008). In contrast, adolescents whose mothers are high in autonomy granting tend to engage in more sexual risk taking (Lanza, Huang, Murphy, & Hser, 2012). Based on these findings with vaginal sex, we predicted that young adults whose mothers were more facilitating of their independence would be more likely to have kissed a partner in their lifetime.

Adjustment/health characteristics

In general, adolescents who have vaginal sex early, and therefore are off-time from their peers, tend to have more adjustment and health concerns (Boislard et al., 2016; Zimmer-Gembeck & Helfand, 2008). More limited evidence suggests that remaining abstinent from vaginal sex into one's 20's is also associated with worse adjustment and more sexual health problems (Boislard et al., 2016; Sandfort, Orr, Hirsh, & Santelli, 2008; Vasilenko, 2017). In the current study, we considered whether being off-time for kissing would be linked to either positive or negative adjustment/health characteristics.

Consuming more alcohol on a given day increases college students' odds of kissing a partner that day (Patrick et al., 2015). However, this finding addresses normative, day-to-day variations in kissing, rather than the off-time status of students who have never kissed a partner. For vaginal sex, high school students who drink alcohol more frequently have a higher likelihood of having sex (Harvey & Spigner, 1995; see Zimmer-Gembeck & Helfand, 2008 for a review). Based on these findings, we predicted that young adults who consumed alcohol more frequently would be more likely to have kissed a partner in their lifetime.

Women who are overweight or have larger body mass index (BMI) tend to be less satisfied with their bodies or perceive themselves as less attractive (Markey & Markey, 2011; Lemer, Blodgett Salafia, & Benson, 2013). Positive body satisfaction is associated with increased likelihood of ever having penetrative or oral sex and having more frequent vaginal sex during college, though at earlier ages girls' body satisfaction may be linked to a decreased likelihood of having penetrative sex (Gillen, Lefkowitz, & Shearer, 2006; Woertman & van den Brink, 2012). Results are mixed as to how BMI or being overweight are directly associated with likelihood of vaginal sex. These associations tend to vary by participant age, and almost all of the work in this area focuses on women. Research on high school girls did not find associations; research on college students suggests an increased likelihood of recent penetrative sex for women with larger BMI; and research on adult women suggests increased likelihood of lifetime abstinence if overweight (Akers et al., 2009; Gillen et al., 2006; Haydon et al., 2014; Winter & Satinsky, 2016; Wiederman & Hurst, 1998). Given past results and the stigma of being overweight in American society, including in dating and sexual contexts (Puhl & Heuer, 2009), we predicted that students with larger BMI would be less likely to have kissed a partner in their lifetime.

Generally, results are mixed as to whether and how having engaged in vaginal sex in one's lifetime is associated with self-esteem (for a review see Goodson, Buhi, & Dunsmore, 2006). For instance, college students who have never engaged in hook-ups report better self-esteem than students who have engaged in hook-ups, whether vaginal sex or not (Paul, McManus, & Hayes, 2000). In early adolescence, higher self-esteem is associated with early sexual debut for boys but delayed debut for girls (Spencer, Zimet, Aalsma, & Orr, 2002). Individuals who have not resolved earlier stages of development may have lower self-esteem, which could lead to challenges in exploration of identity and/or intimacy (Erikson, 1968). In addition, lifetime abstinence from kissing by the start of college is uncommon, and indicates being off-time. Thus, we predicted that higher self-esteem would be associated with a higher likelihood of lifetime kissing.

Demographic, identity, and relationship factors

In the current paper we control for factors that others have identified as correlates of kissing. Specifically, more college men than women report never having kissed a partner (Regan et al., 2004). Asian Americans are more likely to report never having kissed a partner than are college students from other ethnic/racial backgrounds (Regan et al., 2004), and some evidence suggests that within romantic relationships, African American adolescents are less likely to have kissed their partner than European American adolescents (O'Sullivan et al., 2007). Having exclusively same sex partners is associated with later age of onset of kissing

among men (Smiler et al., 2011). College students are more likely to kiss when they are in a romantic relationship than when they are not (Patrick et al., 2015). Thus, we controlled for gender, ethnicity/race, sexual orientation, and romantic relationship status.

In summary, kissing is positively valenced and an important part of adolescent and adult relationships. However, little past work has considered personal, contextual, and adjustment/health predictors of late onset of kissing into young adulthood. We examine predictors of never having kissed a partner by the start of college, to help inform our understanding of normative and off-time sexuality development. Our research aims are (1) to examine the prevalence of lifetime kissing at the start of college; and (2) to examine correlates of lifetime kissing in three categories: personal characteristics, contextual characteristics, and adjustment/health characteristics.

Method

Participants

In 2007 the Registrar's office at a large land grant university in the northeastern United States provided a list of all first year university students' names, demographic, and contact information. We used stratified random sampling with replacement to achieve a diverse sample in terms of gender and ethnicity/race. To participate, students had to be 17–20 years old and U.S. citizens/permanent residents. Targeted students ($N = 1137$) received emails inviting them to participate in the University Life Study, a longitudinal study of college students' experiences with a focus on alcohol use and sexual behavior. In total, 744 students (65.4% of students invited) provided informed consent and participated in Semester 1, the data source for the current analyses. Participants received an email with a secure link to the survey, and completed informed consent electronically. They received \$25 for completing this survey.

Due to missing data on the kissing variable, our analytic sample consisted of 738 participants. This sample was 50.7% female. Students were allowed to report one or more ethnic and/or racial backgrounds, and based on these data, 21.8% of the sample was African American, 28.3% Asian American/Pacific Islander, 44.7% European American, and 25.2% Hispanic/Latino. Participants ranged in age from 16.9 to 20.8 years [$M = 18.4$, $SD = 0.4$]. Participants predominantly identified as heterosexual (98.1%), with 1.2% identifying as bisexual, 0.5% identifying as homosexual/gay/lesbian, and 0.1% identifying as other ("bicurious – more hetero though").

Measures

Lifetime kissing behavior—Students responded to the question “Have you and a partner ever kissed each other on the lips?” (0 = *no* and 1 = *yes*). Students also answered similar questions about their lifetime participation in touching under clothing, performing oral sex, receiving oral sex, vaginal sex, and anal sex.

Control variables—Students reported their gender (0 = *female*, 1 = *male*), and ethnicity/race (coded as 0 = *no* and 1 = *yes* for African American, Asian American/Pacific Islander, and Hispanic/Latino). Participants reported their sexual orientation, coded as 0 =

heterosexual, and 1 = sexual minority (*homosexual/gay/lesbian, bisexual, other*). Participants reported their romantic relationship status, which we then dichotomized into 1 = in relationship (*casually dating; serious romantic relationship, living together, engaged, married*) or 0 = not in relationship (*not dating*).

Personal factors—To assess religious service attendance, participants answered the question “How many times have you attended religious services during the past 12 months (52 weeks)?” To assess religious beliefs, participants completed a seven-item measure of the importance of religion in daily life (Rohrbaugh & Jessor, 1975). Each item contained four or five response choices. For instance, the question, “Which of the following best describes your practice of prayer or religious meditation?” had the following response options: “*Prayer is a regular part of my daily life*,” “*I usually pray in times of stress or need but rarely any other time*,” “*I pray only during formal ceremonies*,” and “*I never pray*.” We calculated an overall score across the seven items, accounting for the varying Likert scale length, with higher scores indicating that religion had more importance in the respondent’s daily life. Reliability was excellent ($\alpha = .92$). To assess personality, we used the International Personality Item Pool (Goldberg, 1999). Participants answered 10 questions that assess extraversion (e.g., “I don’t mind being the center of attention”) and 10 questions that assess neuroticism (e.g., “I am easily disturbed”) on a five-point scale ranging from 1 = *very inaccurate* to 5 = *very accurate*. Both sub-scales demonstrated excellent reliability ($\alpha = .87$ neuroticism, .88 extraversion).

Contextual factors—Participants reported whether they belonged to the university’s honors college (0 = *no*, 1 = *yes*). To assess participants’ relationship with their mother, participants completed the Parents as Facilitators of Independence subscale of the Parental Attachment Questionnaire (Kenny, 1985) with 14 questions targeted specifically at the relationship with the mothers (e.g., “respects my privacy”). Response options ranged from 0 = *not at all* to 4 = *very much*. Reliability was strong ($\alpha = .83$).

Adjustment/health—Participants who indicated that they had consumed alcohol in the past year answered the question, “During the last 30 days (one month), how often did you have any kind of drink containing alcohol? By a drink we mean half an ounce of absolute alcohol (e.g. a 12-ounce can [or bottle] of beer or cooler, a 5-ounce glass of wine, or a drink containing 1 shot of liquor or spirits)” on a scale ranging from 0 = *I did not drink any alcohol in the past month, but I did drink in the past* to 7 = *every day*. Participants who had indicated earlier in the survey that they had never consumed alcohol in the past 12 months were also coded as 0. We calculated body mass index from participants’ self-reported height and weight using the standard Centers for Disease Control and Prevention (2015) formula. Participants completed the 10-item Rosenberg (1965) self-esteem scale (e.g., “I feel good about myself”) on a five-point scale ranging from 0 = *never true* to 4 = *almost always true*. Reliability was strong ($\alpha = .84$).

Results

By Fall of their first year of university, 14.2% ($n = 105$) of participants indicated that they had never in their lifetime kissed a partner on the lips. Of these students, 4.8% ($n = 5$) had

engaged in another sexual behavior (two students only touching, one student touching and oral sex, one student only oral sex, and one student vaginal sex and oral sex). See Tables 1 and 2 for descriptive statistics by kissing group, as well as correlations between predictors.

We used logistic regression to examine correlates of lifetime kissing status. First, we performed bivariate logistic regressions separately for each correlate with lifetime kissing status as the dependent variable. Second, we performed one multivariate logistic regression, including all correlates of lifetime kissing status in one model: (1) control variables: gender, three ethnicity/race variables (African American/Black, Asian American, Hispanic/Latino), sexual orientation, and current romantic relationship status; (2) personal characteristics: religious service attendance, importance of religion in daily life, neuroticism, and extraversion; (3) contextual characteristics: honors college membership and mother's facilitating of independence; (4) adjustment/health characteristics: alcohol use frequency in past month, BMI, and self-esteem.

For control variables in the multivariate model, two correlates were significant. Asian American young adults were less likely to have kissed a partner in their lifetime than other young adults (see Table 3), with 28% of Asian Americans, compared to 7–11% of young adults from other ethnic/racial backgrounds, never having kissed. In addition, young adults in romantic relationships were more likely to have kissed someone than young adults who were not in romantic relationships, with 1% of young adults in relationships, compared to 22% of young adults not in relationships, never having kissed. Although not significant in the multivariate model, in the bivariate model Hispanic/Latino ethnicity was significant, with Hispanic/Latino Americans less likely to have never kissed than non-Hispanic/Latinos. Sexual orientation was not significant in either model, but no participants who identified as gay/lesbian/bisexual/other had never kissed a partner, compared to 15% of participants who identified as heterosexual.

For personal characteristics in the multivariate model, extraversion was significant. More extraverted young adults had a higher likelihood of having kissed a partner in their lifetime than less extraverted young adults. Although not significant in the multivariate model, neuroticism was significant in the bivariate model (odds ratio = .63 bivariate model, .72 multivariate), indicating that more neurotic young adults had a lower likelihood of having kissed a partner in their lifetime. To further examine this association, we performed an additional logistic regression that included the five control variables but not the other predictors. The association between neuroticism and kissing was significant in this model as well (OR = .58, $p < .01$).

For contextual characteristics, honors college membership was significant in the multivariate model. Being part of the honors college was associated with a decreased likelihood of having kissed a partner in one's lifetime, with 32% of young adults in the honors college, compared to 13% of other young adults, never having kissed. Although not significant in the multivariate model, mother's facilitating of independence was significant in the bivariate model (odds ratio = 1.63 bivariate model, 1.57 multivariate), indicating that when mothers were more facilitating of independence, young adults were more likely to have kissed a

partner. This association was also significant in a model that included all control variables, but not the other predictors ($OR = 1.49, p < .05$).

Finally, for adjustment/health correlates, recent alcohol use was significant. Young adults who drank more frequently were more likely to have kissed a partner than young adults who drank less frequently. In the bivariate model, self-esteem was also significant, indicating that young adults with better self-esteem were more likely to have kissed a partner than young adults with worse self-esteem. This association was also significant in a model that included all of the control variables, but not the other predictors ($OR = 1.95, p < .01$). However, the odds ratio in the full multivariate model was close to 1.0, indicating that in the context of other predictors, self-esteem did not continue to explain lifetime kissing.

We reran all analyses without the 5 participants who had never kissed a partner but had engaged in some other form of sexual behavior. Results were similar, with no changes in which variables reached statistical significance.

Discussion

What is unique about students who have not kissed a partner by the start of college? We examined the extent to which young adults who had not kissed a partner differed from their peers on several personal, contextual, and adjustment/health characteristics. Results did not demonstrate an overall pattern that participants who had not kissed a partner were less healthy or well-adjusted than their peers. For instance, this group demonstrated some protective factors such as honors college membership and lower rates of alcohol use. However, in other ways, young adults who had never kissed a partner did demonstrate worse adjustment, with higher rates of neuroticism and lower self-esteem.

About 14% of young adults had never kissed a partner by the Fall of their first year of college. This rate of never having kissed a partner was slightly higher than in prior work (O'Sullivan et al., 2007; Regan et al., 2004), most likely because of differences in sampling: we used a different (not convenience) sampling procedure than prior work with college students, and other work that has used similar sampling has not focused on college students. Our rates for European American young adults were similar to rates reported in prior work; however, Asian Americans were less likely to have ever kissed a partner than other young adults. Nevertheless, the findings replicate prior work that young adults who have not kissed a partner by the start of college are off-time from their peers, at similar rates to adolescents who have initiated vaginal sex by age 14–15 (Herbenick et al., 2010). Thus, we can consider not having kissed a partner by the start of college to be non-normative or off-time. Given that this period of development includes exploration in terms of both identity and intimacy (Erikson, 1968), having delayed sexual exploration may limit this aspect of both identity and intimacy exploration.

Religiosity and Personality Correlates of Kissing

Young adults who had never kissed a partner did not differ from their peers in terms of religious behavior or attitudes, although prior work demonstrates links between lifetime vaginal sex and religiosity (Rostosky et al., 2004). Although many religions prohibit vaginal

sex outside of marriage, few religions have the same restrictions on kissing, and thus religious youth may view kissing as an acceptable way to express physical affection with romantic partners. Any internalization of religious motives against vaginal sexual behavior does not appear to transfer to a prohibition against kissing.

In the current study, young adults who had never kissed a partner were less extraverted than other young adults. This finding mirrors prior work on vaginal sex (Gute & Eshbaugh, 2008; Hoyle et al., 2000; Kurpysz et al., 2016; Lahey, 2009) as well as Eysenck's (1976) original conceptualization of extraverts being oriented toward exploration and sexuality. Young adulthood generally involves sexual exploration (Patrick et al. 2015, Regan et al., 2004), but being less socially oriented may inhibit this exploration, delaying participation in even mild sexual behaviors. In contrast to both prior work on vaginal sex (Gute & Eshbaugh, 2008; Hoyle et al., 2000; Kurpysz et al., 2016; Lahey, 2009) and our predictions, however, young adults who had never kissed tended to be more neurotic than other young adults. This effect did not remain in the model with other correlates present. The prior work on this area focused on risky behaviors such as unprotected vaginal sex, rather than on time or normative behaviors. In fact, our findings, although tentative given that they did not hold in the multivariate model, align with Eysenck's original conceptualization that the anxiety of neuroticism would make individuals avoid sexual behavior. Thus, never having kissed a partner appears associated with personality characteristics indicative of lack of exploration, further evidence that kissing by the start of college is likely a normative developmental behavior.

Context Matters for Delayed Onset of Kissing

In the current study, we considered honors college membership as a contextual factor. Although prior work has not considered honors college membership per se, associations exist between academic indicators such as intelligence and school performance and sexual behavior during early adolescence (Halpern et al., 2000; Zimmer-Gembeck & Helfand, 2008). In the current study, membership in the honors college was associated with increased likelihood of never having kissed a partner. Honors college students tend to be highly motivated in the realm of academics, and likely have peers with similar motivations. It may be that young adults with high academic motivation experience a context that values academics over sexual exploration, and therefore, are off-time in normative sexuality development. However, honors college membership is likely confounded with intelligence and grades, and thus, it is also possible that this association reflects an individual factor more than a contextual factor. Future work should examine a range of intrapersonal and contextual factors associated with Honors college membership, including academic motivation, academic performance, and academic orientation of peers, in order to better determine the underlying cause of these associations.

In the current study, young adults whose mothers were less facilitating of independence had a higher likelihood of never having kissed a partner, though this finding did not remain in the model with other correlates. Past work demonstrates that having a mother high in autonomy granting is associated with more sexual risk taking (Lanza et al., 2012). Parental autonomy granting is a normative contextual expectation by young adulthood (Eccles et al., 1991), and

should be particularly salient when offspring have moved away from their home of origin for college. Adolescents whose parents provide opportunities for autonomy develop skills in decision making and therefore improved self-concept (Eccles et al., 1993; Holmbeck & O'Donnell, 1991), which may allow more opportunity for identity exploration. Thus, it is possible that not experiencing enough autonomy granting or independence facilitating may lead to delayed exploration in sexual behaviors because of either undeveloped decision making skills to engage in partnered sexual behavior or lower self-concept.

Is It (Un)Healthy Not to Have Kissed a Partner by the Start of College?

Young adults who had never kissed a partner consumed alcohol less frequently than other young adults, with students who had never kissed a partner having consumed alcohol less than once, on average, in the past month (compared to more than 2–3 times for others). Our findings are similar to prior work at the daily level, which indicates that consuming alcohol increases college students' likelihood of kissing a partner on a given day (Patrick et al., 2015). In addition, alcohol use is associated with an increased likelihood of vaginal sex during high school (Zimmer-Gembeck & Helfand, 2008). During college, alcohol-based settings are a frequent context for engaging in sexual behaviors (Kuperberg & Padgett, 2015), and students who consume alcohol less frequently may have fewer opportunities to find potential partners. On the one hand, this low rate of alcohol use indicates a lower risk profile for young adults, given that alcohol use at this age often involves heavy drinking and associated negative consequences (Hingson, Zha, & Weitzman, 2009; Schulenberg & Maggs, 2002). On the other hand, during college, experimentation with alcohol is normative and engaging in alcohol use is a social activity (Schulenberg & Maggs, 2002). Young adults who have not engaged in sexual exploration by kissing also appear to be engaging in less exploratory behavior through alcohol use. This decreased experimentation may provide fewer opportunities for identity exploration, and could potentially result in lack of identity achievement (Erikson, 1968).

Past research has been mixed on associations between BMI or self-esteem and likelihood of vaginal sex (Akers et al., 2009; Gillen et al., 2006; Goodson et al., 2006; Haydon et al., 2014). In the current study, we did not find an association between BMI and likelihood of kissing. Thus, despite the stigma of being overweight in American society (Puhl & Heuer, 2009), larger body size did not decrease the likelihood of kissing by young adulthood. We did, however, find that young adults who had never kissed a partner had lower self-esteem, though this association did not remain significant in the models with other correlates. The direction of this association is unclear, and is likely explained by other correlates of kissing.

Conclusions, Limitations, and Future Directions

In summary, compared to their peers, young adults who have never kissed a partner have a profile of being more neurotic, less extraverted, drinking less frequently, and being an honors student. One might view this profile as a low risk, highly studious profile, and some parents and educators might perceive the avoidance of risk and focus on academics as a model college student. On the other hand, in the United States, the college years are a period of exploration and experimentation. Late onset of vaginal sex is associated with arousal and orgasm problems, at least for men (Sandfort et al., 2008). Thus, it is possible that delayed

participation in normative sexual behavior is indicative of an overall pattern of more withdrawal from normative social activities, inhibiting, or at least delaying, opportunities for exploration, which might relate to overall sexual health. Kissing is a form of physical intimacy and is linked to positive outcomes such as relationship satisfaction and commitment (Garcia et al., 2008; Muise et al., 2014; Welsh et al., 2005; Wlodarski & Dunbar, 2013), and thus, delayed participation in kissing may be associated with decreased individual or relationship wellbeing. It is also possible that not having kissed by young adulthood is indicative of a larger pattern of inhibition or withdrawal. These findings provide further evidence that it is not only non-normative to delay kissing into young adulthood, but that it may also be unhealthy.

However, it is important to recognize that although multiple factors were associated with delayed participation in kissing, there is not necessarily an average individual who exhibits all of these characteristics. Instead, there are likely multiple profiles of delayed participation in kissing. For instance, some individuals may choose to abstain from kissing into young adulthood, whereas other individuals may have wanted to engage in kissing, but not have found a willing partner. Research on abstinence from vaginal sex suggests that there is not one pattern that leads to abstinence, but instead, individuals have distinct reasons for being abstinent, both voluntary and involuntary (Donnelly, Burgess, Anderson, Davis, & Dillard, 2001; Haydon et al., 2014). Thus, although we found several predictors of kissing status in the multivariate model, it is unlikely that any given individual differs from the mean on all of these dimensions. It may be instead, for instance, that some individuals are oriented toward academics and choose delayed onset of kissing; others may wish to engage in kissing or other sexual behaviors but due to high neuroticism or low extraversion, may be unable to find willing partners. Individuals who have chosen to delay onset of kissing may differ from their peers who have involuntarily delayed kissing. For instance, research on involuntary celibacy from vaginal sex suggests that these adults consider themselves to be off-time in their sexuality development, expressing concern about continued celibacy as a result (Donnelly et al., 2001). Future research that considers person-centered approaches may help to identify these sub-types of individuals. In addition, some adolescents and young adults choose to avoid sexual behaviors, even after first engaging in such behaviors (Byers, O'Sullivan, & Brotto, 2016), suggesting that there may be substantial variability in our group of students who had kissed in their lifetime in terms of their current participation in kissing. Considering kissing avoidance among individuals who have previously kissed a partner could increase our understanding of normative sexuality development.

The current study had several limitations that suggest future directions. First, we focused on a college sample. Experiences of never having kissed a partner by the end of high school may be different for young adults who do not enter a college environment given different contextual experiences. For instance, by the end of high school, individuals who do not attend college differ from their college-attending peers in a number of ways, including extent of focus on academics and transition into adult roles, which may contribute to differential motivations toward sexual behavior. Thus, future research should consider non-college attending young adults. Second, our sample included very few young adults who identified as sexual minority. Given that sexual minority young adults experience some differences around sexuality, including stigma or judgment about their behavior (Morgan, 2014), it is

likely that some of the reasons for abstaining from kissing into young adulthood would differ for sexual minority young adults. More generally, we do not have information on the 35% of the students who declined participation, and these students might systematically differ from participants. Third, some of the available measures were limited. For instance, we controlled for current relationship status, but lifetime experience with romantic relationships might be a better indicator of romantic relationship experience than current status. Finally, we focused on a narrow age range, but future research should consider predictors of lifetime kissing status at different ages, including early adolescence, when it is normative both to have engaged in kissing and not, and later ages, when not engaging in kissing would be even less normative. Such work could also follow individuals across adolescence and young adulthood, considering which correlates precede kissing, and which might follow kissing.

In summary, not kissing a partner by the start of college is off-time compared to peers. We identified a number of personal, contextual, and adjustment/health correlates of delayed onset of kissing a partner. Young adults who had never kissed a partner were not overall less healthy than their peers, but instead, demonstrated some possibly protective factors, such as less frequent alcohol use and more orientation toward academics, and some indicators of worse adjustment, such as more neuroticism. These findings provide important information about normative sexuality development, and inform future research on understanding normative and off-time sexual behaviors in young adulthood.

Acknowledgments

Funding: This study was funded by National Institutes of Health (grant number R01AA016016) to Jennifer Maggs.

References

- Akers AY, Lynch CP, Gold MA, Chang JC-C, Doswell W, Wisenfeld HC, Bost J. Exploring the relationship among weight, race, and sexual behaviors among girls. *Pediatrics*. 2009; 124:e913–e920. [PubMed: 19841106]
- American College Health Association. National college health assessment: Reference group data report Fall 2013. Baltimore, MD: American College Health Association; 2013.
- Arnett JJ. Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*. 2000; 55:469–480. [PubMed: 10842426]
- Boislard M-A, van de Bongardt D, Blais M. Sexuality (and lack thereof) in adolescence and early adulthood: A review of the literature. *Behavioral Sciences*. 2016; 6(1):8.
- Buhi ER, Goodson P. Predictors of adolescent sexual behavior and intention: A theory-guided systematic review. *Journal of Adolescent Health*. 2007; 40:4–21. [PubMed: 17185201]
- Byers ES, O'Sullivan LF, Brotto LA. Time out from sex or romance: Sexually experienced adolescents' decisions to purposefully avoid sexual activity or romantic relationships. *Journal of Youth and Adolescence*. 2016; 45:831–845. [PubMed: 26932719]
- Centers for Disease Control and Prevention. [Retrieved March 1, 2017] About BMI for adults. 2017. from. http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html
- Cooper ML, Shapiro CM, Powers AM. Motivations for sex and risky sexual behavior among adolescents and young adults: A functional perspective. *Journal of Personality and Social Psychology*. 1998; 75:1528–1558. [PubMed: 9914665]
- Donnelly D, Burgess E, Anderson S, Davis R, Dillard J. Involuntary celibacy: A life course analysis. *Journal of Sex Research*. 2001; 38:159–169.

- Eccles J, Buchanan C, Flanagan C, Fuligni A, Midgley C, Yee D. Control versus autonomy during adolescence. *Journal of Social Issues*. 1991; 47:53–68.
- Eccles JS, Midgley C, Wigfield A, Buchanan CM, Reuman D, Flanagan C, Maciver D. The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American Psychologist*. 1993; 48:90–101. [PubMed: 8442578]
- Erikson, E. *Identity: Youth and crisis*. New York, NY: Norton; 1968.
- Eysenck, JJ. *Sex and personality*. London, UK: Open Books; 1976.
- Finer LB, Philbin JM. Sexual initiation, contraceptive use, and pregnancy among young adults. *Pediatrics*. 2013; 131:1–6. [PubMed: 23277318]
- Garcia LT, Cavalie C, Goins L, King E. Enjoyment of sexual activities and attributions of enjoyment to the other gender. *The Canadian Journal of Human Sexuality*. 2008; 17:173–182.
- Gillen MM, Lefkowitz ES, Shearer CL. Does body image play a role in risky sexual attitudes and behaviors? *Journal of Youth and Adolescence*. 2006; 35:243–255.
- Goldberg, LR. A broad-bandwidth, public domain, personality inventory measuring the lower-level facets of several five-factor models. In: Mervielde, I, Deary, I, De Fruyt, F., Ostendorf, F., editors. *Personality psychology in Europe*. Vol. 7. Tilburg, The Netherlands: Tilburg University Press; 1999. p. 7-28.
- Goodson P, Buhi ER, Dunsmore SC. Self-esteem and adolescent sexual behaviors, attitudes, and intentions: A systematic review. *Journal of Adolescent Health*. 2006; 38:310–319. [PubMed: 16488836]
- Gute G, Eshbaugh EM. Personality as a predictor of hooking up among college students. *Journal of Community Health Nursing*. 2008; 25:26–43. [PubMed: 18444064]
- Halpern CT, Joyner K, Udry JR, Suchindran C. Smart teens don't have sex (or kiss much either). *Journal of Adolescent Health*. 2000; 26:213–225. [PubMed: 10706169]
- Harvey SM, Spigner C. Factors associated with sexual behavior among adolescents: A multivariate analysis. *Adolescence*. 1995; 30:253–264. [PubMed: 7676863]
- Haydon AA, Cheng MM, Herring AH, McRee A-L, Halpern CT. Prevalence and predictors of sexual inexperience in adulthood. *Archives of Sexual Behavior*. 2014; 43:221–230. [PubMed: 23900992]
- Herbenick D, Reece M, Schick V, Sanders SA, Dodge B, Fortenberry JD. Sexual behavior in the United States: Results from a national probability sample of men and women ages 14–94. *The Journal of Sexual Medicine*. 2010; 7:255–265. [PubMed: 21029383]
- Hingson RW, Zha W, Weitzman ER. Magnitude of and trends in alcohol-related mortality and morbidity among U.S. college students ages 18–24, 1998 – 2005. *Journal of Studies on Alcohol and Drugs, Supp*. 2009; 16:12–20.
- Holmbeck, GN., O'Donnell, K. Discrepancies between perceptions of decision-making and behavioral autonomy. In: Paikoff, RL., editor. *Shared views in the family during adolescence: New directions for child development*. Vol. 51. San Francisco, CA: Jossey-Bass; 1991. p. 51-69.
- Hoyle RH, Fejfar MC, Miller JD. Personality and sexual risk taking: A quantitative review. *Journal of Personality*. 2000; 68:1203–1231. [PubMed: 11130738]
- Hughes SM, Harrison MA, Gallup GG Jr. Sex differences in romantic kissing among college students: An evolutionary perspective. *Evolutionary Psychology*. 2007; 5:612–631.
- Kenny, M. *Parental attachment questionnaire*. Unpublished measure; Boston College, MA: 1985.
- Kuperberg A, Padgett JE. Dating and hooking up in college: Meeting contexts, sex, and variation by gender, partner's gender, and class standing. *Journal of Sex Research*. 2015; 52:517–531. [PubMed: 24750129]
- Kurpisz J, Mak M, Lew-Starowicz M, Nowosielski K, Bie kowski P, Kowalczyk R, Samochowiec J. Personality traits, gender roles, and sexual behaviors of young adult males. *Annals of General Psychiatry*. 2016; 15:1–15. [PubMed: 26770258]
- Lahey BB. Public health significance of neuroticism. *American Psychologist*. 2009; 64:241–256. [PubMed: 19449983]
- Lanza HI, Huang DY, Murphy DA, Hser Y-I. A latent class analysis of maternal responsiveness and autonomy-granting in early adolescence: Prediction to later adolescent sexual risk-taking. *Journal of Early Adolescence*. 2012; 33:404–428.

- Lemer JL, Blodgett Salafia EH, Benson KE. The relationship between college women's sexual attitudes and sexual activity: The mediating role of body image. *International Journal of Sexual Health*. 2013; 25:104–114.
- Markey C, Markey P. Romantic partners, weight status, and weight concerns: The actor–partner interdependence model. *Journal of Health Psychology*. 2011; 16:217–225. [PubMed: 21135064]
- McMillen EK, Helm HW Jr, McBride DC. Religious orientation and sexual attitudes and behaviors. *Journal of Research on Christian Education*. 2011; 20:195–206.
- Miller JD, Lynam D, Zimmerman RS, Logan TK, Leukefeld C, Clayton R. The utility of the Five Factor Model in understanding risky sexual behavior. *Personality and Individual Differences*. 2004; 36:1611–1626.
- Morgan, EM. Outcomes of sexual behaviors among sexual minority youth. In: Lefkowitz, ES., Vasilenko, SA., editors. *New Directions for Child and Adolescent Development: Positive and negative outcomes of sexual behavior*. Vol. 144. San Francisco, CA: Jossey-Bass; 2014. p. 21–36.
- Muise A, Giang E, Impett EA. Post sex affectionate exchanges promote sexual and relationship satisfaction. *Archives of Sexual Behavior*. 2014; 43:1391–1402. [PubMed: 24777441]
- O'Sullivan LF, Cheng MM, Harris KM, Brooks-Gunn J. I wanna hold your hand: The progression of social, romantic and sexual events in adolescent relationships. *Perspectives on Sexual and Reproductive Health*. 2007; 39:100–107. [PubMed: 17565623]
- Patrick ME, Maggs JL, Lefkowitz ES. Daily associations between drinking and sex among college students: A longitudinal measurement burst design. *Journal of Research on Adolescence*. 2015; 25:377–386. [PubMed: 26052189]
- Patrick ME, Maggs JL, Cooper ML, Lee CM. Measurement of motivations for and against sexual behavior. *Assessment*. 2011; 18:502–516. [PubMed: 20581394]
- Paul EL, McManus B, Hayes A. "Hookups": Characteristics and correlates of college students' spontaneous and anonymous sexual experiences. *Journal of Sex Research*. 2000; 37:76–88.
- Puhl RM, Heuer CA. The stigma of obesity: A review and update. *Obesity*. 2009; 17:941–964. [PubMed: 19165161]
- Regan PC, Durvasula R, Howell L, Ureño O, Rea M. Gender, ethnicity, and the developmental timing of first sexual and romantic experiences. *Social Behavior and Personality*. 2004; 32:667–676.
- Rohrbaugh J, Jessor R. Religiosity in youth: A personal control against deviant behavior. *Journal of Personality*. 1975; 43:136–155. [PubMed: 1142058]
- Rosenberg, M. *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press; 1965.
- Rostovsky SS, Wilcox BL, Comer Wright ML, Randall BA. The impact of religiosity on adolescent sexual behavior: A review of the evidence. *Journal of Adolescent Research*. 2004; 19:677–697.
- Ryan RM, Deci EL. Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*. 2000; 25:54–67. [PubMed: 10620381]
- Sandfort TGM, Orr M, Hirsch JS, Santelli J. Long-term health correlates of timing of sexual debut: Results from a national US study. *American Journal of Public Health*. 2008; 98:155–161. [PubMed: 18048793]
- Schenk J, Pfrang H. Extraversion, neuroticism, and sexual behavior: Interrelationships in a sample of young men. *Archives of Sexual Behavior*. 1986; 15:449–455. [PubMed: 3800635]
- Schulenberg JE, Maggs JL. A developmental perspective on alcohol use and heavy drinking during adolescence and the transition to young adulthood. *Journal of Studies on Alcohol*. 2002; 14:54–70.
- Smiler AP, Frankel LBW, Savin-Williams RC. From kissing to coitus? Sex-of-partner differences in the sexual milestone achievements of young men. *Journal of Adolescence*. 2011; 34:727–735. [PubMed: 20851459]
- Spencer MM, Zimet GD, Aalsma MC, Orr DP. Self-esteem as a predictor of initiation of coitus in early adolescents. *Pediatrics*. 2002; 109:581–584. [PubMed: 11927699]
- Vasilenko SA. Age-varying associations between nonmarital sexual behavior and depressive symptoms across adolescence and young adulthood. *Developmental Psychology*. 2017; 53:366–378. [PubMed: 27854469]
- Vasilenko SA, Duntzee CI, Zheng Y, Lefkowitz ES. Testing two process models of religiosity and sexual behavior. *Journal of Adolescence*. 2013; 36:667–673. [PubMed: 23849661]

- Vasilenko SA, Maas MK, Lefkowitz ES. "It felt good but weird at the same time": Emerging adults' first experiences of six different sexual behaviors. *Journal of Adolescent Research*. 2015; 30:586–606. [PubMed: 26366039]
- Welsh DP, Haugen PT, Widman L, Darling N, Grello CM. Kissing is Good: A developmental investigation of sexuality in adolescent romantic couples. *Sexuality Research & Social Policy*. 2005; 2:32–41.
- Wiederman MW, Hurst SR. Body size, physical attractiveness, and body image among young adult women: Relationships to sexual experience and sexual esteem. *Journal of Sex Research*. 1998; 35:272–281.
- Williams T, Connolly J, Cribbie R. Light and heavy heterosexual activities of young Canadian adolescents: Normative patterns and differential predictors. *Journal of Research on Adolescence*. 2008; 18:145–172.
- Winter VR, Satinsky S. Sexual behavior in a diverse heterosexual sample: The influence of BMI. *International Journal of Sexual Health*. 2016; 28:129–140.
- Wlodarski R, Dunbar RIM. Examining the possible functions of kissing in romantic relationships. *Archives of Sexual Behavior*. 2013; 42:1415–1423. [PubMed: 24114390]
- Woertman L, van den Brink F. Body image and female sexual functioning and behavior: A review. *Journal of Sex Research*. 2012; 49:184–211. [PubMed: 22380588]
- Zimmer-Gembeck MJ, Helfand M. Ten years of longitudinal research on U.S. adolescent sexual behavior: Developmental correlates of sexual intercourse, and the importance of age, gender and ethnic background. *Developmental Review*. 2008; 28:153–224.

Table 1Percent of participants who have kissed by controls and predictors ($N = 738$)

	<i>N</i>	Not kissed	Kissed
Controls			
Female	374	14%	86%
Male	364	14%	86%
African American/Black	161	11%	89%
Asian American	209	28%	72%
Hispanic/Latino	186	9%	91%
European American	330	7%	93%
Heterosexual	724	15%	85%
Gay/lesbian/bisexual/other	14	0%	100%
Romantic relationship (current)	284	1%	99%
Not in romantic relationship	454	22%	78%
Contextual			
Honors college	53	32%	68%
Not in honors college	683	13%	87%

Table 2

Correlations and descriptives for predictors

	Religious Attendance	Importance of Religion	Neuroticism	Extraversion	Mother's facilitating	Alcohol use	BMI	Self-esteem
Personal								
Religious service attendance (past year)								
Importance of religion in daily life	.55***							
Neuroticism	-.02	.00						
Extraversion	-.02	.03	.22***					
Contextual								
Mother's facilitating of independence	.02	.05	-.18***	.16***				
Adjustment/health								
Alcohol use frequency (past month)	-.12**	-.22***	-.08*	.30***	.05			
Body Mass Index	-.03	.06	-.10**	-.03	.05	-.05		
Self-esteem	-.01	.06	-.42***	.34***	.25***	.03	.05	
Not kissed <i>M (SD)</i> (<i>n</i> = 105)	22.35 (23.44)	3.07 (1.03)	1.75 (0.77)	1.85 (0.74)	2.45 (0.57)	0.82 (1.49)	23.39 (5.20)	2.94 (0.58)
Kissed <i>M (SD)</i> (<i>n</i> = 633)	19.74 (22.74)	2.98 (1.45)	1.48 (0.75)	2.48 (0.72)	2.64 (0.61)	2.38 (1.85)	23.15 (3.80)	3.17 (0.50)

Table 3

Logistic regression models of predictors of lifetime kissing

	Bivariate models: Odds ratios and 95% confidence intervals ^a		Multivariate model: Odds ratios and 95% confidence intervals ^a	
	OR	95% CI	OR	95% CI
Control variables				
Female	0.99	(0.66, 1.50)	1.28	(0.72, 2.28)
African American/Black ^b	1.52	(0.88, 2.65)	1.03	(0.47, 2.24)
Asian American ^b	0.24 ***	(0.16, 0.37)	0.37 **	(0.19, 0.75)
Hispanic/Latino ^b	2.04 *	(1.17, 3.58)	0.89	(0.41, 1.93)
Heterosexual ^b	0.00	(0.00, --)	0.00	(0.00, --)
Romantic relationship (current) ^b	20.03 ***	(7.28, 55.07)	22.61 ***	(7.69, 66.50)
Personal				
Religious service attendance (past year)	1.00	(0.99, 1.00)	1.00	(0.99, 1.02)
Importance of religion in daily life	0.96	(0.83, 1.11)	0.96	(0.75, 1.22)
Neuroticism	0.63 **	(0.48, 0.83)	0.72	(0.47, 1.08)
Extraversion	3.02 ***	(2.25, 4.04)	1.90 **	(1.28, 2.80)
Contextual				
Honors college ^b	0.31 ***	(0.17, 0.57)	0.37 *	(0.16, 0.84)
Mother's facilitating of independence	1.63 **	(1.19, 2.25)	1.57	(0.97, 2.52)
Adjustment/health				
Alcohol use frequency (past month)	1.78 ***	(1.52, 2.08)	1.63 ***	(1.35, 1.96)
Body Mass Index	0.99	(0.94, 1.04)	0.97	(0.91, 1.02)
Self-esteem	2.33 ***	(1.58, 3.43)	1.02	(0.56, 1.82)

* $p < .05$;** $p < .01$;*** $p < .001$ Note: Due to missing data, $n = 715$ to 738 for bivariate logistic regressions and $n = 697$ for multivariate logistic regression.^a Bivariate logistic regression models include only one predictor. Multivariate logistic regression model includes all predictors.^b African American/Black, Asian American, Hispanic/Latino, heterosexual, romantic relationship, and honors college all coded as 1 = yes, 0 = no.