Prevalence and Correlates of Heterosexual Anal Intercourse among Black and Latina Female Adolescents

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Abstract

Anal intercourse (AI) is a recognized HIV risk behavior, yet little is known about AI among female adolescents. We studied the prevalence and correlates of heterosexual AI (HAI) among Black and Latina female adolescents. The data come from two randomized clinical trials (RCTs) of HIV-prevention interventions with Black and Latina female adolescents. In the second RCT, a Sexual Relationship Power (SRP) Scale was added to the questionnaire. Thirty-five percent of participants in the first RCT ($N = 244$) and 23% of those in the second RCT ($N = 101$) reported engaging in HAI, most without a condom. Significant correlations existed between HAI and a high-risk sexual history. HAI is prevalent in this population. Nurses must educate adolescent female patients about risks associated with HAI.

Keywords

adolescent; anal intercourse; Black; female; HIV prevention; Latina; sexual relationship power

Women represent a growing proportion of HIV and AIDS cases in the United States (Centers for Disease Control and Prevention [CDC], 2008). Twenty-seven percent of those with HIV are female, and 80% of infected women are Black or Latina (CDC, 2008); yet much is unknown about how women become infected with HIV. The Centers for Disease Control and Prevention (CDC) delineates *heterosexual transmission* as the mechanism most responsible for HIV-transmission among women, accounting for 85% of HIV cases among women (CDC, 2008). But the behaviors which constitute heterosexual transmission are not specified; the CDC simply defines it as "heterosexual contact with a person known to have or be at high risk for HIV" (CDC, 2009, p.7).

Most prevention research appears to assume that the transmission mechanism is penile-vaginal intercourse (PVI; Halpern-Felsher, 2008), but evidence indicates that receptive anal intercourse (RAI), which carries the highest risk for transmission of HIV (Halperin, 1999; Jaffe, Seehaus, Wagner, & Leadbeater, 1988), is prevalent among young women, as well as among men who have sex with men (MSM; Lescano et al., 2009; Lindberg, Jones, & Santelli, 2008; Roye, Silverman, & Krauss, 2007). Researchers have found rates of HAI among women ranging from 12% to 35% (Flannery, Ellingson, Votaw, & Schaefer, 2003; Koblin et al., 2008; Roye et al., 2007). The small body of data on this topic indicates that more male-female than male-male couples engage in AI and that approximately seven times more women than men engage in receptive AI (Laumann, Gagnon, & Michael, 1994).

Receptive AI has been estimated to be 5 to 20 times riskier than receptive vaginal intercourse (Royce, Seña, Cates & Cohen, 1997). Because they are consistently receptive partners, women incur much greater risk from heterosexual AI (HAI) than do their male partners. One study of 145 female sex workers in South Africa found that AI was significantly associated with a higher likelihood of HIV-seroconversion (O.R. 2.3; Karim & Ramjee, 1998); yet there has been scant examination of the role of HAI in HIV transmission in women.

Furthermore, evidence suggests that some young people may view AI as being less risky than other sexual behaviors. In one study, while 96% of 12 to 15 year olds were aware that HIV could be transmitted by penile-vaginal intercourse, only 81% believed that penile-anal intercourse could do so (Boekeloo & Howard, 2002). A study of youth, ages 10 to 13 years, found that more than 50% believed that AI lowers, rather than increases, HIV transmission risk (Krauss, Godfrey & O'Day, 2002). Other studies have found that up to 20% of college students do not consider AI to be "having sex" at all (Sanders & Reinisch, 1999).

Recent research has highlighted the importance of the construct of *sexual relationship power* (SRP) for understanding heterosexual relationships and behaviors, including risk and risk reduction behaviors (Pulerwitz, Amaro,, De Jong, Gortmaker, & Rudd, 2002). Power over another occurs when one person in a sexual relationship can dictate the types of sexual behaviors in which the other person will engage (Yoder & Kahn, 1992). In fact, researchers who examined multiple studies of women and HIV risk behaviors found that the most important factor underlying a woman's decisions about HIV-risk behaviors was interpersonal power (Quina, Harlow, Morokoff, Burkholder, & Deiter, 2000). It should be noted that these studies did not address HAI.

Tschann, Adler, Millstein, Gurvey, and Ellen (2002) examined the relationship between the SRP of adolescent sexual partners and condom use during vaginal intercourse. Their findings suggested that when two young sexual partners had discrepant condom-use desires, the one with greater SRP generally got his/her way. An extensive review of the role of gender-based power in determining reproductive health outcomes concluded that understanding gender-based power dynamics is essential to improving reproductive health (Blanc, 2001).

Even though AI is a known risk factor for HIV transmission, little is known about the prevalence and correlates of HAI among adolescents. Furthermore, to our knowledge, there have been no published data examining SRP and HAI among teens. This paper reports on data from two randomized clinical trials (RCTs) of HIV-prevention interventions (Roye et al., 2007) to examine the prevalence of HAI in these samples of minority urban female adolescents and to provide an initial assessment of the relationship, if any, between SRP and HAI.

Methods

Study Setting

For both RCTs, young women completed a baseline assessment before participating in the intervention. The data presented here are from those baseline assessments. Details about the intervention and the results of the RCT have been published elsewhere (Roye et al., 2007).

The first RCT was conducted at two Planned Parenthood centers in New York City (Roye et al., 2007). Eligibility criteria included: age 15–22, sexually active, not currently pregnant, able to speak and understand English, and self-identifying as African American, Caribbean Black, or Hispanic/Latina. In the first RCT, eligibility requirements also included current use of a hormonal method of contraception (all of which were available when the study began) and plans to continue such use. Young women not currently using a hormonal method, but who came to Planned Parenthood to get a prescription for one, were also included in that study. This was an eligibility criterion because the purpose of the study was to test the efficacy of the intervention in promoting condom use among teens who were hormonally protected from pregnancy.

The second study included sexually active teens regardless of hormonal use. It was conducted at a Planned Parenthood Center in an urban area that borders New York City and in a New York City pediatric clinic. It was conducted to test modifications that were made to the intervention; the baseline assessment was modified as well.

For both RCTs, young women who presented for reproductive health care were recruited by a trained female research assistant (RA) from the waiting room. Those who agreed to see if they might be eligible to participate in a study were escorted to a separate room where the study was described; those who agreed to participate were given a brief screening questionnaire to determine eligibility. Those who were eligible and who signed consent completed an in-depth questionnaire about their sexual behaviors.

Participants

The sample from the first pre-intervention assessment included 244 young women, ranging in age from 15 to 21 years. The mean and median ages were 18 years. Forty-five percent self-identified as African American or Caribbean Black, and 55% as Hispanic/Latina. At intake, 54% reported using a hormonal contraception method and the remainder stated that they were about to start. Forty-seven percent reported a history of pregnancy, and 25% reported having had a sexually transmitted infection (STI). Forty-seven percent said they had used a condom at last vaginal intercourse with their main partner, and 58% of those who had a casual partner said they had used a condom at last vaginal intercourse with him. The age of reported first vaginal intercourse ranged from 12 to 21 years ($M = 15$). Ninety percent of respondents stated they had engaged in cunnilingus and 78% that they had engaged in fellatio (see Table 1).

One hundred and one young women, ages 14–22 ($M = 17.4$) participated in the second RCT. Thirty percent of the sample self-identified as African American or Caribbean Black and 70% as Hispanic/Latina. Seventeen percent of the young women reported that they previously had been diagnosed with an STI and 30% reported that they had been pregnant. Fifty-two percent stated that they had used a condom at last vaginal intercourse with their main partner, and 78% of those with a casual partner had used a condom at last vaginal intercourse with him. The age of reported first vaginal intercourse ranged from 12 to 19 years ($M = 15$). Seventy-five percent of respondents stated that they had engaged in cunnilingus and 73% that they had engaged in fellatio (see Table 1).

Human Subjects Protection

These studies were submitted for institutional review board (IRB) review, and approval was obtained from the Hunter College IRB, which had an agreement with Planned Parenthood to act as the IRB for these studies. Because New York State mandates confidential care for minors seeking reproductive health care, the law states that these young people can consent to reproductive-health-related research without requiring parental consent. All participants signed consent prior to study participation. They were informed that the data would be confidential, that only a study number would identify them, and that they could withdraw from the study at any time without repercussions.

Assessment Procedures

For both RCTs the assessment battery was created using the software package Questionnaire Design System$^©$ (QDS) and was administered on a laptop computer via Audio Computer Administered Self Interview (ACASI). ACASI has several advantages over written or verbally-administered questionnaires for assessing sensitive behaviors: (a) Participants can read the questions on the computer and/or listen to them through headphones, thus addressing literacy concerns in a way that causes no embarrassment. (b) It increases recall reliability and reduces social desirability bias. In one study, it not only increased levels of reporting of sensitive behaviors, but it decreased levels of reporting of preventive behaviors (Macalino, Celentano, Latkin, Strathdee, & Vlahov, 2002). (c) It simplifies the process of asking detailed questions by automating skip patterns (e.g., if a young woman did not have a casual partner, or had never engaged in AI, the computer automatically skipped sections of the assessment instrument relevant to those relationship patterns or behaviors). Young women completed the questionnaire alone in a room, on a laptop computer.

Instruments

The majority of the assessment battery used for both interventions was adapted from the set of questionnaires used in the multi-center study of the CDC's Project RESPECT counseling intervention (Kamb et al., 1998). It was modified for use with adolescents in this study and updated to incorporate current HIV prevention information. Sexual behaviors, sexual history, self-efficacy for condom use, and intention to use condoms were measured. Detailed questions were asked about types of intercourse (vaginal/penile, anal/penile, oral/penile, and oral/vaginal) and types of partners (main, casual, and new); questions were asked about ever having engaged in behaviors and behaviors in the previous 2 months and at last intercourse. In-depth information was elicited about the number of protected and unprotected sexual acts in which each young woman had engaged for each intercourse type and with each partner type. If respondents had more than one partner, or more than one partner type, they answered questions about each. Additional questions for both pre-intervention assessments were derived from a New York State Department of Health AIDS Institute study of women (Krauss et al., 2000). The entire battery was pilot tested for language and reading level with urban teenage women of the same race/ethnicity as the study teens; questions and wording were changed as needed (Roye et al., 2007)).

Because analysis of the data in the first RCT revealed that HAI was a prevalent behavior in that sample, the Sexual Relationship Power Scale (SRPS) was added to the second pre-intervention assessment battery in order to explore whether relationship power influenced HAI. The SRPS is a 23-item scale based upon the Theory of Gender and Power and upon Social Exchange Theory (Pulerwitz, Gortmaker, & DeJong, 2000). It had good internal reliability (Cronbach alpha = .84) in a study of 388 young minority women (Pulerwitz et al., 2000). In validation studies, SRPS scores were positively associated with a history of condom use during vaginal intercourse ($p < .01$) and were inversely associated both with history of physical

violence in a relationship ($p = 0.01$) and with relationship history of forced sex ($p = 0.001$; Pulerwitz et al., 2002).

The SRPS has 2 subscales: Relationship Control (15 items) and Decision Making Power (8 items). In the present study, a factor analysis was conducted on the 15 items comprising the Relationship Control subscale. A KMO of .87 was obtained, indicating that the data were appropriate for factor analysis. The items loaded on a single factor, eigenvalue = 6.8, with item loadings ranging from $r = .53$ to $r = .77$. A reliability analysis yielded a Chronbach's alpha of . 90. Item total correlations ranged from $r = .43$ to $r = .73$, indicating that all items were contributing to the scale's variance, with no items being weakly correlated with the total. The mean inter-item correlation was $r = .41$, further substantiating the scale's internal consistency. Sample items on this scale included: *If I asked my partner to use a condom, he would get violent; Most of the time, we do what my partner wants to do; and I am more committed to our relationship than my partner is*.

However, the Decision Making Control subscale did not have adequate psychometric properties. KMO was .56, barely meeting the threshold for data appropriate for factor analysis. In addition, 3 factors emerged, suggesting that the scale was not measuring a unitary concept with this sample. Therefore, a total score was not computed and only the Relationship Control subscale is discussed. In fact, the Relationship Control Subscale (RCS), alone, has been used by other researchers investigating heterosexual AI (Koblin et al., 2008).

Data Analysis

For the first study, the primary research question was to identify risk factors for AI. Potential predictor variables included dichotomous risk factors (e.g., history of pregnancy, STI, abuse, and first intercourse at age ≤ 15 years. Bivariate analyses (chi-square tests) were initially conducted to identify significant risk factors for AI. A logistic regression that included all risk factors yielding significant association with AI was then conducted. The multivariate test permitted comparison of the magnitude of risk posed by these factors, and as these risk factors would be expected to overlap, the multivariate model would also identify the unique predictors of AI.

The second RCT examined the association between sexual relationship power as measured by score on the RCS of the Sexual Relationship Power Scale (SRPS) and AI. To test for linear and non-linear relationships, scores were broken into tertiles, which were based on where scores fell along the range of scores (1–4). Tertiles were created according to meaningful cut-points on the response scale, not according to equally sized distributions, so that the low relationship power subgroup was truly characterized by low scores on the scale (≤ 2.5). Chi-square analysis was then used to test the association between the power tertiles and AI.

Data for each RCT were analyzed separately because there was a fundamental difference between the two samples, which could potentially affect AI behaviors. The first sample was hormonally protected from pregnancy while the second sample was not.

Results

First RCT

In the first RCT, 85 young women (35% of the total sample) reported engaging in AI. Forty-seven percent of those who had engaged in AI had done so in the previous 2 months. Fifty-two young women reported AI with a main partner, 7 with a casual partner, and 3 with a new partner; 23 chose not to answer the query regarding the type of partner with whom they had engaged in AI. The reported age at first AI ranged from 12 to 21 ($M = 16.8$). Thirty-one percent of these

young women were Black and 69% were Latina; 73% (*n* = 62) were already using a hormonal method of contraception.

Fewer than one third (29.4%) of these young women reported using a condom during their last AI with their main partner. In this cohort of young women, there was a strong correlation between condom use during vaginal intercourse and during AI (*r* = .584, *p* < .01); slightly more than one third (35.9%) reported condom use at last vaginal intercourse with their main partner, and 29.4% reported condom use at last AI with their main partner. A test of significance of difference between proportions demonstrated that condom use during vaginal intercourse was significantly lower in the group of young women who had ever had AI than in the group who had not (*Z* = 2.26 [*p* = .012]).

We wanted to determine if the youth in our studies were hormonally protected from pregnancy when they engaged in AI, hypothesizing that if they were, they were likely not to be having AI to avoid pregnancy. We, therefore, asked questions about current use of a hormonal contraception method, and having had anal sex in the previous 2 months. We found that most of the young women (73%) who reported having had AI in the previous 2 months were hormonally protected from pregnancy but still reported having had AI in the previous 2 months, providing support for the hypothesis that pregnancy prevention was not the main motivation for AI in this sample.

The data were examined by ethnicity, as the literature has suggested ethnic differences in the rates of HAI (Laumann et al., 1994). A chi-square analysis, testing the association between ethnicity and AI, was significant (*p* = 01). Latinas were significantly overrepresented among those who reported engaging in AI (33%) compared to Black women (18%). However, there was no significant difference in condom use; 31% of Blacks and 30% of Latinas who had had AI reported using a condom at last AI with their main partner. Data for other partner types was not reported because there were too few cases to warrant analysis.

Young women who had ever had AI were significantly more likely to report a high-risk sexual history. They had been younger at first vaginal intercourse, were significantly less likely to have used a condom at last vaginal intercourse with their main partner, and were more likely to report a history of pregnancy, STIs, and abuse by a partner or by someone close to them (see Table 2).

A logistic regression was run in which the correlates of AI were entered as predictors of AI. A history of: (a) pregnancy, (b) abuse by a partner or by someone close, and (c) early age at first vaginal intercourse, dichotomized as younger (≤ age 15) and older (≥ age 16 or older), and (d) no condom use at last vaginal intercourse. All except pregnancy remained unique predictors of AI (see Table 3). History of pregnancy showed a trend toward significance at *p* = .06, but was dropped from the model.

Second RCT

Recruitment for the second RCT was similar to that of the first, as discussed, except for a requirement to be using or starting use of a hormonal method because we wanted to test the intervention with a broader cohort of young women. Twenty-three young women in the second RCT (23% of the total sample) reported ever engaging in AI, and they constituted the sample for the following discussion. Two were Black and 21 were Latina, a difference that was significant (*p* = .009). None reported using a condom during AI with their main partner. However, 9 (43%) reported using a condom at last vaginal intercourse with their main partner. Only condom use with main partner was examined, as there were too few women with other partner types to analyze. Eleven of these young women were using a hormonal method of contraception. Sixty-one percent (*n* = 14) reported having had AI in the previous 2 months.

Data were also examined by age to see whether age influenced history of AI. There was a significant correlation ($r = .34$, $p = .001$); older teens were significantly more likely to report having had AI than younger teens. However, there was no correlation between age (dichotomized as younger and older) and having had AI in the previous 2 months. Analysis also showed no correlation between age and RCS score ($p = .43$).

There was no correlation between RCS scores and history of AI. To explore the possibility of a non-linear relationship between RCS scores and AI, the RCS distribution was broken into tertiles representing distribution of scores on the response choices on RCS items, yielding low cell sizes for the low range of RCS scores ($n = 13$), moderate for the medium range ($n = 24$), and high for the high range ($n = 63$). Chi-square analysis revealed that 54% of the women with low scores had engaged in AI, as had 24% of those with high scores, while only 4% of those with mid-level scores had done so (see Table 4). Among Latinas, 78% with low scores had had AI, as had 33% of those with high scores and one in the middle tertile (chi-square = 13.955; $p = .001$). Chi-square analyses could not be run on Black teens because too few had engaged in AI.

Because the SRPS score was shown in one study to correlate with condom use during vaginal intercourse (Pulerwitz et al., 2002), a chi-square analysis was performed on these data, using RCS tertiles and the entire second RCT sample, not just those who had had AI, to see if the same outcome occurred. There was a significant association between RCS score and condom use during vaginal intercourse ($\chi^2 = 11.5$, $p = .003$) in the expected direction. Those with scores in the lowest tertile were least likely to use condoms during vaginal intercourse and those in the highest tertile were most likely to do so, even though, as noted above, no respondents who stated that they had engaged in AI reported using a condom during AI.

Discussion

HAI is a prevalent behavior in these samples of Black and Latina female adolescents. In the literature, HAI among youth has been discussed almost exclusively as a behavior that maintains vaginal virginity and/or as a form of birth control. From that framework, the prevalence of HAI in a hormonally protected, non-virginal sample is perplexing. Clearly, factors other than preserving vaginal virginity or preventing pregnancy likely are at work.

In addition, in the initial analysis of the data it became clear that young women who reported engaging in AI also reported a high-risk sexual history: younger at first vaginal intercourse, less likely to use a condom during vaginal intercourse, more likely to have had an STI, and more likely to have been abused by a partner or by someone close to them. This is of particular concern because these risk factors are associated with increased HIV infection rates (Beyrer, 2007). For that reason, we included the SRPS in the pre-intervention assessment for the second RCT to assess whether SRP had a role in AI among female adolescents, hypothesizing that young women with low SRPS scores would be more likely to engage in AI than those with middle-range or high SRPS scores. Although those with low scores on the RCS did indeed report higher levels of AI, the relationship between the RCS and AI was not linear, as it is with condom use during vaginal intercourse. However, these findings should be viewed with caution due to the small numbers, especially in the low and medium power categories. Research on sexual assertiveness in young women, a construct that is subsumed under relationship power, has generally focused on a woman's right to refuse vaginal intercourse or to insist on using protection during vaginal intercourse for pregnancy and/or STI prevention. One study of adolescent and young adult women found that 20% believed that they never have the right to make decisions about contraception or to refuse intercourse without birth control (Rickert, Sanghvi, & Wiemann, 2002). Other researchers have found that fear of negative reactions from

their partners was an important factor in young women's inability to refuse intercourse or to engage in pregnancy and STI prevention (Morokoff et al., 1997).

However, the social-psychological context of partner interactions around refusing AI and using condoms during AI may be quite different than that for vaginal intercourse. More research is needed in order to understand that relationship.

Furthermore, young women were less likely to use condoms during anal than during vaginal intercourse. The data do not allow us to analyze the reasons for this. It is possible that in these samples, condom use in general was primarily for disease, rather than for pregnancy, prevention. Clearly, condom use during AI is exclusively for disease prevention. In the first sample, most of the young women were hormonally protected from pregnancy, yet they were more likely to use condoms during vaginal than during anal intercourse. In the second sample, none of the young women used condoms during AI, but 43% of those who had had AI used condoms during vaginal intercourse. Additional possible explanations for these findings include the following. (a) A lack of awareness of the disease risk inherent in AI. Indeed, condom use is lower during HAI than during AI among MSM. Some researchers believe that this is due to a lack of awareness of the HIV risk associated with HAI (Houston, Fang, Husman, & Peralta, 2007). (b) Some young people may not consider anal sex to be sex. In a study of a national sample of undergraduate students, respondents were asked about the behaviors they considered to be *having sex*. In response to the question, *Would you say you "had sex" with someone if the most intimate behavior you engaged in was penile-anal intercourse [penis in anus (rectum)]?*, almost 1 in 5 (19%) responded in the negative. If their perception is that AI is not sex, they may also perceive that there is no need for a condom (Sanders & Reinisch, 1999). (c) No literature could be found that discussed HAI as a feature of HIV-prevention education for teens. Consequently, it is possible that young women may not consider it to be a normative behavior. Therefore, they may feel that their typical notions of risk reduction do not apply, or that they apply in a different, as-yet-undetermined, way. The explanation may lie in a combination of these factors and/or perhaps in others yet to be elucidated.

Age was also examined as a possible predictor of AI. A significant correlation was found between older age and history of AI. However, that may simply be explained by the fact that older teens may have been sexually active for a longer period of time, and that they, therefore, may have had more sexual experiences. This supposition is supported by a recent study based on a national data set that found the more time that had elapsed after first vaginal sex, the more likely a teen was to have had AI (Lindberg et al., 2008). There was, however, no correlation in our study between age and having had AI in the previous 2 months, which suggests that older teens were not having AI more frequently than younger teens or vice versa.

Culture and ethnicity have been implicated as factors in HAI. Indeed, research suggests that HAI appears to be especially prevalent in certain populations, including Latin Americans (Laumann et al., 1994; Voeller, 1991). Yet while the rate of HAI was significantly higher among the Latina adolescents in both studies, a substantial number of Black teens in the first RCT had also engaged in it. Furthermore, the role of ethnicity appears to be variable. One recent study found that Black adolescents were significantly less likely than White adolescents to report having engaged in AI (Lindberg et al., 2008); although other researchers have found a lower rate of AI for White women than for Black women (Gorbach et al., 2009). Other studies found equivalent proportions (22%) of Latina and Black women ages 15–44 years reported ever having engaged in AI (Leichliter, Chandra, Liddon, Fenton, & Aral, 2007).

Given the high HIV-transmission risk associated with AI, the indication of a poor perception of its risk (suggested by low rates of condom use), and the suggestion that SRP may mean something different in the context of HAI and condom use during vaginal intercourse, it is

clear that further study, both quantitative and qualitative, is needed to contextualize HAI among adolescents. Among factors important to examine would be young women's perceptions of STI/HIV, their attitudes about AI (e.g., pleasurable, desired, dirty, coerced), cultural factors, relationship factors in addition to SRP, and young men's perceptions about HAI and the level of SRP. The role of SRP should also be further explicated. The results here suggest an urgent need to teach young women about the risks of unprotected HAI. Failure to mention it may, by omission, suggest that it is safe or may be providing another message about it that is, at the moment, unclear.

These findings have important clinical implications for nurses. Clearly young women need to know that AI confers a risk for HIV transmission, and that condom use for HAI is as important as it is for vaginal intercourse. The role of relationship power is more ambiguous. While the findings related to RCS scores and HAI need confirmation from other studies, we can only speculate about what they may mean. They may suggest that the phenomenon of HAI could have at least two different patterns, which require two types of patient education. HAI by young women with low power may result from some form of coercion, while HAI by young women with high power may reflect a desire by teens with high relationship control to voluntarily please a partner. Indeed, a recently published qualitative study with adult women reported that reasons women engage in AI include pleasing their partner and enhancing emotional intimacy with a special partner (Maynard, Caraballo-Dieguez, Ventuneac, Exner, & Mayer, 2009). Therefore, patient education for girls with low power may first need to address self-esteem and empowerment; while young women with high power may benefit from information about HAI and disease transmission risk and risk reduction. Clearly, more research is needed to guide intervention development.

Limitations

This study is limited by a number of factors. First, the population studied was Black and Latina urban teens who were attending a clinic for reproductive health care. Therefore, the results may not be generalizable to other populations, including to young women who do not seek reproductive health care. In addition, the number of teens in Study 2 who had engaged in AI was small. Furthermore, the study is based on self-reported data, which may be subject to recall and social desirability biases, even with the use of ACASI, especially given the sensitive nature of AI. Moreover, we did not ask about frequency of AI. In addition, some young women chose not to answer some questions, resulting in missing data.

Another limitation is that we do not have data on several relevant factors. First, we did not ask about the age of the teens' partners. There are data indicating that an age differential between partners can result in younger women engaging in risky behaviors due to less power, or an inability to negotiate safer behaviors with an older partner (Bralock & Koniak-Griffin, 2009). Because we do not have data on the partner's age, we cannot say whether an age differential affected the relationship between relationship power and HAI. However, the relationship between RCS score and condom use during vaginal intercourse was in the expected direction, suggesting that if an age discrepancy between partners affected relationship power for HAI, it did not seem to affect relationship power for condom use for vaginal intercourse. Sexual relationship power appears to have a complex and variable influence on sexual risk behaviors and the role, if any, of age discrepancy between partners is yet to be delineated. Further, there are no data on other psychosocial characteristics such as drug use or school dropout, which may affect HAI.

Conclusions

This study suggests that unprotected AI is prevalent among urban Black and Latina adolescent women, and that the level of sexual relationship power may affect its likelihood in this

population. AI may well be contributing to the HIV epidemic in women of color, but as of this writing, it is receiving little attention from nurses and others whose role is to teach young people how to reduce their risk for HIV. Furthermore, young women who engage in AI appear to be a population with a cluster of additional HIV risk factors. When taking a sexual history, nurses should ask all women about AI and educate them about the risks of AI. While all young women need this information, nurses should be aware that those who have other risk factors, such as early age at first intercourse, are particularly likely to engage in AI.

This study also raises questions about the reasons for the low level of condom use during AI, low level of condom use during vaginal intercourse by women who engage in AI, and how best to design effective risk reduction strategies with this population. Yet there is scant research on the prevalence and context of adolescent HAI, nor has there been research to guide nurses on how to effectively communicate with teens about risk-reduction related to HAI.

Moreover, this is the first study to examine the association between sexual relationship power and HAI in adolescents. Further research is needed to delineate the role of sexual relationship power in HAI in order to plan targeted educational campaigns. Clearly, public health campaigns are also urgently needed to educate young women about the importance of condom use during AI. This is potentially lifesaving information. Our failure to inform young women about the risks of HAI, may lead them to believe that it does not pose a health risk. Women must have accurate information about HAI risks.

> **Clinical Considerations**
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> - Young women engage in receptive anal intercourse (AI) in higher numbers than commonly acknowledged.
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> - Young women use condoms less often for AI than for vaginal intercourse.
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> - Young women may not realize that AI is a risk-behavior for HIV.
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> - Nurses must educate young women about the risks associated with AI and the need for their partners to use condoms during AI.

Acknowledgments

References

Beyrer, C. HIV epidemiology update and transmission factors: Risks and risk contexts. Clinical Infectious Diseases; 16th international AIDS conference epidemiology plenary; 2007. p. 981-987.doi: 10.1086/512371

Blanc AK. The effect of power in sexual relationships on sexual and reproductive health: An examination of the evidence. Studies in Family Planning 2001;32(3):189–213. [PubMed: 11677692]

Boekeloo BO, Howard DE. Oral sexual experience among young adolescents receiving general health examinations. American Journal of Health Behavior 2002;26(4):306–314. [PubMed: 12081363]

Bralock A, Koniak-Griffin D. What do sexually active adolescent females say about relationship issues? Journal of Pediatric Nursing 2009;24(2):131–140. doi:10.1016/j.pedn.2008.02.036. [PubMed: 19268234]

Centers for Disease Control and Prevention. HIV/AIDS surveillance in adolescents and young adults (through 2006). 2008. Retrieved from http://www.cdc.gov/hiv/topics/surveillance/resources/slides/adolescents/index.htm

Centers for Disease Control and Prevention. Cases of HIV Infection and AIDS in the United States and Dependent Areas, 2007. 2009. Retrieved from http://www.cdc.gov/hiv/topics/surveillance/resources/reports/2007report/default.htm

Flannery D, Ellingson L, Votaw KS, Schaefer EA. Anal intercourse and sexual risk factors among college women, 1993–2000. American Journal of Health Behavior 2003;27(3):228. [PubMed: 12751619]

Gorbach PM, Manhart LE, Hess KL, Stoner BP, Martin DH, Holmes KK. Anal intercourse among young heterosexuals in 3 sexually transmitted disease clinics in the United States. Sexually Transmitted Diseases 2009;36:193–198. doi: 10.1097/OLQ.0b013e3181901ccf. [PubMed: 19265740]

Halperin DT. Heterosexual anal intercourse: Prevalence, cultural factors, and HIV infection and other health risks, part I. AIDS Patient Care and STDs 1999;13(12):717–730. doi:10.1089/apc.1999.13.717. [PubMed: 10743535]

Halpern-Felsher B. Oral sexual behavior: Harm reduction or gateway behavior? Journal of Adolescent Health 2008;43(3):207–208. doi:10.1016/j.jadohealth.2008.07.001. [PubMed: 18710673]

Houston AM, Fang J, Husman C, Peralta L. More than just vaginal intercourse: Anal intercourse and condom use patterns in the context of "main" and "casual" sexual relationships among urban minority adolescent females. Journal of Pediatric and Adolescent Gynecology 2007;20(5):299–304. doi: 10.1016/j.jpag.2007.01.006. [PubMed: 17868897]

Jaffe LR, Seehaus M, Wagner C, Leadbeater BJ. Anal intercourse and knowledge of acquired immunodeficiency syndrome among minority-group female adolescents. The Journal of Pediatrics 1988;112(6):1005–1007. doi:10.1016/S0022-3476(88)80237-3. [PubMed: 3373379]

Kamb ML, Fishbein M, Douglas JM Jr, Rhodes F, Rogers J, Bolan G, Peterman TA. Efficacy of risk-reduction counseling to prevent human immunodeficiency virus and sexually transmitted diseases: A randomized controlled trial. Journal of the American Medical Association 1998;280(13):1161–1167. [PubMed: 9777816]

Karim SS, Ramjee G. Anal sex and HIV transmission in women [Letter to the Editor]. American Journal of Public Health 1998;88(8):1265–1266. [PubMed: 9702169]

Koblin BA, Hoover DR, Xu G, Frye V, Latka MH, Lucy D, Bonner S. Correlates of anal intercourse vary by partner type among substance-using women: Baseline data from the UNITY study. (epub July 25, 2008). Retrieved from http://www.springerlink.com/content/0q0765n11kx84547/fulltext.pdf.

Krauss, B.; Godfrey, C.; O'Day, J. Now I can learn about HIV – effects of a parent training on children's practical HIV knowledge and HIV worries: A randomized trial in an HIV-affected neighborhood; 14th International Conference on AIDS; 2002. (abstract no. WePeD6344)

Krauss BJ, Goldsamt L, Bula E, Godfrey C, Yee DS, Palij M. Pretest assessment as a component of safer sex intervention: A pilot study of brief one-session interventions for women partners of male injection drug users in New York City. Journal of Urban Health: Bulletin of the New York Academy of Medicine 2000;77(3):383–395. [PubMed: 10976612]

Laumann, EO.; Gagnon, JH.; Michael, RT. The social organization of sexuality sexual practices in the United States. Chicago: The University of Chicago Press; 1994.

Leichliter JS, Chandra A, Liddon N, Fenton KA, Aral SO. Prevalence and correlates of heterosexual anal and oral sex in adolescents and adults in the United States. Journal of Infectious Diseases 2007;196:1852–1859. doi:10.1086/522867. [PubMed: 18190267]

Lescano CM, Houck CD, Brown LK, Doherty GD, DiClemente RD, Fernandez Il, Silver B. Correlates of heterosexual anal intercourse among at-risk adolescents and young adults. American Journal of Public Health 2009;99:1131–1136. doi:10.2105/AJPH.2007.123752. [PubMed: 19008522]

Lindberg LD, Jones R, Santelli JS. Noncoital sexual activities among adolescents. Journal of Adolescent Health 2008;43(3):231–238. doi:10.1016/j.jadohealth.2007.12.010. [PubMed: 18710677]

Macalino GE, Celentano DD, Latkin C, Strathdee SA, Vlahov D. Risk behaviors by audio computer-assisted self-interviews among HIV-seropositive and HIV-seronegative injection drug users. AIDS Education and Prevention: Official Publication of the International Society for AIDS Education 2002;14(5):367–378. **doi:** 10.1521/aeap.14.6.367.24075. [PubMed: 12413183]

Maynard E, Carballo-Dieguez A, Ventuneac A, Exner T, Mayer K. Women's experiences with anal sex: Motivations and implications for STD prevention. Perspectives on Sexual and Reproductive Health 2009;41:142–149. doi:10.1363/4114209. [PubMed: 19740231]

Morokoff PJ, Quina K, Harlow LL, Whitmire L, Grimley DM, Gibson PR. Sexual assertiveness scale (SAS) for women: Development and validation. Journal of Personality and Social Psychology 1997;73(4):790–804. [PubMed: 9325594]

Pulerwitz J, Amaro H, De Jong W, Gortmaker SL, Rudd R. Relationship power, condom use and HIV risk among women in the USA. AIDS CARE 2002;14(6):789–800. [PubMed: 12511212]

Pulerwitz J, Gortmaker SL, DeJong W. Measuring sexual relationship power in HIV/STD research. Sex Roles 2000;42:637–660. doi: 10.1080/0954012021000031868.

Quina K, Harlow LL, Morokoff PJ, Burkholder G, Deiter PJ. Sexual communication in relationships: When words speak louder than actions. Sex Roles 2000;42(7/8):523–549. doi: 10.1023/A: 1007043205155.

Rickert VI, Sanghvi R, Wiemann CM. Is lack of sexual assertiveness among adolescent and young adult women a cause for concern? Perspectives on Sexual and Reproductive Health 2002;34(4):178–183. [PubMed: 12214907]

Royce RA, Seña A, Cates W Jr, Cohen MS. Sexual transmission of HIV. The New England Journal of Medicine 1997;336(15):1072–1078. [PubMed: 9091805]

Roye, C.; Silverman, P.; Krauss, B. Prevalence and correlates of heterosexual anal sex in teens; National Association of Pediatric Nurse Practitioners Annual Meeting; Washington, DC. 2006 Mar 30.

Roye C, Silverman PP, Krauss B. A brief, low-cost, theory-based intervention to promote dual method use by black and Latina female adolescents: A randomized clinical trial. Health Education & Behavior: The Official Publication of the Society for Public Health Education 2007;34(4):608–621. doi:10.1177/1090198105284840.

Sanders SA, Reinisch JM. Would you say you "had sex" if…? Journal of the American Medical Association 1999;281(3):275–277. [PubMed: 9918484]

Tschann JM, Adler NE, Millstein SG, Gurvey JE, Ellen JM. Relative power between sexual partners and condom use among adolescents. The Journal of Adolescent Health 2002;31:17–25. doi:10.1016/S1054-139X(01)00418-9. [PubMed: 12090961]

Voeller B. AIDS and heterosexual anal intercourse. Archives of Sexual Behavior 1991;20:233–276. doi: 10.1007/BF01541846. [PubMed: 2059146]

Yoder JD, Kahn AS. Toward a feminist understanding of women and power. Psychology of Women Quarterly 1992;16:381–388. doi:10.1111/j.1471-6402.1992.tb00263.x.

Table 1

Frequencies of Key Behavioral Variables

	Ever had oral sex (performed on girl) N (%)	Ever had oral sex (girl performs) N (%)	Ever had anal sex N (%)	Used birth control pills N (%)	Used Depo-Provera N (%)	Abused by partner or someone close N (%)	Ever been pregnant N (%)	Had an STI N (%)
First RCT (N = 244)	219 (90%)	190 (78%)	85 (35%)	89 (36%)	49 (20%)	47 (19%)	114 (47%)	62 (25%)
Second RCT (N = 101)	91 (90%)	70 (70%)	23 (23%)	24 (24%)	6 (6%)	17 (17%)	30 (30%)	17 (17%)

Note. STI = sexually transmitted infection; RCT = randomized clinical trial

Table 2

Predictors of Anal Intercourse

		Ever had AI	% having AI if "Yes"	% having AI if "No"
Ever been pregnant	Chi-square	12.8	47%	25%
	Sig. (2-tailed)	$p < .001$		
Had an STI	Chi-square	.8.4		
	Sig. (2-tailed)	$p = .005$	50%	30%
Abused by partner or someone close	Chi-square	8.6	53%	31%
	Sig. (2-tailed)	$p = .006$		
Young age (≤ 15 years) at first vaginal sex	Chi-square	12.9	61%	24%
	Sig. (2-tailed)	$p < .001$		
Use male condom during vaginal sex with main partner	Chi-square	.6.0	27%	43%
	Sig. (2-tailed)	$p < .001$		

Note. AI = anal intercourse; STI = sexually transmitted infection

Table 3

Logistic Regression Assessing Predictors of Anal Intercourse

UNIQUE PREDICTORS OF AI	O.R.	Significance
Abused by partner or someone close	2.0	.05
Young age at first vaginal intercourse	2.2	.02
No condom use at last vaginal intercourse	2.1	.04
History of STI	2.1	.03

Note. AI = anal intercourse; STI = sexually transmitted infection

Table 4

Anal Intercourse and Score on RCS

	High Score (*n* = 63)	Medium Score (*n* = 24)	Low Score (*n* = 13)
EVER HAD AI			
Yes	24%	4%	54%
No	76%	96%	46%

Note. AI = anal intercourse