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Condom Use Self-Efficacy Among Younger Rural Adolescents: The Influence of Parent-Teen Communication, and Knowledge of and Attitudes Toward Condoms

Tiarney D. Ritchwood¹, Dolly Penn¹, Courtney Peasant², Tashuna Albritton², and Giselle Corbie-Smith¹

¹University of North Carolina at Chapel Hill, USA

²Yale University, New Haven, CT, USA

Abstract

This study examines the role of condom use knowledge and attitudes, and parent-teen communication about sex and relationship quality on reports of condom use self-efficacy among rural, African American youth. Participants were 465 North Carolinian youth (10–14 years). Results indicated that greater condom use self-efficacy was predicted by greater knowledge of condom use ($\beta = .206$; $p < .001$), more favorable attitudes toward condom use ($\beta = -.20$; $p < .0001$) and parent-teen communication about sex ($\beta = .13$; $p < .05$), and actual parent-teen communication about sex and dating ($\beta = .14$; $p < .05$). There was low agreement between parents and youth on measures related to parent-teen communication about sex. Findings call for interventions targeting improvement of condom use knowledge among early adolescents, as well as parent-teen communication about sex. In addition, given the low parent-teen agreement regarding sexual communication, parent-teen sexual communication is an important point of intervention.

Keywords

African American youth; condom use; parent-teen communication

Adolescence is a period of development during which many youth become aware of their existence as sexual beings. This developmental period often marks the transition to sexual intercourse, which is occurring at progressively younger ages (Kaestle, Halpern, Miller, & Ford, 2005) and has been a cause of concern for rural, African American youth (Murry et al., 2011). African American youth, in particular, report an age of sexual debut that is earlier than the national average of 16 years (Cavazos-Rehg et al., 2009). Early sexual debut is associated with a host of adverse consequences, including teen pregnancy and sexually transmitted infections (STIs), that disproportionately affect African American youth

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Corresponding Author: Tiarney D. Ritchwood, University of North Carolina at Chapel Hill, 333 South Columbia St., Chapel Hill, NC 27599, USA. tdritchwood@unc.edu.

Declaration of Conflicting Interests

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(Centers for Disease Control and Prevention [CDC], 2008). African American adolescents, for example, are more likely than their White or Hispanic peers to report having four or more lifetime sexual partners (e.g., Kann et al., 2014). Similarly, more African American youth than Hispanic or White youth report initiating sex before the age of 13 (Kann et al., 2014). Some studies have found that African American boys, compared with boys and girls from other ethnic groups, are more likely to report sexual behaviors that increase their STI risk (e.g., Zimmer-Gembeck & Helfand, 2008). Taken together, these findings suggest that it is imperative that we intervene early to provide age-appropriate sexual health information to African American preadolescents and early adolescents, which will enable them to engage in safer sexual behaviors upon debut.

To facilitate the success of prevention programs among early adolescents, we must identify and target cognitive processes that could lead to the internalization of values and beliefs supportive of safe sexual practices (L'Engle & Jackson, 2008). For preadolescent and early adolescent youth, this suggests that we must not only identify predictors of sexual risk but also focus on identifying antecedents of safer sexual practices, which could protect youth from STIs (Ritchwood, Penn, DiClemente, Rose, & Sales, 2014). An emphasis on antecedents of safe sexual practices is particularly important for precoital youth, as it is often easier to prevent problematic behaviors rather than alter them once initiated and internalized (Catalano et al., 2012). In addition, prevention programs may be more effective when there is a greater focus on the mechanism by which increased knowledge and instruction lead to the expected behavioral changes rather than on the behavior itself.

Self-efficacy, one such mechanism, describes one's belief in his or her ability to perform a particular act (Bandura, 1977). Many studies have linked self-efficacy to anticipated behavioral outcomes (e.g., Johnston-Briggs, Liu, Carter-Pokras, & Barnet, 2008; Wang, Cheng, & Chou, 2009). According to Social Cognitive Theory, for example, youth reporting higher self-efficacy have a greater likelihood of expending more effort to accomplish their goals over longer periods of time (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001) and demonstrate more intentional behavior regarding goal planning and action initiation (Schwarzer, 2008) than their peers with lower self-efficacy. Consistent with these findings, researchers have focused on condom use self-efficacy in particular, as high levels of condom use self-efficacy have been associated with safer sexual practices among adolescents (e.g., O'Leary, Jemmott, & Jemmott, 2008). According to the Theory of Planned Behavior (Ajzen, 1991), perceptions of one's ability to perform a behavior, or self-efficacy, could predict subsequent engagement in that behavior. In this case, we would expect that precoital youth who report condom use self-efficacy may be more likely to use condoms upon debut; therefore, it is important to examine antecedents of condom use self-efficacy. Just as there are gender differences in engagement in sexual activity, there may also be gender differences in condom use self-efficacy. Although sexually active boys and men can make a unilateral decision to use a condom, girls and women must negotiate condom use. Therefore, condom use self-efficacy may mean something qualitatively different for male and female youth. Adolescent males may view condom use self-efficacy as the ability to obtain and properly use a condom. However, for adolescent females condom use self-efficacy also includes the ability to successfully negotiate condom use without jeopardizing their relational goals (Peasant, Parra, & Okwumabua, 2015). As a result, girls may report lower rates of condom

use self-efficacy than their male counterparts. Given the potential importance of condom use self-efficacy in the facilitation of safer sexual practices, it is critical that we understand and identify its antecedents, which may include parental influence.

Parents are in a unique position to address gaps in preadolescent and adolescent sexual health education for reasons such as the following: (a) parents have an opportunity to communicate their expectations and values to their children at a young age and prior to sexual debut and (b) parents are able to have continuous and developmentally appropriate conversations with their children about sex and could therefore provide accurate and timely information (K. S. Miller et al., 2009). However, there is often contradiction about the quantity and quality of communication about sex that occurs in parent-teen relationships. Mothers tend to overestimate and teens tend to underestimate discussions about sex, including perceptions about maternal and teen disapproval of sexual activity (Jaccard, Dittus, & Gordon, 1998). Although these contradictions exist, parent-teen communication positively impacts teen sexual behaviors, including delayed sexual debut and consistent condom use (e.g., Akers, Holland, & Bost, 2011). To date, however, no studies have examined the influences of these antecedents of safer sexual practices on condom use self-efficacy among preadolescent and early adolescent youth.

The purpose of the current study is to examine the effect of condom use knowledge and attitudes, and parent-teen communication and relationship quality on reports of condom use self-efficacy among a sample of rural, primarily African American youth. The examination of the antecedents to condom use self-efficacy among preadolescent and early adolescent rural, African American youth may enable researchers to better understand youth's sexual practices upon debut. It may also provide a better understanding of gender differences in the condom use self-efficacy and the influence of parental communication on the youth's perspective. In turn, this increased understanding has the potential to inform the development of more effective and targeted STI prevention programs for this population.

Method

Sample and Procedure

The following study was approved by the Institutional Review Board at the University of North Carolina at Chapel Hill and focuses on baseline data from the Teach One, Reach One (TORO) intervention, which is an HIV prevention program developed for African American youth and their caregivers. Between December 2008 and May 2012, participants were recruited from five counties in rural, eastern North Carolina, which were comparable in poverty rates, ethnic composition, and population (State Center for Health Statistics, Office of Healthy Carolinians/Health Education, 2012). Eligible youth self-identified as African American, resided in target counties in North Carolina, and were between 10 and 14 years of age. Eligible caregivers were at least 18 years of age and were either the biological parent, primary caregiver, or parental figure for the participating youth. Participants were recruited from churches, schools, and other local organizations, by distribution of fliers and brochures, and through radio and newspaper announcements. Recruitment fliers for ambassadors listed inclusion criteria, which included residency in one of the target counties, age range, willingness and ability to share information with others, and commitment to either biweekly

or monthly meetings. In addition, ambassador fliers indicated that, through participation, youth and adults would learn about “(a) making healthy dating decisions, (b) how to make healthy decisions during risky situations, and (c) talking to others about how to say no.” Regarding allies, ambassadors provided them with brochures, in which youth and caregiver dyads learned more about the study. The brochures contained information regarding the study’s emphasis on HIV prevention, the number of intervention sessions, incentives offered, and number of required surveys. The brochure also mentioned that the program was specifically designed to help African American youth (ages 10–14) reduce their risk of exposure to HIV as they grow into adulthood.

For the comparison group, in addition to inquiring about eligibility criteria, recruitment fliers indicated that participants were needed for “a short research study about dating, relationships, and communication.” Along with this description of the study, the flier indicated that participants must be available to complete two surveys lasting up to 1.5 hours each. Aside from contact information, no additional information was included on the flier. Interested individuals in both the intervention and comparison groups were informed that they were being recruited for an HIV prevention study. Individuals in the intervention arm were provided with a detailed brochure describing the TORO intervention, the expectations, and potential knowledge to be gained. Potential caregiver-youth dyads completed an initial screener for eligibility. If interested and determined eligible, caregivers were asked to sign a caregiver consent form for themselves and their youth. Youth were asked to sign an assent form. Participants completed a self-administered baseline survey. To address potential issues regarding confidentiality and low literacy, we used audio-computer assisted self-interview (ACASI). Initially, participants were offered US\$10 for participation. However, over time, a few study sites reported difficulty recruiting participants. At the recommendation of community partners, we increased the incentive amount from US\$10 to US\$30 to address recruitment challenges experienced in certain counties.

Measures

Sexual activity—Participants were asked if they ever had either vaginal, anal, or oral sex, with responses ranging between 1 (*Yes*) and 0 (*No*).

Condom use self-efficacy—We assessed youth’s perceptions of their abilities to obtain and use condoms using an eight-item scale, with responses ranging between 0 (*I’m sure I could not*) and 3 (*I’m sure I could*; Basen-Engquist et al., 1998). Items were summed to create a composite score $\alpha = .87$.

Open parent-teen communication—To assess adolescents’ perception of open communication with their caregivers, we used a subscale from Barnes and Olson’s (1985) Parent-Adolescent Communication Scale (PACS). The Open Family Communication subscale assesses the degree of openness and positive experiences in communicating with one’s parent (10 items, $\alpha = .88$). This scale uses a 4-point Likert scale from 0 (*strongly disagree*) to 3 (*strongly agree*).

Attitude toward parent-teen communication about sex—We measured adolescents' attitudes toward parent-teen communication about sex using a five-item scale ($\alpha = .79$), developed de novo, which assessed the degree to which youth believed that caregivers should talk to their children about topics of a sexual nature. Responses ranged from 0 (*strongly disagree*) to 3 (*strongly agree*) and were summed to generate an overall score.

Parent-teen communication about sexual health topics—We assessed the extent to which adolescents and caregivers report parent-teen communication about sexual health topics using 20 items ($\alpha = .94$) using items from the PACS (Sales et al., 2008), as well as developed by the study team. This scale, which used comparable items for both parents and youth, inquired about whether parents had discussed various sexual health-related topics with their youth, including discussion about HIV/AIDS, menstruation, condom use, physical development, and pregnancy. Responses ranged from 0 (*never*) to 3 (*often*).

Knowledge of condom use—We measured adolescents' knowledge of condom use with a six-item ($\alpha = .46$), true-false (*true* = 0, *false* = 1, *I don't know* = 2) scale developed by Coyle et al. (2006). Responses endorsing "I don't know" were coded as incorrect. The scale contained items such as "It is good to use baby oil and Vaseline with condoms." Scores were summed, with low scores indicating higher knowledge.

Attitudes toward condom use—We measured adolescents' attitudes toward condom use with an individual item developed de novo. Participants were asked about the degree to which they agreed with the following statement: "I just don't like the idea of using condoms." Responses ranged from 0 (*strongly disagree*) to 3 (*strongly agree*).

Analysis Plan

Data were analyzed using SPSS, Version 21 (IBM, 2012). We assessed participant characteristics using descriptive statistics (e.g., means and standard deviations). We used linear regression to examine the independent ability of age, gender, open parent-teen communication, attitudes toward parent-teen communication, and knowledge of and attitudes toward condom use to predict condom use self-efficacy. Race was a covariate in the model. Significance was defined by $\alpha < .05$. We used the intraclass correlation coefficient (ICC; Fleiss & Cohen, 1973) to measure agreement between parents and youth on scales measuring attitudes toward parent-teen communication and communication about sexual health topics. Items on scales were included if both parents and youth answered the same question, or one that could be interpreted to be inquiring of the same concept. The ICC describes the proportion of variance that is associated with differences in the way in which questions are answered and describes the degree to which caregivers and youth are consistent in their ratings when answering the same question. An ICC of at least .80 was considered acceptable.

Results

Table 1 shows the demographic characteristics of the 465 youth and their caregivers. Analyses for this study focus only on the youth. Youth primarily identified as African American, were on average 12.55 years of age, and were in Grades 6 to 8. It is notable that

30 youth indicated that they were non–African American, despite the program focusing on African American youth. A few of our community sites, which service youth from different ethnic backgrounds, reported discomfort with turning interested participants away. As a result, a negligible amount of non–African American youth were included in the study. Caregivers, also primarily identified as African American, were on average 36 years of age, female, and were the biological parents of the participating youth. Most caregivers reported some college/technical school education and an average yearly income of less than US \$20,000.

Overall, youth reported favorable attitudes toward communicating with their parents about sex and dating and rated open parent-teen communication about general subjects highly (Table 2). In addition, youth reported favorable attitudes toward condom use and high levels of condom use knowledge and self-efficacy. It is notable that only 13% ($n = 59$) of youth reported sexual activity. Sexually active youth reported slightly higher levels of condom use self-efficacy ($\bar{X} = 16.29$, $SD = 6.21$) compared with their peers who had not reported sexual activity ($\bar{X} = 14.37$, $SD = 6.53$); $t(307) = 2.51$, $p < .05$.

We measured parent-teen agreement using the ICC. With caregivers and youth completing comparable measures of communication and sexual health topics, we found low agreement between parents and youth on scales measuring attitudes toward parent-teen communication and parent-teen communication about sexual health topics (Table 3). We used linear regression to test the model identifying predictors of condom use self-efficacy among youth. Controlling for age and gender, we found that greater condom use self-efficacy was predicted by greater knowledge of condom use ($\beta = .206$; $p < .001$), more favorable attitudes toward condom use ($\beta = -.20$; $p < .0001$) and parent-teen communication about sex ($\beta = .13$; $p < .05$), and actual parent-teen communication about sex and dating ($\beta = .14$; $p < .05$; Table 4).

Discussion

The purpose of the current study was to examine the impact of knowledge, attitudes, and beliefs on early adolescents' reports of condom use self-efficacy. Overall, we found that knowledge of condom use, and favorable attitudes toward condom use and parent-teen communication about sex were associated with higher condom use self-efficacy among rural, primarily African American youth.

According to Social Cognitive Theory, self-efficacy can be fostered through increased knowledge that a threat exists, mastery of skills related to addressing a behavior, social modeling, and verbal persuasion (e.g., McAlister, Perry, & Parcel, 2008). Moreover, Health Behavior Theory suggests that increases in knowledge will promote favorable attitudes, self-efficacy, and ultimately, safe sexual behaviors (Bandura, 1977; Hanna, 1999; Lindberg, 2000; McAlister et al., 2008). Taken together, these theories, as well as the results of this study, suggest that as youth learn more about condoms and their benefits, they become more confident in their ability to obtain and use condoms. Although this finding may seem intuitive, few studies have explicitly examined the influence of knowledge of condom use on condom use self-efficacy among early adolescents (Lindberg, 2000). Our findings advocate

for HIV prevention programs during early adolescence, as greater condom use knowledge may be directly related to actual condom use.

As expected, favorable attitudes toward condom use among youth were associated with greater condom use self-efficacy. This finding is congruent with a previous study that found a positive relationship between condom use attitudes and condom use self-efficacy (Farmer & Meston, 2006). However, the present study highlights the importance of the relation between condom use attitudes and self-efficacy during early adolescence. Early adolescents are actively developing opinions and attitudes about condom use through their experiences; conversations with friends, families, and other authority figures (e.g., teachers, religious leaders, and coaches); exposure to media; and education. Therefore, it is important to highlight the benefits of condom use to promote positive attitudes toward condom use, leading to greater condom use self-efficacy and potentially, more condom use during sexual activity. Although messages about the benefits of condom use should be conveyed in an age-appropriate manner, our findings suggest that these messages may be a viable catalyst for intervention, even for early adolescents. Our findings also suggest that early adolescents start to form attitudes about condoms at a young age, even prior to sexual debut. Therefore, it is imperative that any efforts to improve adolescent sexual outcome include discussing the benefits of condom use with youth in a developmentally appropriate manner.

Attitudes toward parent-teen communication about sex were also important, as favorable attitudes toward parent-teen communication about sex were predictive of greater condom use self-efficacy. This finding extends previous research that explicated the relationship between actual communication with parents about sex and delay in sexual debut and increased condom use during sex (Guzmán et al., 2003; Hadley et al., 2009). In fact, previous research has suggested that parent-teen communication about sexual health topics prior to behavioral onset leads to less sexual risk and more condom use after debut (Atienzo, Walker, Campero, Lamadrid-Figueroa, & Gutiérrez, 2009; Buzi, Smith, & Weinman, 2009). This finding also demonstrates the importance of youth's attitudes regarding having conversations with caregivers about sex, as those youth who were more receptive to such conversations also reported greater condom use self-efficacy.

We found extremely low agreement on topics related to sexual communication within parent-youth dyads. The low agreement between parents and early adolescents' reports of sexual communication in our study is concerning but not surprising considering that similar discrepancies have been reported in the literature (Hadley et al., 2009; K. S. Miller, Kotchick, Dorsey, Forehand, & Ham, 1998). For example, in one study investigating mother-teen communication about sensitive sexual topics, including AIDS, STIs, and unintended pregnancy, correlations were low, ranging from .07 to .28 (Jaccard et al., 1998). Explanations for this discrepancy may be attributable to the process and mode of communication. Parents are often embarrassed to discuss sex with their children (Wilson, Dalberth, Koo, & Gard, 2010). Therefore, they may use vague phrases or allude to certain sexual topics expecting their child to pick up on conversational cues. Parents may also have moral discussions with their adolescent about sex but may fail to discuss more concrete facts about sex and sexuality (Wilson et al., 2010). Unfortunately, vague allusions, moral instruction, and group conversations may not be perceived as sexual communication by an

adolescent. Relatedly, previous research has shown that parent-teen conversations that focus only on sexual risk are associated with less condom use and greater likelihood of sex initiation (Deptula, Henry, & Schoeny, 2010). In addition to parental embarrassment, some early adolescents may also be embarrassed about having conversations about sex with their parents. Therefore, they may fail to attend to parental sex-related conversations or information. These explanations are especially feasible given the discordant reports between parents and youth regarding the frequency of sexual discussions. This finding illustrates the necessity of clear communication between parents and teens. Although parents may believe that they are conveying sex-related information to their teens, they should confirm that their messages are understood.

The current study is not without limitations. The participants in this study were predominantly rural, early adolescent African American youth. Therefore, our findings may not be generalizable beyond our target population but still provide information that may be highly relevant to similar at-risk populations. The current study focuses only on predictors of condom self-efficacy, and we were unable to examine predictors of actual condom use among participants, as only a small proportion of the youth reported sexual intercourse. However, previous research has indicated that African American youth may be more likely than youth of other ethnicities to initiate sexual intercourse before 13 years of age (Murry et al., 2011). Therefore, future research should investigate the relationship between condom use self-efficacy and condom use among rural, African American youth. Lastly, the knowledge of condom use scale had low reliability, indicating that it may not have fully represented this construct.

Limitations aside, our findings have implications for sexual health promotion efforts among rural, African American youth. The condom use self-efficacy of these youth is important because sexual debut occurs at an earlier age among rural youth compared with the general adolescent population (Murry et al., 2011). Moreover, these youth are at significant risk for STI. The current study demonstrated that favorable attitudes toward condoms and parent-teen sexual communication, and knowledge about condoms are associated with greater condom use self-efficacy, suggesting that more interventions are needed that focus on improving the condom use knowledge of early adolescents, as well as parent-teen communication about sex. In addition, given the low agreement between parent and teens regarding sexual communication, parent-teen sexual communication is an important point of intervention. Targeting parent-teen sexual communication is an effective way to promote safer sexual behavior among youth (Bogart et al., 2013; Ladapo et al., 2013). Furthermore, our results suggest that youth are open to the opportunity to discuss sex and sexuality with their parents. Therefore, the promotion of open sexual communication between parents and their children may act as a catalyst for safer sexual behaviors.

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Biographies

Tiarney D. Ritchwood, PhD, is a postdoctoral research associate in the Center for Health Equity Research (CHER) at the University of North Carolina at Chapel Hill. Her research investigates the influence of individual and structural factors on adolescent sexual health promotion, HIV prevention, and risk behavior reduction.

Dolly Penn, MD, MSCR, is a preventive medicine resident at the University of North Carolina at Chapel Hill. She is interested in lifestyle medicine and health disparities. Her research focuses on the influence of lifestyle factors on cancer prevention, sexually transmitted infections, and hypertension in vulnerable populations.

Courtney Peasant, PhD, is a postdoctoral fellow at the Center for Interdisciplinary Research on AIDS at Yale University. Her research investigates the influence of intimate partner violence, sexual assault, and substance use on HIV risk behavior among high-risk populations, with a focus on investigating the role of condom negotiation in the promotion of condom use.

Tashuna Albritton, PhD, MSW, is a postdoctoral fellow at Yale University Center for Interdisciplinary Research on AIDS and Yale School of Public Health in New Haven, Connecticut. Her research includes HIV/AIDS and sexually transmitted diseases prevention intervention research among minority adolescents.

Giselle Corbie-Smith, MD, MSc, is professor of social medicine and medicine at the UNC-Chapel Hill School of Medicine. She directs the Program on Health Disparities at the Cecil G. Sheps Center for Health Services Research and the CHER. Her recent line of inquiry focuses on engaging minority and underserved communities in research.

Table 1

Demographic Characteristics of Youth and Caregivers.

	<u>Youth</u>	<u>Caregivers</u>
	% (n)	% (n)
Age (\bar{X} [SD])	12.55 (1.42)	36.18 (11.84)
Gender		
Male	44.5 (207)	20.5 (102)
Female	55.5 (258)	79.5 (395)
Race		
African American	89.8 (422)	90.7 (451)
Non-African American	6.3 (30)	0.6 (3)
Ethnicity		
Hispanic/Latino	8.1 (33)	2.7 (13)
Non-Hispanic/Latino	91.9 (374)	97.3 (472)
Relation to the youth		
Parent	63.1 (283)	54.7 (285)
Relative	18.6 (83)	19.5 (96)
Friend	18.4 (83)	25.7 (127)
Education		
5th grade or less	22.2 (103)	—
6th–8th grade	57 (265)	—
9th–12th grade	20.8 (97)	—
Some high or less	—	21.7 (108)
High school	—	33.9 (168)
Some college/technical school	—	26.2 (130)
College/higher	—	18.1 (90)
Yearly income		
<\$5,000	—	22.5 (112)
\$5,000–\$19,999	—	30.8 (153)
\$20,000–\$39,999	—	21.9 (109)
\$40,000–\$59,999	—	9.7 (48)
\$60,000–\$79,999	—	3.8 (19)
\$80,000 or more	—	2.4 (12)

Note. Totals do not sum up to the sample size because of missing data and rounding.

Table 2

Predictors of Condom Use Self-Efficacy Among Youth.

Construct	Measure name	\bar{X} (SD)	Range	Number of items
Outcome	Self-efficacy of condom use	14.37 (6.53)	0–24	8
Knowledge	Condom use	1.57 (1.56)	0–6	6
Attitudes	Parent-teen communication about sex	11.05 (2.88)	0–15	5
	Attitude toward condom use	0.79 (0.95)	0–3	1
Actual communication	Open parent-teen communication	19.65 (6.02)	0–30	10
	Parent-teen communication about sex	21.41 (15.73)	0–60	20

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Table 3

Parent-Teen Agreement Regarding Conversation About Sexual Topics.

Measure name	Shared items for parents and youth	ICC
Attitude toward parent-teen communication about sex	Parents should talk to their child about sexual behaviors	0.00
	Parents should talk to their child about abstinence	0.001
	Children/youth want to learn about sexuality from their caregivers, parents, or legal guardians.	0.00
	Parents should talk to their child about healthy relationships	0.01
Parent-teen communication about sex (<i>How often have you talked with your child/parent about following topics?</i>)	Menstruation	0.38
	Physical development (how your body changes as you grow up)	0.17
	Abortion (ending of pregnancy)	0.15
	Pregnancy	0.12
	Homosexuality (being gay, lesbian— attracted to people of the same sex)	0.00
	Sex before marriage	0.07
	Condom use	0.18
	Sexually transmitted infections	0.08
	HIV/AIDS	0.05
	Contraception (ways to keep from getting pregnant or knocked up, like birth control)	0.07
	Sexual desire (feeling turned on)	0.08
	Sexual satisfaction (orgasm, skeet, or cum)	0.06
	Vaginal sex	0.06
	Oral sex	0.09
	Anal sex	0.10
	How to say no if I do not want to have sex	0.12
	Choosing a boyfriend/girlfriend	0.08
Role of friends in sexual decision making	0.13	
Masturbation (touching myself on private parts to make myself feel good)	0.09	
Wet dreams (when a boy skeets or cums in his sleep)	0.12	

Note. ICC = intraclass correlation coefficient.

Table 4

Self-Efficacy of Condom Use Among Youth.

Variable	β	<i>t</i>	<i>p</i> value
Age	.24	4.00	<.001***
Gender (ref = female)	-.14	-2.63	.009**
Knowledge of condom use	.21	3.56	<.001***
Attitude toward condom use	-.20	-3.66	<.001***
Attitude toward parent-teen communication about sex	.13	2.10	.037*
Parent-teen communication about sex	.14	2.28	.024*
Open parent-teen communication	.07	0.10	.92

*
p .05.**
p .01.***
p .001.