



Published in final edited form as:

J Sex Res. 2014 October ; 51(7): 731–741. doi:10.1080/00224499.2013.843148.

Sexual Communication Between Early Adolescents and Their Dating Partners, Parents, and Best Friends

Laura Widman, Ph.D.¹, Sophia Choukas-Bradley, M.A.¹, Sarah W. Helms, Ph.D.¹, Carol E. Golin, M.D.^{2,3}, and Mitchell J. Prinstein, Ph.D.¹

¹Department of Psychology, University of North Carolina, Chapel Hill

²Department of Health Behavior, School of Public Health, University of North Carolina, Chapel Hill

³Division of General Medicine and Clinical Epidemiology, School of Medicine, University of North Carolina, Chapel Hill

Abstract

This study assessed early adolescents' sexual communication with dating partners, parents, and best friends about six sexual health topics: condoms, birth control, STDs, HIV/AIDS, pregnancy, and abstinence/waiting. Using a school-based sample of 603 youth (ages = 12–15; 57% female; 46% Caucasian), we examined communication differences across demographic and developmental factors, tested whether communication with parents and best friends was associated with greater communication with partners, and examined associations between communication and condom use. Over half of participants had not discussed any sexual topics with their dating partners (54%), and many had not communicated with parents (29%) or best friends (25%). On average, communication was more frequent among adolescents who were female, African American, older, and sexually active, despite some variation in subgroups across partner, parent, and friend communication. Importantly, communication with parents and friends – and the interaction between parent and friend communication – was associated with increased communication with dating partners. Further, among sexually active youth, increased sexual communication with partners was associated with more frequent condom use. Results highlight the importance of understanding the broader family and peer context surrounding adolescent sexual decision-making and suggest a possible need to tailor sexual communication interventions.

Keywords

adolescent sexual communication; parent-child communication; peer influence; HIV; condom use

Adolescents in the United States are at significant risk for sexual health problems. Although the majority of adolescents engage in sexual intercourse by the time they graduate high school, as few as half of sexually active youth regularly use condoms (Centers for Disease Control and Prevention, 2012). This high risk sexual behavior results in over 9 million new

sexually transmitted diseases (STDs) and 8,300 new cases of HIV among adolescents and emerging adults each year (Centers for Disease Control and Prevention, 2010).

It is now well established that openly communicating about sexual health issues with a partner can promote safer sexual decision-making (for meta-analyses, see Noar, Carlyle, & Cole, 2006; Sheeran, Abraham, & Orbell, 1999). Specifically, youth who engage in more frequent and comfortable sexual communication with their dating partners are more likely to delay sexual debut and use condoms consistently once they initiate intercourse (e.g., Crosby et al., 2003; Guzmán et al., 2003; Noar et al., 2006; Tschann & Adler, 1997). One meta-analysis demonstrated that sexual communication was more predictive of condom use than over 40 other psychosocial variables, including sexual self-efficacy, barriers to condom use, and intentions to use condoms (Sheeran et al., 1999). Additionally, recent work has situated sexual communication within health behavior theory frameworks, such as the reasoned action model (Fishbein & Ajzen, 2010), by demonstrating that sexual communication is a critical intervening variable in the link between condom use intentions and safer sex behavior (Bryan, Fisher, & Fisher, 2002; Widman, Golin, & Noar, 2013).

Although it is important, sexual communication does not occur in all adolescent sexual relationships (Milhausen, Sales, Wingood, DiClemente, Salazar, & Crosby, 2007; Ryan, Franzetta, Manlove, & Holcombe, 2007; Widman, Welsh, McNulty, & Little, 2006). Explicit discussions about sex require skills in sexual assertiveness and negotiation that are not prevalently modeled for youth (Metts & Spitzberg, 1996). Thus, many sexually active adolescents – as many as half in some studies (DiClemente, 1991; Guzmán et al., 2003; Ryan et al., 2007) – report they have not discussed condoms or safer sex topics with their partners. Identifying the specific sexual topics youth are most likely to discuss and the factors associated with more frequent partner communication can inform future intervention work in this important area.

One factor that likely has an impact on communication in adolescent dating relationships is the extent to which they have opportunities to discuss sexual health issues outside the dating relationship. Based largely on social learning theory (Bandura, 1977), theoretical models of interpersonal communication and social skills development suggest communication is a learned behavior that can develop over time through observation and practice (Greene, 2003). Applied specifically to sexual communication, we would expect that adolescents may be more likely to discuss important sexual health topics with their dating partners if they have had an opportunity to talk about sexual health or gain information about sex from other sources (Powell & Segrin, 2004). Parents clearly are one of these critical communication sources for youth (Epstein & Ward, 2007; Sprecher, Harris, & Meyers, 2008), and more frequent communication with parents is associated with a higher likelihood of discussing sexual issues with romantic partners (Crosby et al., 2002; DiClemente et al., 2001; Hutchinson & Cooney, 1998; Ryan et al., 2007; Whitaker, Miller, May, & Levin, 1999). Additionally, a robust body of research has demonstrated that open sexual communication between parents and adolescents can be a protective factor that reduces sexual risk behavior by delaying onset of intercourse and increasing frequency of contraceptive use and condoms (for reviews, see Commendador, 2010; DiIorio, Pluhar, & Belcher, 2003; Jaccard, Dodge, & Dittus, 2002; Miller, Benson, & Galbraith, 2001).

Adolescents also may learn to communicate about sex through conversations with their friends. Friends become increasingly important sources of information and serve as critical social references for adolescents as they develop (Prinstein & Dodge, 2008). By early adolescence, youth disclose more to their friends than to their parents about many sex-related topics (DiIorio, Kelley, & Hockenberry-Eaton, 1999; Papini, Farmer, Clark, & Snell, 1988). Thus, it is probable that adolescents who are open communicators with their friends also will be more likely to talk with their dating partners about sexual issues; however, limited empirical work has addressed this possibility directly. There also is a dearth of information about the degree to which talking with parents, friends, and dating partners might be interrelated among adolescents. One study examining perceived *comfort* communicating about sexual issues among Latino adolescents found that youth were more comfortable discussing sex with friends than with mothers or dating partners (Guzmán et al., 2003). However, additional research is needed to explicitly examine the prevalence and content of adolescents' communication behavior with dating partners, parents, and friends to determine what sexual health topics youth discuss within each of these important relationships, as well as how communication with parents or friends might be related to more open communication with dating partners.

The current study extends the literature on adolescent sexual communication by utilizing a large, ethnically diverse sample of early adolescents to examine the extent to which youth have talked with their dating partners, parents, and best friends about several topics critical to adolescent sexual health, including condom use, other forms of birth control, STDs, HIV/AIDS, pregnancy, and delaying sexual activity/abstinence (Crosby et al., 2002; DiClemente et al., 2001; Sales et al., 2012). The use of an early adolescent sample allows the exploration of developmentally normative timelines for communicating about sexual issues, which may include negotiation of abstinence for youth who are not yet ready for or interested in sexual activity, as well as safer sex negotiation for youth who are contemplating or already have initiated sexual activity. Because it is likely that both parents and friends serve as important communication sources and influence adolescents' sexual decision-making processes, we hypothesized that communication with parents and friends would each independently be associated with higher levels of sexual communication between adolescents and their dating partners. In addition to testing these main effects, we further examined if the interaction between communication with parents and friends was associated with an increased likelihood of discussing sexual health with a partner. Although we were unaware of any previous studies that have directly tested the interaction between parent and friend communication, we expected that youth who were exposed to more sexual health discussions from parents and friends would be more likely to communicate about sex in their dating relationships than youth with limited sex-based discussions from these potentially important communication sources.

We also examined developmental and demographic differences in communication patterns to elucidate the subgroups of adolescents that may be most in need of future sexual communication skills training. This project is unique in that our assessment of communication extends to dating partners, parents, and friends so that a full comparison of subgroup differences can be conducted across communication sources. It is clear that the

rapid physical, social, and sexual development occurring during the early adolescent period can influence adolescents' interest in sexual activity dramatically, as well as impacting their curiosity and communication about sexual issues. Thus, we expected that older adolescents and those who have already initiated sexual activity would be more likely to communicate about sex than younger, less sexually experienced youth (for similar findings, see DiIorio, McCarty, Denzmore, & Landis, 2007; Lefkowitz, Boone, & Shear, 2004; Lefkowitz & Espinosa-Hernandez, 2007; Sales et al., 2012; Swain, Ackerman, & Ackerman, 2006). Furthermore, research generally demonstrates that girls communicate more frequently about sexual issues in their interpersonal relationships than boys (DiIorio et al., 2007; Gillmore, Chen, Haas, Kopak, & Robillard, 2011; Jaccard, Dittus, & Gordon, 2000; Lefkowitz & Espinosa-Hernandez, 2007; Nolin & Petersen, 1992; Ryan et al., 2007; Swain et al., 2006; Widman et al., 2006); these gender differences also were anticipated in the current study. Finally, we examined ethnic group differences. Previous research has been less consistent in this area, with some studies suggesting African American youth are more likely than Caucasian or Latino youth to discuss sexual health issues (Hutchinson & Cooney, 1998; Ryan et al., 2007; Swain et al., 2006), and others finding no ethnic group differences (Tschann & Adler, 1997). Additionally, many studies that consider ethnic group differences have focused on parent or partner communication (e.g., Hutchinson & Cooney, 1998; Lefkowitz, Romo, Corona, Au, & Sigman, 2000; Ryan et al., 2007); much less is known about potential group differences in communication among friends. Further examination of developmental and demographic differences in communication patterns will fill this important research gap.

A final goal of the current project was to contribute to the burgeoning literature that links sexual communication to condom use among sexually active youth. Consistent with prior work in this area (e.g., Crosby et al., 2003; DiClemente, 1991; Guzmán et al., 2003; Tschann & Adler, 1997; Widman et al., 2006), we expected to find a robust association between sexual communication with dating partners and more consistent condom use among those adolescents who were engaging in intercourse.

Methods

Participants

Participants were recruited from three rural, low-income junior high schools in the southeastern United States. All students in 7th and 8th grades were recruited, except those in self-contained special education classrooms, using active parental consent and student assent (total *n* recruited = 1,463). Among the 82.4% of youth returning consent forms (*n* = 1,205), 74.7% of parents provided consent (*n* = 900). From these 900, 32 students were absent from school or declined participation, resulting in a final sample of 868 students (ages 12–15; 54.5% girls).

For the current study, data from 265 youth were excluded: 231 did not have a dating partner in the past year and 34 did not provide data about dating partner communication [footnote 1]. Thus, the current study included 603 youth (57.2% girls). The average age of participants was 13.13 years (*SD* = 0.78), and the sample included 127 (21%) 12-year-olds, 291 (48%) 13-year-olds, 165 (27%) 14-year-olds, and 20 (3%) 15-year-olds. Regarding race/ethnicity,

45.9% were Caucasian, 23.9% were African American, 22.1% were Latino, and 8.1% were mixed or other race. One student did not provide data about race/ethnicity. School district records indicated that this sample closely matched the demographic makeup from the district where participants were recruited (i.e., 44% Caucasian).

Procedure

Following informed assent procedures, surveys were administered via computer-assisted self-interviews (CASI) in a classroom setting with groups of approximately 30 students. CASI procedures have been shown to reduce social desirability biases and increase validity of self-report data when collecting sensitive data about sexual health among adolescents (Turner et al., 1998). To protect confidentiality, privatizing dividers surrounded each computer. Each participant was compensated with a \$10 gift card. The University Institutional Review Board approved all study procedures.

Measures

Demographic Information—We gathered demographic information about participant age, gender, and race/ethnicity.

Sexual Communication with Dating Partners—We assessed the frequency with which communication occurred with dating partners about six sexual topics: 1) using condoms; 2) using other forms of birth control (e.g., birth control pills); 3) STDs; 4) HIV/AIDS; 5) getting pregnant/getting someone else pregnant; and 6) abstinence/waiting to have sex. The sexual health topics were selected based on prior communication scales (Crosby et al., 2002; DiClemente et al., 2001; Sales et al., 2012) and feedback from two formative focus groups. Participants indicated how frequently in the past year they discussed each topic on a 5-point scale (0 = never, 1 = 1 time, 2 = 2 or 3 times, 3 = 4 to 6 times, and 4 = 7 or more times). Due to the highly skewed nature of responses (see Table 1 for descriptive statistics), items were dichotomized into a score of 0 = *never discussed that item* or 1 = *discussed that item 1 time or more*. Items then were summed to create a total score indicating the number of sexual health topics youth had discussed with their dating partners in the past year (possible range = 0 – 6 topics). We pilot tested the sexual communication scale in a sample of 60 youth (50% girls, $M_{\text{age}} = 16.2$) and found it had good variability and excellent reliability (Cronbach's $\alpha = .92$). Reliability also was good in the current study (Cronbach's $\alpha = .88$).

Sexual Communication with Parents and Best Friends—The sexual communication scale described above also was administered to assess the frequency of sexual communication in the past year with a) parents and b) a best friend of the same gender (identified by name by each participant). Again, responses on each of the six items

Footnote 1: Based on pilot testing, our definition of dating partner included a “boyfriend/girlfriend or someone you like as `more than friends' who you have talked to or hung out with.” All participants were asked if they had a “boyfriend/girlfriend” or other dating partner, regardless of gender, to avoid assumptions about sexual orientation. Adolescents who reported not having had a dating partner in the past year did not receive questions about communication with dating partners. Tests between youth with and without partner communication data revealed groups did not differ by age, $t(866) = -0.35, p = .73$, or ethnicity, $\chi^2 = .52, p = .51$. However, boys were less likely than girls to have dated, $\chi^2 = 5.90, p < .05$. Additionally, compared to youth who had dated, youth who had not dated reported less sexual communication with friends, $t(833) = -5.30, p < .01$, and parents, $t(834) = -4.88, p < .001$.

were dichotomized and summed to create scales that indicated the number of sexual health topics youth had discussed with their parents (Cronbach's $\alpha = .90$) and best friends (Cronbach's $\alpha = .87$). Higher scores indicated a greater number of topics discussed (possible range = 0 – 6 topics).

Sexual Behavior—We included a brief screener to assess whether or not adolescents had sex in the past year. Sexual activity was not defined explicitly; instead the term “had sex” was used throughout the survey. Participants who had sex also were asked to indicate how frequently they used condoms in the past year on a 5-point Likert scale (0 = *never* to 4 = *every time*).

Analysis Plan

Analyses were conducted in five steps. First, we conducted a series of descriptive analyses to determine the percentage of youth who had discussed each sexual health topic with their dating partners, parents, and best friends. Second, to determine if the percentage of youth communicating about each topic differed across communication partners (i.e., dating partners versus parents versus friends), we conducted a series of chi square tests using a Bonferroni correction to maintain a family-wise Type I error rate of $p < .05$. Third, we examined differences in the total number of sexual health topics discussed by developmental (i.e., age, sexual activity status) and demographic (i.e., gender, ethnicity) characteristics to determine if there were subgroup differences in communication patterns. Specifically, we conducted bivariate correlations between communication partner (i.e., dating partner, parent, friend) and participant age (a continuous variable). For the categorical variables of gender, ethnicity, and sexual activity status, we conducted three mixed-method ANOVAs that included a within-person factor (communication with dating partners, parents, and friends) and a between-person factor (gender, ethnicity, or sexual activity). Fourth, using a negative binomial regression analysis (Atkins & Gallop, 2007), we examined whether discussing more sexual health topics with parents and friends independently – and the interaction between these variables – was associated with more sexual communication with dating partners. The effects of age, gender, ethnicity, and sexual activity status were controlled in this model. Finally, we examined the correlation between communication with dating partners and condom use to determine if discussing more sexual health topics with a partner was associated with a greater frequency of condom use among sexually active youth.

Results

Prevalence of Sexual Communication

Table 1 summarizes the percentage of youth who discussed each sexual health topic with their dating partners, parents, and best friends. Sexual abstinence/waiting on sex was the topic that the greatest number of youth had discussed, with 33% discussing abstinence with a dating partner, 62% discussing abstinence with a parent, and 58% discussing abstinence with their best friend. As indicated in the table, significantly more youth communicated with their parents than with their dating partners or best friends on every sexual health topic except one: more youth communicated with their friends about condom use than with their parents. An examination of the total sexual communication scores revealed that 46% of

adolescents discussed at least one sexual health topic with a dating partner, 71% discussed at least one topic with a parent, and 75% discussed at least one topic with their best friend. Discussing all six sexual health topics was less common: only 8% of youth indicated they had discussed all six topics with their dating partners, 26% with their parents, and 20% with their friends.

Subgroup Differences in Number of Sexual Health Topics Discussed

Subgroup means in communication patterns are presented in Table 2 for gender, ethnicity, and sexual activity subgroups. The results from three mixed-method ANOVAs also are presented in this table. As shown in the table, the main effect of communication partner was significant in all analyses: the overall number of topics discussed with parents ($M = 2.87$, $SD = 2.41$) and friends ($M = 2.76$, $SD = 2.29$) did not differ ($p = .59$), but youth communicated about significantly fewer sexual health topics with their dating partners ($M = 1.45$, $SD = 2.02$) than parents or friends (p values $> .05$). Results of the between-group analyses further demonstrated that, on average, girls talked about significantly more topics than boys, sexually active youth talked about more topics than non-sexually active youth, and communication patterns differed by ethnicity (Table 2). Tukey HSD post-hoc comparisons by ethnic group revealed that African American youth communicated about more topics than Caucasian youth ($p = .009$) and Latino youth ($p = .034$), but did not differ from youth of mixed or other races. Caucasian, Latino, and other/mixed race youth did not differ significantly in the number of sexual communication topics discussed (all p values $> .10$).

Of note, each of these main effects of communication partner, gender, ethnicity, and sexual activity were qualified by significant interactions (Table 2). Follow-up t -tests revealed that girls discussed significantly more sexual topics with their parents [$t(587) = 4.68$, $p < .001$] and friends [$t(587) = 4.89$, $p < .001$] than boys, but communication with dating partners did not differ significantly by gender [$t(587) = 1.40$, $p = .16$]. Additionally, African American youth communicated about more topics with their parents than Caucasian youth [$t(413) = 3.90$, $p < .001$] and more topics with their friends than Latino youth [$t(266) = 3.09$, $p = .002$], but communication with dating partners did not differ significantly among ethnic groups (p values $> .10$). Furthermore, sexually active youth talked about more sexual topics with their dating partners [$t(587) = 6.01$, $p < .001$] and friends [$t(587) = 3.57$, $p < .001$] than youth who were not sexually active. However, communication with parents did not differ based on whether the adolescent was sexually active [$t(587) = 0.99$, $p = .32$].

The final developmental variable we examined was participant age. Using bivariate correlations, we found significant positive correlations between age and communication with dating partners ($r = .17$, $p < .001$), parents ($r = .08$, $p = .04$), and best friends ($r = .11$, $p = .006$), indicating that older youth discussed a greater number of sexual topics with each of these people.

Multivariate Regression Model

Next, we examined whether discussing more sexual health topics with parents or friends was associated with more sexual communication with dating partners. Given the significant effects of demographic and developmental characteristics noted above, we controlled for

age, gender, ethnicity, and sexual activity status in these analyses. As shown in Table 3, there were significant main effects for both parent and friend communication, indicating that youth who talked about more topics with their parents or their friends were more likely to discuss sexual health issues in their early dating relationships. However, these main effects were qualified by a significant interaction.

To understand how the simple slopes of communication with parents changed depending on the level of communication with friends, we compared the simple slopes of parent communication at “high” levels of friend communication (+1 standard deviation above the mean) and “low” levels of friend communication (–1 SD below the mean; Aiken and West, 1991). This test indicated that sexual communication with parents was most critical when youth were not discussing sex with their friends. Specifically, among youth low in communication with friends, more sexual communication with parents was associated with an increased likelihood that adolescents would talk with their dating partners, $B = 0.16$, $SE(B) = 0.05$, Wald chi-square = 11.47, $p = .001$. However, when youth talked about more sexual communication topics with friends, communicating with parents was not independently associated with more partner communication, $B = 0.04$, $SE(B) = 0.33$, Wald chi-square = 1.75, $p = .19$.

Sexual Communication and Condom Use Among Sexually Active Youth

Finally, in line with prior research (Noar et al., 2006), we examined whether increased sexual communication with dating partners was associated with more frequent condom use among the subsample of adolescents who had engaged in sexual intercourse. Of the 603 7th and 8th graders that we sampled, 53 (8.8%; 29 girls, 24 boys) had engaged in sexual intercourse in the past year and 23 (3.8%; 12 girls, 11 boys) had sex with two or more partners. Among this sexually active sample, twenty adolescents (38%) reported they had not used condoms every time they had sex in the past year, and 9 youth (17%) reported they had not discussed any sexual health topics with their dating partners. Additionally, when asked about use of protection at first intercourse, 29 youth (55%) reported they had used a condom, and 8 of these adolescents (15%) indicated they had used both condoms and birth control pills the first time they had sex. Importantly, adolescents who discussed more sexual health topics with their partners reported significantly more frequent condom use ($r = .31$, $p = .02$). Additionally, adolescents who discussed more sexual health topics with their partners were more likely to report use of dual protection at first intercourse ($r = .27$, $p = .048$).

Discussion

Sexual health is an important component of overall health and well-being for adolescents. In the U.S., youth under the age of 24 represent 25% of the sexually experienced population, yet they acquire a full 50% of STDs (CDC, 2010). Of importance, a growing body of research has demonstrated that adolescents who are able to communicate about sexual health issues, including condom use, STDs/HIV, and abstinence, are more likely to delay intercourse and use condoms when they do become sexually active (Crosby et al., 2003; DiClemente, 2001; Guzmán et al., 2003; Noar et al., 2006; Tschann & Adler, 1997). The goal of the current project was to enhance what is known about sexual communication

among early adolescents by filling several gaps in prior research. Specifically, using a large, ethnically diverse school-based sample of adolescents in seventh and eighth grade, the current study assessed the prevalence and content of early adolescents' sexual health communication with their dating partners, parents, and best friends and examined how communication patterns differ by demographic and developmental factors. Furthermore, the current project examined whether communicating about sexual health topics with parents and friends was independently – or synergistically – associated with increased communication with dating partners. Finally, we investigated the link between communication and condom use among sexually active youth.

Consistent with previous work (DiClemente, 1991; Guzmán et al., 2003; Ryan et al., 2007), we found that sexual communication in early dating relationships was infrequent: over half of youth reported they had not discussed any of six sexual health topics with their dating partners (i.e., condoms, birth control, STDs, HIV/AIDS, pregnancy, or abstinence). Additionally, 29% of youth reported they had not discussed any of these topics with their parents and 25% reported they had not done so with their best friends. When we looked at each of the six sexual health topics individually, we found that a greater percentage of adolescents had communicated with their parents and friends about every topic than they had with their dating partners. Yet, the percentage of youth communicating about each topic was quite low. For example, nearly 40% of these early adolescents who were already in dating relationships reported they had not discussed abstinence or waiting on sex with their parents or friends, and approximately half the sample had not had conversations about the risk of HIV, STDs, or pregnancy. It should be noted that although all early adolescents in this sample reported having a dating relationships in the past year (an inclusion criteria for this project), only a minority had engaged in sexual intercourse. It is possible that some of the adolescents in this study were not yet discussing sexual health issues because they were not yet interested in sexual activity. However, initiating honest conversations about sexual health *before* youth have developed a strong interest in or engaged in sexual activity may be the optimal time for dating partners to negotiate safer behaviors and for parents to provide accurate information to their children.

Because data were collected exclusively from adolescents, and not adolescent-parent or adolescent-friend dyads, it is not possible to determine if parents or friends would have reported similar rates of communication. There is evidence to suggest that parents report more open communication about sex with their children than adolescents actually perceive (Jaccard, Dittus, & Gordon, 1998). However, the amount of communication perceived by the adolescent may be the most critical factor for their subsequent sexual decision-making and sexual health outcomes (Jaccard et al., 1998; Newcomer & Udry, 1984). The lack of perceived communication about sexual health among many youth in this study is troubling from a public health perspective and suggests there are barriers to having open discussions about sex that should remain a focus of research and prevention efforts (Miller et al., 2009).

A second purpose of this project was to examine differences in communication patterns by gender, ethnicity, sexual activity status, and age to elucidate the subgroups of adolescents who may be most in need of future sexual communication skills training. This project was unique in that our assessment of communication extended to dating partners, parents, and

friends, allowing a full comparison of subgroup differences across these communication partners. Importantly, we found these subgroups differed in several ways. Specifically, consistent with past work, we found that, overall, girls communicated more than boys (see also DiIorio et al., 2007; Gillmore et al., 2011; Ryan et al., 2007; Swain et al., 2006), African Americans communicated more than Caucasian and Latino youth (Hutchinson & Cooney, 1998; Ryan et al., 2007; Swain et al., 2006), sexually active youth communicated more than those who were not sexually active (DiIorio et al., 2007; Lefkowitz et al., 2004; Lefkowitz & Espinosa-Hernandez, 2007), and older adolescents communicated more than younger adolescents (DiIorio et al., 2007; Swain et al., 2006). However, these subgroup differences were not entirely consistent across partner, parent, and friend communication. For example, African American youth were more likely to discuss sex with their parents than Caucasian youth, and they were more likely to discuss sex with their friends than Latino youth – but no ethnic differences were noted in communicating with dating partners. Additionally, no gender differences were noted in communicating with dating partners. The lack of differences in partner communication may reflect the fact that conversations about sexual health in early dating relationships are very difficult for most youth and perhaps less amenable to influences of culture or gender than communicating with parents or friends.

Although additional research is needed to further examine the role of these and other relevant sociodemographic characteristics (e.g., rural versus urban, family education or socioeconomic level; DiIorio et al., 2003) in sexual communication processes, current findings support the idea that “one size fits all” prevention approaches may not be equally effective in improving communication skills among youth who are starting at very different baseline levels of communication skills and experience. Our findings also suggest that critical messages about sexual health may be reaching adolescents too late if conversations between youth and their parents are initiated later in adolescence, after youth have started dating and may already have become sexually active. It is important that parents have conversations about sexuality early and often with adolescents, before the onset of sexual activity, so that youth are prepared to make fully informed decisions about their sexual health.

The importance of communicating with parents was highlighted in our finding that discussing more sexual health issues with parents was linked to a higher likelihood that adolescents would talk with their dating partners about sexual health (Crosby et al., 2002; DiClemente et al., 2001; Hutchinson & Cooney, 1998; Ryan et al., 2007; Whitaker et al., 1999). However, talking with parents did not work in isolation. The association between sexual communication with parents and partners was moderated by friend communication such that these variables had an interactive effect. Specifically, youth who communicated with both their parents *and* their friends were the most likely to have important sexual health discussions in their early dating relationships as well. Furthermore, the direct effect of parent communication was not significant among youth who engaged in high levels of communication with their friends.

The paramount importance of communication with friends is not surprising given substantial past work indicating that by adolescence, peers generally surpass adults as the primary sources of influence on youths' attitudes and behaviors (Prinstein & Dodge, 2008), and

research showing that by early adolescence, youth disclose more sexual information to their friends than to their parents (DiIorio et al., 1999; Papini et al., 1988). Yet, to our knowledge, this was the first study to assess directly the synergistic effects of parent and friend communication on sexual communication with dating partners. These findings complement work demonstrating that communication with parents and friends can interact to predict adolescent girls' sexual behaviors (DiIorio et al., 2007). It is clear that additional empirical work and theory are needed to consider the joint influence of parents and friends on adolescent communication development and sexual decision-making processes. The current study examined the breadth of sexual communication topics (e.g., condom use, STDs, abstinence), but not how the topic was specifically discussed. Sexual topics could be discussed in a very different way with a parent or friend than a sexual partner, and additional attention is needed in future studies to disentangle the way in which communication skills specifically are modeled from parents and friends and implemented in new relationships.

A final goal of the current project was to confirm the health protective role of sexual communication in early dating relationships by examining the link between communication and condom use in this diverse sample of early adolescents. Of note, among this group of 12 to 15 year olds who were sexually active – all early initiators by standard definitions (Madkour, Farhat, Halpern, Godeau, & Gabhainn, 2010; Spriggs & Halpern, 2008) – 38% of youth had not used condoms every time they had sex in the past year. This percentage is in line with national prevalence estimates indicating that 40% of youth had not used a condom at last intercourse (CDC, 2012) and highlights the need for additional intervention work to encourage safer sexual behavior among sexually active adolescents. Contributing to the growing body of research in this area (Noar et al., 2006), we found that early adolescents who communicated about more sexual health topics with their partners used condoms more consistently than youth who discussed fewer safer sex issues with their partners. Youth who communicated about more topics with their partners also were more likely to use dual forms of contraception at first intercourse. These results underscore the importance of focusing on sexual communication as a critical component of interventions to enhance adolescents' overall sexual health and well-being.

Limitations and Future Directions

Although use of a large, ethnically diverse sample of early adolescents was a notable strength of this study, there are a few methodological limitations that also deserve attention. First, the cross-sectional nature of this study prevents us from being able to assess the temporal order of communication with parents, friends, and partners or examine how communication patterns might change across time and relationships. Although it is very possible that youth learn to communicate about sex from important social role models, such as parents and friends, it also is plausible that youth who begin to talk to their partners about sex, and/or begin to engage in sexual behaviors, then have these conversations with their parents and friends. To date, the majority of research on sexual communication has been cross-sectional (see meta-analysis by Noar et al., 2006). As a field, we are in urgent need of longitudinal assessments that can capture communication development and shed light on the causal pathways through which sexual communication influences sexual behavior. Second, youth in this study were limited to early adolescents, ages 12 to 15. Examining sexual

communication patterns across a broader age range would allow for a more nuanced analysis of how developmental factors (e.g., age and pubertal stage) and sexual experience (e.g., first coitus, accumulation of more experience/partners) may affect differences in communication patterns. Third, we used a broad definition of 'dating partner' that likely included youth with relationships of varied length, intimacy, and commitment. Although we made the decision to use a broad definition with the intent of capturing as many youth as possible, it is very likely that the patterns of sexual communication differ in casual relationships compared to more committed or intimate relationships (Widman et al., 2006). This possibility could be evaluated explicitly in future work. Additionally, our measure of sexual communication focused on several sexual risk and protective behaviors (e.g., condom use, STDs, abstinence) but did not assess many other topics that theorists and scholars have described as being part of sexual health (see, for instance, Brooks-Gunn & Paikoff, 1993; Haffner, 1998). An important direction for future scholarship will be to understand further the depth of sexual health discussions, focusing not only on sexual risk, but also factors such as intimacy, consent, and sexual pleasure. This research also might address additional components of communication, such as communication timing and the quality of such discussions, which may further impact sexual behavior and sexual health outcomes (Lefkowitz, 2002).

A final set of limitations to note concerns the possibility of heterogeneity in sexual orientation and sexual behaviors in this sample, which we did not examine explicitly. In an effort to use inclusive (as opposed to heteronormative) language, our definition of dating partners did not explicitly ask about the gender of the dating partner. Additionally, we used the term "had sex" but did not specify what sexual behaviors this definition could have encompassed. Youth may have differing definitions of the term "sex" so it is likely that our sexually active group was not homogenous in their behaviors. More precise definitions should be used if researchers wish to tease apart the association between sexual communication and specific sexual acts. Further, we did not specifically assess sexual orientation in the current project so we were unable to examine how communication patterns may have differed among individuals with differing sexual orientations. Future research on sexual communication and sexual orientation would be very valuable.

Conclusions

The current study provides evidence that many adolescents do not discuss important sexual health topics with the very people in their lives – their parents, friends, and dating partners – who may help them make safer sexual decisions. Importantly, youth who discussed more sexual health issues with their parents and best friends also were more likely to talk about sex in their early dating relationships. This communication was particularly protective for sexually active youth, as those who discussed more sexual health topics with their dating partners used condoms more consistently. Targeting sexual communication skills in adolescent sexual health interventions may be critical to equip adolescents with the information and negotiation skills necessary to promote sexual health and reduce rates of HIV, STDs, and other sexual health problems.

Acknowledgments

This work was supported in part by National Institutes of Health Grant R01-HD055342 awarded to Mitchell J. Prinstein. This work was also supported in part by funding from K99 HD075654 and NIH/NIAID 5 T32 AI 07001-34: Training in Sexually Transmitted Diseases and HIV awarded to Laura Widman, and support from the National Center for Research Resources and the National Center for Advancing Translational Sciences (UL1TR000083). We further wish to acknowledge support from the University of North Carolina at Chapel Hill Center for AIDS Research Biostatistics, Developmental, and Social and Behavioral Cores (P30 AI50410). Finally, we thank the many research assistants and research participants that made this study possible.

References

- Aiken, L.S.; West, S.G. *Multiple Regression: Testing and Interpreting Interactions*. Sage; Los Angeles, CA: 1991.
- Atkins DC, Gallop RJ. Rethinking how family researchers model infrequent outcomes: A tutorial on count regression and zero-inflated models. *Journal of Family Psychology*. 2007; 21:726–735. doi: 10.1037/0893-3200.21.4.726. [PubMed: 18179344]
- Bandura, A. Englewood Cliffs. Prentice Hall; NJ: 1977. *Social Learning Theory*.
- Brooks-Gunn, J.; Paikoff, R.I. 'Sex is a gamble, kissing is a game': Adolescent sexuality and health promotion. In: Millstein, S.G.; Petersen, A.C.; Nightingale, E.O., editors. *Promoting the Health of Adolescents. New Directions for the Twenty-First Century*. Oxford University Press; New York: 1993. p. 180-208.
- Bryan A, Fisher JD, Fisher WA. Tests of the mediational role of preparatory safer sexual behavior in the context of the theory of planned behavior. *Health Psychology*. 2002; 21:71–80. doi: 10.1037//0278-6133.21.1.71. [PubMed: 11846347]
- Centers for Disease Control and Prevention. Youth Risk Behavior Survey – United States 2011. *Morbidity and Mortality Weekly Report*. 2012; 61:1–45.
- Centers for Disease Control and Prevention. [Accessed May 20, 2013] Sexually Transmitted Disease Surveillance. 2010. Available at: <http://www.cdc.gov/std/stats10/toc.htm>
- Commendador KA. Parental influences on adolescent decision making and contraceptive use. *Pediatric Nursing*. 2010; 36:147–170. [PubMed: 20687307]
- Crosby RA, DiClemente RJ, Wingood GM, Cobb BK, Harrington K, Davies SL, Hook EW, Oh MK. Condom use and correlates of African American adolescent females' infrequent communication with sex partners about preventing sexually transmitted diseases and pregnancy. *Health Education and Behavior*. 2002; 29:219–231. doi:10.1177/109019810202900207. [PubMed: 11942716]
- Crosby RA, DiClemente RJ, Wingood GM, Salazar LF, Harrington K, Davies SL, Oh MK. Identification of strategies for promoting condom use: a prospective analysis of high-risk African American female teens. *Prevention Science*. 2003; 4:263–70. doi:10.1023/A:1026020332309. [PubMed: 14598998]
- DiClemente RJ. Predictors of HIV-preventative sexual behavior in a high-risk adolescent population: The influence of perceived peer norms and sexual communication on incarcerated adolescents' consistent use of condoms. *Journal of Adolescent Health*. 1991; 12:385–390. DOI: 10.1016/0197-0070(91)90052-N. [PubMed: 1751507]
- DiClemente RJ, Wingood GM, Crosby R, Cobb BK, Harrington K, Davies SL. Parent-adolescent communication and sexual risk behaviors among African American adolescent females. *Journal of Pediatrics*. 2001; 139:407–412. [PubMed: 11562621]
- DiIorio C, Kelley M, Hockenberry-Eaton M. Communication about sexual issues: Mothers, fathers, and friends. *Journal of Adolescent Health*. 1999; 24:181–9. DOI:10.1016/S1054-139X(98)00115-3. [PubMed: 10195801]
- DiIorio C, Pluhar E, Belcher L. Parent-child communication about sexuality: A review of the literature from 1980–2002. *Journal of HIV/AIDS Prevention and Education for Adolescents and Children*. 2003; 5:7–32. doi:10.1300/J129v05n03_02.
- DiIorio C, McCarty F, Denzmore P, Landis A. The Moderating Influence of Mother-Adolescent Discussion on Early and Middle African-American Adolescent Sexual Behavior. *Research in Nursing & Health*. 2007; 30:193–202. doi:10.1002/nur.20193. [PubMed: 17380520]

- Epstein M, Ward LM. "Always Use Protection": Communication boys receive about sex from parents, peers, and the media. *Journal of Youth and Adolescence*. 2007; 37:113–126. doi: 10.1007/s10964-007-9187-1.
- Fishbein; Ajzen. *Predicting and Changing Behavior*. Taylor & Francis; New York, NY: 2010.
- Gillmore MR, Chen ACC, Haas SA, Kopak AM, Robillard AG. Do family and parenting factors in adolescence influence condom use in early adulthood in a multiethnic sample of young adults? *Journal of Youth and Adolescence*. 2011; 40:1503–1518. doi:10.1007/s10964-011-9631-0. [PubMed: 21279676]
- Greene, JO. Models of adult communication skill acquisition: Practice and the course of performance improvement. In: Greene, JO.; Burlison, BR., editors. *Handbook of Communication and Social Interaction Skills*. Lawrence Erlbaum Associates; New York, NY: 2003. p. 51-91.
- Guzmán BL, Schlehofer-Sutton MM, Villanueva CM, Stritto MED, Casada BJ, Feria A. Let's talk about sex: How comfortable discussions about sex impact teen sexual behavior. *Journal of Health Communication*. 2003; 8:583–598. doi:10.1080/10810730390250425. [PubMed: 14690890]
- Haffner DW. Facing facts: Sexual health for American adolescents. *Journal of Adolescent Health*. 1998; 22:453–459. doi:10.1016/S1054-139X(97)00213-9. [PubMed: 9627815]
- Hutchinson MK, Cooney TM. Patterns of parent-teen sexual risk communication: Implications for intervention. *Family Relations*. 1998; 47:185–194.
- Jaccard J, Dittus PJ, Gordon VV. Parent-adolescent congruency in reports of adolescent sexual behavior and in communications about sexual behavior. *Child Development*. 1998; 69:247–261. [PubMed: 9499570]
- Jaccard J, Dittus PJ, Gordon VV. Parent-teen communication about premarital sex: Factors associated with the extent of communication. *Journal of Adolescent Research*. 2000; 15:187–208. doi: 10.1177/0743558400152001.
- Jaccard, Dodge T, Dittus P. Parent-adolescent communication about sex and birth control: A conceptual framework. *New Directions for Child and Adolescent Development*. 2002; 97:9–41. doi:10.1002/cd.48. [PubMed: 14964942]
- Lefkowitz ES. Beyond the yes-no question: Measuring parent-adolescent communication about sex. *New Directions in Child and Adolescent Development*. 2002; 97:43–56. DOI:10.1002/cd.49.
- Lefkowitz ES, Romo LF, Corona R, Au TKF, Sigman M. How Latino American and European American adolescents discuss conflicts, sexuality, and AIDS with their mothers. *Developmental Psychology*. 2000; 36:315–325. doi: 10.1037//0012-1649.36.3.315. [PubMed: 10830976]
- Lefkowitz ES, Boone TL, Shearer CL. Communication with best friends about sex-related topics during emerging adulthood. *Journal of Youth and Adolescence*. 2004; 33:339–351. doi:10.1023/B:JOYO.0000032642.27242.c1.
- Lefkowitz ES, Espinosa-Hernandez G. Sex-related communication with mothers and close friends during the transition to university. *Journal of Sex Research*. 2007; 44:17–27. doi: 10.1080/00224490709336789. [PubMed: 17599261]
- Madkour AS, Farhat T, Halpern CT, Godeau E, Gabhainn SN. Early Adolescent Sexual Initiation as a Problem Behavior: A Comparative Study of Five Nations. *Journal of Adolescent Health*. 2010; 47:389–398. doi:10.1016/j.jadohealth.2010.02.008. [PubMed: 20864009]
- Metts, S.; Spitzberg, BH. Sexual communication in interpersonal contexts: A script-based approach. In: Burlison, BR., editor. *Communication Yearbook*. Vol. 19. Sage Publications, Inc.; Thousand Oaks, CA: 1996. p. 49-91.
- Milhausen RR, Sales JM, Wingood GM, Diclemente RJ, Salazar LF, Crosby RA. Validation of a Partner Sexual Communication Scale for Use in HIV/AIDS Prevention Interventions. *Journal of HIV/AIDS Prevention in Children & Youth*. 2007; 8(1):11–33.
- Miller BC, Benson B, Galbraith KA. Family Relationships and Adolescent Pregnancy Risk: A Research Synthesis. *Developmental Review*. 2001; 21:1–38. doi:10.1006/drev.2000.0513.
- Miller KS, Fasula AM, Dittus P, Wiegand RE, Wyckoff SC, McNair L. Barriers and facilitators to maternal communication with preadolescents about age-relevant sexual topics. *AIDS and Behavior*. 2009; 13:365–374. doi:10.1007/s10461-007-9324-6. [PubMed: 17985227]
- Newcomer S, Udry JR. Parental Marital Status Effects on Adolescent Sexual Behavior. *Journal of Marriage and Family*. 1984; 49:235–240.

- Noar SM, Carlyle K, Cole C. Why communication is crucial: Meta-analysis of the relationship between safer sexual communication and condom use. *Journal of Health Communication*. 2006; 11:365–90. doi:10.1080/10810730600671862. [PubMed: 16720536]
- Nolin MJ, Petersen KK. Gender Differences in Parent-Child Communication about Sexuality: An Exploratory Study. *Journal of Adolescent Research*. 1992; 7:59–79. doi: 10.1177/074355489271005.
- Papini DR, Farmer FL, Clark SM, Snell WE. An evaluation of adolescent patterns of sexual self-disclosure to parents and friends. *Journal of Adolescent Research*. 1988; 3:387–401. doi: 10.1177/074355488833011.
- Powell HL, Segrin C. The effect of family and peer communication on college students' communication with dating partners about HIV and AIDS. *Health Communication*. 2004; 16:427–449. Doi:10.1207/s15327027hc1604_3. [PubMed: 15465689]
- Prinstein, MJ.; Dodge, KA. *Understanding Peer Influence in Children and Adolescents*. The Guilford Press; New York, NY: 2008.
- Ryan S, Franzetta K, anlove J, Holcombe E. Adolescents' discussions about contraception or STDs with partners before first sex. *Perspectives on Sexual and Reproductive Health*. 2007; 39:149–157. doi:10.1363/3914907. [PubMed: 17845526]
- Sales JM, Lang DL, DiClemente RJ, Latham TP, Wingood GM, Hardin JW, Rose ES. The mediating role of partner communication frequency on condom use among African American adolescent females participating in an HIV prevention intervention. *Health Psychology*. 2012; 31:63–69. doi: 10.1037/a0025073. [PubMed: 21843001]
- Sheeran P, Abraham C, Orbell S. Psychosocial correlates of heterosexual condom use: A meta-analysis. *Psychological Bulletin*. 1999; 125:90–132. doi:10.1037/0033-2909.125.1.90. [PubMed: 9990846]
- Sprecher S, Harris G, Meyers A. Perceptions of sources of sex education and targets of sex communication: Sociodemographic and cohort effects. *Journal of Sex Research*. 2008; 45:17–26. doi:10.1080/00224490701629522. [PubMed: 18321027]
- Spriggs AL, Halpern CT. Timing of Sexual Debut and Initiation of Postsecondary Education by Early Adulthood. *Perspectives on Sexual and Reproductive Health*. 2008; 40:152–161. doi: 10.1363/4015208. [PubMed: 18803797]
- Swain CR, Ackerman LK, Ackerman MA. The influence of individual characteristics and contraceptive beliefs on parent-teen sexual communications: A structural model. *Journal of Adolescent Health*. 2006; 38:753.e9–753.e18. doi:10.1016/j.jadohealth.2005.08.015. [PubMed: 16730607]
- Tschann JM, Adler NE. Sexual self-acceptance, communication with partner, and contraceptive use among adolescent females: A longitudinal study. *Journal of Research on Adolescents*. 1997; 7:413–430. doi:10.1207/s15327795jra0704_4.
- Turner CF, Ku L, Rogers SM, Lindberg LD, Pleck JH, Sonenstein FL. Adolescent sexual behavior, drug use, and violence: Increased reporting with computer survey technology. *Science*. 1998; 280:867–873. doi:10.1126/science.280.5365.867. [PubMed: 9572724]
- Whitaker DJ, Miller KS, May DC, Levin ML. Teenage partners' communication about sexual risk and condom use: The importance of parent-teenager discussions. *Family Planning Perspectives*. 1999; 31:117–121. [PubMed: 10379427]
- Widman L, Golin CE, Noar SM. When do condom use intentions lead to actions? Examining the role of sexual communication on safer sexual behavior among people living with HIV. *Journal of Health Psychology*. 2013 Online First. doi: 10.1177/1359105312446769.
- Widman L, Welsh DP, McNulty JK, Little KC. Sexual communication and contraceptive use in adolescent dating couples. *Journal of Adolescent Health*. 2006; 39:893–899. doi:10.1016/j.jadohealth.2006.06.003. [PubMed: 17116521]

Table 1

Early Adolescents' Sexual Communication in the Past Year with Their Dating Partners, Parents, and Best Friends

	Dating Partners	Parents	Best Friends	Between Group Comparisons*		
	(A)	(B)	(C)	(A-B)	(A-C)	(B-C)
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	χ^2 (<i>Phi</i>)	χ^2 (<i>Phi</i>)	χ^2 (<i>Phi</i>)
<i>Individual Communication Topics</i>						
Using Condoms	182 (30%)	281 (47%)	323 (54%)	33.91 (.24)	121.73 (.45)	42.89 (.27)
Using Other Birth Control	103 (17%)	207 (34%)	176 (30%)	28.55 (.22)	108.04 (.42)	81.90 (.37)
Risk of STDs	120 (20%)	278 (46%)	262 (44%)	47.23 (.28)	105.39 (.42)	54.80 (.30)
Risk of HIV/AIDS	116 (19%)	269 (45%)	253 (42%)	47.18 (.28)	93.12 (.39)	50.55 (.29)
Risk of Pregnancy	170 (28%)	336 (56%)	282 (47%)	55.83 (.30)	155.75 (.51)	85.83 (.38)
Abstinence/Waiting	200 (33%)	374 (62%)	345 (58%)	29.83 (.22)	87.45 (.38)	51.18 (.29)
<i>Across Communication Topics</i>						
Discussed At Least One Topic	275 (46%)	430 (71%)	446 (75%)	43.26 (.27)	87.78 (.38)	56.32 (.31)
Discussed All Six Topics	50 (8%)	155 (26%)	117 (20%)	27.94 (.22)	89.51 (.39)	43.45 (.27)

Note, *n* (%) = number and percentage who have engaged in any sexual communication on that topic in the past year. Dating partner *n* = 603, Parent *n* = 601, Best Friend *n* = 597. (*Phi*) = Phi coefficient effect size for Chi Square comparisons.

* All between group comparisons were significant using a Bonferroni adjustment for multiple comparisons (.05/24 = *p* < .002)

Table 2

Mean Number of Topics Discussed by Communication Partner and Gender, Ethnicity, and Sexual Activity Status

	Dating Partners	Parents	Best Friends	Mixed-Model ANOVA					
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>F</i> (Within)	η^2	<i>F</i> (Between)	η^2	<i>F</i> (Interaction)	η^2
<i>Gender</i>				116.51***	.17	23.03***	.04	7.79***	.01
Girls (<i>n</i> =337)	1.55 (2.05)	3.27 (2.39)	3.15 (2.28)						
Boys (<i>n</i> =252)	1.31 (1.98)	2.35 (2.35)	2.23 (2.19)						
<i>Ethnicity</i>				100.50***	.15	3.70*	.02	3.90**	.02
Caucasian (<i>n</i> =275)	1.37 (1.96)	2.48 (2.34)	2.79 (2.31)						
African American (<i>n</i> =140)	1.73 (2.13)	3.45 (2.49)	3.17 (2.30)						
Latino (<i>n</i> =128)	1.38 (2.06)	2.91 (2.40)	2.32 (2.20)						
Mixed/Other (<i>n</i> =46)	1.24 (1.88)	3.39 (2.26)	2.48 (2.18)						
<i>Sexually Active</i>				23.96***	.04	18.27***	.03	7.76**	.01
Yes (<i>n</i> =56)	2.95 (2.14)	3.18 (2.28)	3.79 (2.11)						
No (<i>n</i> =533)	1.29 (1.94)	2.84 (2.43)	2.65 (2.28)						

Note. Scale range for number of sexual topics = 0 – 6. *F* (Within) = within-group comparison by communication partner (dating partner, parent, or best friend). *F* (between) = between-group comparison by gender, ethnicity, or sexual activity status. η^2 =partial eta squared effect size. *N* = 589 [14 participants were excluded due to missing data on parent or friend communication (*n*=7), ethnicity (*n*=1), or sexual activity status (*n*=6)].

*
p < .05

**
p < .01

p < .001

Table 3

Negative Binomial Regression Analysis Examining Number of Sexual Topics Discussed with Dating Partners

	B	SE	Wald Chi-Square	MR [95% CI]
<i>Step 1: Main Effects</i>				
Age	0.20	0.08	7.10**	1.23 [1.06, 1.42]
Gender	-0.12	0.12	1.02	0.88 [0.69, 1.13]
Ethnicity: African American	0.11	0.15	0.55	1.12 [0.83, 1.49]
Ethnicity: Latino	0.20	0.16	1.55	1.22 [0.89, 1.66]
Ethnicity: Mixed/Other	-0.08	0.24	0.10	0.93 [0.57, 1.49]
Sexual Activity Status	-0.57	0.18	10.24**	0.56 [0.40, 0.80]
Parent Sexual Communication	0.08	0.03	9.04**	1.09 [1.03, 1.15]
Best Friend Sexual Communication	0.37	0.03	147.54***	1.44 [1.36, 1.53]
<i>Step 2: Parent by Friend Interaction</i>				
Age	0.20	0.08	6.86**	1.22 [1.05, 1.42]
Gender	-0.13	0.12	1.09	0.88 [0.69, 1.12]
Ethnicity: African American	0.12	0.15	0.61	1.12 [0.84, 1.50]
Ethnicity: Latino	0.20	0.16	1.64	1.23 [0.90, 1.67]
Ethnicity: Mixed/Other	-0.05	0.24	0.05	0.95 [0.59, 1.53]
Sexual Activity Status	-0.55	0.18	9.40**	0.58 [0.41, 0.82]
Parent Sexual Communication	0.10	0.03	12.01**	1.11 [1.05, 1.17]
Best Friend Sexual Communication	0.38	0.03	148.22***	1.46 [1.37, 1.55]
Parent × Best Friend Communication	-0.03	0.01	4.00*	0.98 [0.95, 0.99]

Note. MR [95% CI] = Mean Ratio [95% Confidence Interval]. Gender: 0=girls, 1=boys. Reference category for ethnicity = Caucasian. Sexual Activity Status: 0=has not had sex, 1=has had sex. $N = 589$ for negative binomial regression model; participants were excluded from this analysis if they were missing data on parent or friend communication ($n=7$), sexual activity status ($n=6$), or ethnicity ($n=1$).

* $p < .05$.

** $p < .01$.

*** $p < .001$.