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A Qualitative Study of Rural Black Adolescents' Perspectives on Primary STD Prevention Strategies

Aletha Y. Akers,

Assistant professor, Department of Obstetrics, Gynecology and Reproductive Sciences;, University of Pittsburgh

Melanie A. Gold,

Staff physician, Student Health Services, University of Pittsburgh

Tamera Coyne-Beasley, and

Associate professor, Departments of Internal Medicine and Pediatrics;, University of North Carolina at Chapel Hill

Giselle Corbie-Smith

Associate professor, Departments of Internal Medicine and Social Medicine, and director, Program on Health Disparities, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill

Abstract

CONTEXT—Primary STD prevention relies on five key strategies: practicing abstinence, choosing low-risk partners, discussing partners' sexual history, using condoms consistently and not having multiple partners. Few studies have examined all of these strategies simultaneously, and few have focused on rural black adolescents, whose rates of early sexual initiation and STDs are among the highest in the nation.

METHODS—In 2006, a sample of 37 black adolescents (20 female, 17 male) from two rural North Carolina counties participated in focus groups that explored their understanding of how primary prevention strategies reduce STD transmission, the common barriers they encounter in trying to adopt these strategies and the risk reduction strategies that they employ. Transcripts were analyzed using a grounded theory approach.

RESULTS—Adolescents understood how primary prevention strategies reduce STD transmission. However, they perceived sex as normal and abstinence as unlikely during adolescence. Furthermore, they considered the remaining primary prevention strategies difficult to implement because these strategies depend on partner cooperation and incorrectly assume that STD prevention is paramount when adolescents make sexual decisions. Adolescents reported using alternative strategies to reduce their STD risk; the most commonly used approaches were indirect assessments of partner characteristics (e.g., evaluating their physical appearance and sexual history) and STD testing (to identify and treat infections).

Author contact: aakers@mail.magee.edu.

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CONCLUSION—Adolescents try to reduce their STD risk, but do so by using ineffective practices. Promoting primary prevention strategies requires helping adolescents to identify opportunities to successfully employ these strategies.

Nineteen million new viral and bacterial STDs are diagnosed each year in the United States.[1] Half occur in men and women aged 15–24,[1] who represent only 14% of the population.[2] Although adolescents are generally knowledgeable about STD transmission and prevention strategies, they often fail to translate their knowledge into consistent risk reduction behaviors.[3] This is unfortunate, given the substantial economic, social and medical effects of STDs on adolescents. At the societal level, the economic impact is staggering: The annual cost of diagnosing, treating and managing the long-term sequelae of STDs among adolescents is estimated to be $6.5 billion.[4]

Five primary prevention strategies (steps to prevent infection) form the core of STD counseling and prevention services.[5] These strategies are practicing abstinence, choosing low-risk sexual partners, discussing sexual history with new partners, using condoms consistently and avoiding having multiple partners (whether at the same time or consecutively). Unfortunately, evidence indicates that adolescents have difficulty practicing these approaches consistently.[6–8]

A major limitation of the literature is that the majority of studies have examined these primary STD prevention strategies individually, in most cases focusing on condom use or abstinence;[6,7,9] few have explored adolescent adoption of the entire set of prevention strategies.[8] Similarly, STD behavioral counseling interventions that target adolescents have focused almost exclusively on condom use.[10,11] Yet, an individual’s ability to implement each primary prevention strategy relies on different, though sometimes overlapping, competencies. For example, discussing sexual history with a partner requires the confidence to ask a partner about his or her sexual past, while using condoms consistently requires both the confidence to raise the subject and the skills to negotiate use with a potentially unwilling partner. Because primary STD prevention strategies, when used concurrently, work in tandem to reduce STD risk, promoting the adoption of multiple safer-sex behaviors is likely to be more effective than focusing on just one. However, in reality, many people select and adopt only the strategies they believe are necessary in a given relationship or sexual situation.[12,13] Understanding adolescent perspectives about the entire set of primary prevention strategies, and identifying common challenges to the adoption of these strategies, can provide insight into how best to tailor messages that promote more uniform adoption of effective behavioral approaches.

In this study, our goals were to explore rural black adolescents’ comprehension of the mechanisms by which primary STD prevention strategies reduce transmission risk, to describe common barriers to adolescents’ adoption of the five core primary prevention strategies and to identify risk reduction strategies that adolescents employ. Our first goal, assessing comprehension, was important given recent shifts in knowledge about adolescents’ cognitive capacity to comprehend STD risk and make rational sexual risk behavior decisions. Many older studies (those from more than a decade ago) have argued that adolescent sexual risk behaviors are due to young people’s inability to accurately assess

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their infection risk.[14] More recent scholarship demonstrates that adolescent sexual behaviors, particularly during middle and late adolescence, reflect an understanding of STD risk that is deeper, more cognitively complex and more congruent with adult sexual decision-making processes than previously thought.[14] Thus, before examining barriers to adoption of primary prevention strategies, we felt it was essential to assess adolescents' conceptions about the utility of these approaches.

We conducted our study in a rural community because rural adolescents have been understudied in STD research, despite evidence that they may initiate sexual intercourse earlier and have higher rates of STDs and pregnancy than their urban peers.[3,15–17] We focused on black adolescents because they report initiating sexual intercourse at earlier ages[18] and have higher rates of STDs than their counterparts from other ethnic groups, regardless of geographic setting.[1,19,20]

Finally, although we recognize that primary prevention strategies are the most effective methods for preventing STD acquisition, we felt that gaining a greater understanding of the other approaches adolescents employ would provide important contextual information for subsequent risk counseling and educational interventions.

METHODS

In April 2006, we conducted four focus groups with black adolescents from two contiguous rural counties in North Carolina. We used focus groups as our primary method of data collection because this approach encourages information exchange and a continual assessment of group norms, values and attitudes.[21–23] The study was approved by the institutional review boards at the University of North Carolina at Chapel Hill and the University of Pittsburgh.

The counties in the study are in the northeastern part of the state. Nash County has 94,000 residents, 37% of whom are black; Edgecombe County has 53,000 residents, of whom 57% are black.[24] These counties have the highest rates of HIV and other STDs in the state; 85% of all new HIV cases are diagnosed among black residents.[25,26] In Nash County, gonorrhea and chlamydia rates are higher among 13–19-year-olds than among other age-groups;[27] comparable data are not available for Edgecombe County. We examined these counties simultaneously because blacks in these counties largely function socially as one community, as a result of geographic proximity and a shared social and economic history.

We recruited English-speaking black adolescents aged 15–17. Sexual experience was not an eligibility requirement. To recruit participants, we partnered with a community-based organization that provides educational, social, health, cultural and political programs to black residents in both counties. Flyers were posted at the organization's headquarters and mailed to adolescents who were current or former participants in its youth-oriented programs. In addition, announcements were made and flyers posted at programs aimed at youth or at adults who had children in the target age range. Recruitment materials stated that we were conducting research to understand where adolescents learn about STDs and how they avoid getting them. Interested adolescents or their parents called to schedule

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participation in a focus group session; parents of interested adolescents provided written informed consent, and the adolescents provided written informed assent.

At the beginning of each focus group, participants reported their age and their reproductive and sexual history using a brief, anonymous, self-administered pen-and-paper questionnaire. Reproductive and sexual history items included age at menarche, history of contraceptive and condom use, history of pregnancy involvement, number of children, age at sexual debut, lifetime number of sexual partners and history of STD diagnosis. We did not ask whether respondents had ever been tested for an STD; in addition, because the focus group questions were designed to inquire about social norms, we did not inquire about participants' relationship status.

Focus groups were conducted in a private conference room at our partner organization. We conducted two groups with males and two with females; each group contained 7–10 participants and lasted approximately two hours. Participants were provided a meal and a $20 cash incentive. The discussions were moderated by a professional qualitative research company that specializes in working with adolescents and ethnic minority communities. Moderators were matched to the race and gender of group participants. At each discussion, one of two female graduate student research assistants (one black, one white) took notes. The assistant for the male focus groups sat outside the room and listened through a monitor, as we did not want the discordance between her race and gender and those of the participants to discourage honest discussion; the adolescents were informed about her presence and activities at the beginning of the discussion.

Because group discussions can be intimidating to adolescents, we took several steps to reduce embarrassment and facilitate participation.[28] We started each discussion with a warm-up exercise designed to engender familiarity among participants (e.g., asking them to name their favorite music artist). Throughout the discussions, we asked participants to talk about "people their age," rather than about themselves; this approach also served our goal of exploring local social norms.

After the warm-up, we asked a few general questions about sexual behaviors and attitudes that were designed to be nonthreatening (e.g., "Where do people your age learn about sex and relationships?" "What things about sex or relationships do you think are important for teens to know but are not taught?"). We then transitioned to discussing STDs by asking, "Do teens worry about getting STDs?"

As the discussion about STDs began, we introduced a series of facilitated activities that allowed participants to express themselves.[29–31] First, we explored adolescent approaches to prevention by asking participants to independently and anonymously write a list of "things people your age do to keep from getting an STD." By soliciting anonymous answers, we were able to obtain suggestions that were not influenced by the group discussion. During a brief break, the note-taker reviewed the lists and generated a master list that excluded duplicate items. As we anticipated, all five primary prevention strategies were mentioned during this exercise.

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The second facilitated activity involved small group discussions about two case vignettes (see boxes). The vignettes had been written by study staff and revised on the basis of feedback from three adolescents. Two versions of each vignette were developed, one with a male protagonist and one with a female, allowing us to match the main character's gender with that of focus group participants. After reading each vignette to the group, we used structured probes to explore participants' knowledge, beliefs and perceptions regarding the utility of and barriers to using each primary STD prevention strategy. The probes did not explicitly define and ask about the five strategies, but rather approached them in a subtle fashion. For example, moderators inquired about young men's knowledge of partner behaviors that increase STD risk by asking, "What types of things might a girl do that put her at risk for having an STD or HIV?"

In the next facilitated activity, we asked participants to view a magazine photo of two teenagers, one male and one female. They were asked to create a story that described the scene's probable setting, the degree to which the adolescents knew one another, the likelihood that they had engaged in sexual behaviors and the probability that one or both had an STD.

For the final activity, the moderator read the list of items that participants had generated earlier regarding ways in which teenagers prevent STD exposure. The moderator asked the group members their perceptions of how often teenagers use each strategy, as well as the rationale behind and potential limitations of each strategy.

Analysis

We used STATA 9.0 to perform descriptive analysis of demographic, sexual and reproductive data from the questionnaire. We calculated frequencies for categorical variables, and means or medians for continuous variables.

All focus group discussions were recorded and transcribed. To identify and organize participants' perspectives regarding our major topics of interest, we used the methodological approach to content analysis and the constant comparison method described by Glaser and Corbin.[32] This coding process involved three steps. First, two coders independently reviewed the transcripts line-by-line to identify themes related to the mechanisms by which primary prevention strategies reduce STD risk, the barriers to adolescents' adoption of each strategy and the strategies that adolescents employ to reduce their STD risk. This open coding process resulted in a list of words, phrases and passages related to each of these three topics. The coders then met to compare coded passages and reach consensus that all relevant passages had been identified. This process, known as investigator corroboration, ensures consistency, reliability and validity of the identified passages and reduces subsequent interpretive bias.[21,22] The entire study team then reviewed relevant passages to identify emergent themes (a process called axial coding). These themes were defined and organized into hierarchical categories in a codebook. The coders then independently recoded each transcript using this codebook to reidentify thematic occurrences and situate them within their original narrative context. The study team reviewed these recoded transcripts to determine whether additional interpretive insights were possible. We compared emergent

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themes across individual focus groups and by gender; unless stated otherwise, the themes did not differ by group or gender.

RESULTS

Sample Characteristics

Thirty-seven adolescents participated: 20 females and 17 males. Participants' mean age was 15.7 years. Two-thirds had initiated sexual intercourse; their mean age at first sex was 13.8 years. The median lifetime number of sexual partners among sexually experienced participants was two (range, 1–50); on average, these respondents had had 1.3 sexual partners in the past three months. Eighty-five percent of sexually experienced females reported having used birth control, and 60% of sexually active adolescents reported having ever used condoms; the proportion reporting experience with condoms was higher among males than among females (100% vs. 23%; $p<0.001$). Among females, the mean age at menarche was 12.1 years. Five young women had been pregnant or had children; no young men reported pregnancy involvement. None of the participants had ever received an STD diagnosis; 33% had had sex education in school.

Comprehension of Primary Prevention

Participants generally were familiar with the five STD primary prevention strategies and understood the rationale for each. When asked how to avoid STDs, both male and female adolescents commonly mentioned all of the primary prevention strategies. For example, in one male focus group, the moderator asked, "What can you do to avoid getting an STD?" Participants' immediate responses included "Abstinence," "Protect yourself," "Don't mess with any and everybody" and "Just mess with one girl."

Adolescents' ability to provide these answers reflexively could indicate that they were parroting safer-sex messages they had heard at home, in school, or in clinical or other settings. However, further probing revealed that participants had a fairly sophisticated understanding of some of the epidemiologic factors that mediate STD transmission. For instance, reflecting her understanding of how social networks affect STD risk, one female adolescent said, "When you sleep with one person, you sleeping with everybody they've been with." Another added, "Everybody they been with, and everybody *they* been with, and everybody *they* been with. If you slept with more than a few people, you done slept with half the world."

In addition, participants had a firm understanding of the ways in which each primary prevention strategy reduces one's STD risk. For example, abstinence from oral, anal and vaginal sex was universally cited as the best way to prevent exposure to infection. Male adolescents discussed how various coital acts conferred different levels of exposure risk. Referring to anal sex, one male said, "If a dude getting it from a stink hole, it's higher risk." However, their risk perceptions were not always accurate. For example, in one male focus group, participants agreed that oral, anal and vaginal sex all carried a risk of STD transmission, but opinions varied about the relative risk of each. One participant said, "I believe that oral sex is worse than [vaginal] sex," while another said, "I think it's about the

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same." Females discussed the different coital acts, but not the relative STD transmission risk associated with each.

Members of both sexes articulated the need to avoid partners who have a high likelihood of having been exposed to or infected with an STD—people who have had many sexual partners, who have multiple partners within a short period of time, whose social network comprises high-risk individuals or who have had an STD. Representative comments from female participants included the following: "I ain't messing with that boy, because so-and-so been with him, and so-and-so been with him; I mean, he nasty" and "If he [is] like the dude they call the neighborhood pimp … you gonna worry about getting [an STD]." Similarly, male participants stated, "Some girls hang around people that you know they got AIDS" and "If she got a bad reputation anyway, why would you be messing with her anyway?"

Adolescents accurately described how having multiple sex partners, or having a partner with multiple partners, could result in STD transmission. One male explained that a person's other sex partners might have an infection that could be passed to him: "You don't know what the other person who's banging her has got." Remarks by a female also explained how STDs could be passed among individuals sharing a sex partner: "If you mess with a girl, and a lot of dudes messing with her, and you gonna go and mess with her, … even though the other dude didn't get no STD, that don't mean you can't get one." This comment also displays the participant's knowledge that transmission risk is probabilistic, such that an infection may not occur among all members of a sexual network. Having a casual sexual encounter while in the midst of a steady sexual relationship with another partner—a commonly discussed form of concurrency—also was described as risky. As one adolescent male said, "That one time someone might have something. … You get it from her, and then you pass it on to your girl."

Finally, condom use was almost universally described as lowering the risk of STD transmission. For example, one female said that people "don't have to worry [about getting an STD] if they use protection." Similarly, a male remarked, "If you really want to avoid STD/HIV, always have a condom." Despite almost universal agreement regarding the value of condom use, some participants had misconceptions. For example, one adolescent male suggested that using two condoms simultaneously was more effective than using just one.

Barriers to Adopting Strategies

Three major themes emerged regarding barriers to adoption of the five primary prevention strategies. First, adolescents universally perceived sexual initiation during adolescence as normative; by contrast, they described abstinence as unrealistic and, in some cases, both unwanted and indicative of deviant social development. Second, they reported that the remaining primary prevention strategies were difficult to implement consistently and effectively because they depend on partner compliance. Third, participants questioned the assumption—inherent in primary prevention strategies—that STD prevention is a primary consideration when adolescents make sexual decisions.

Sexual norms—Although participants understood that abstinence is the most effective way to prevent STDs, they universally agreed that sex during adolescence is common,

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developmentally appropriate and socially expected. Adolescent females said that abstinent teenagers might "feel left out" and even be taunted by sexually active peers ("Yeah, they be all [like], 'You a virgin!'"). Narratives by males corroborated these sentiments. In response to one participant's statement that abstinence is the best way to prevent STDs, another male commented, "It's a good thing to do, but people ain't going to do it."

Partner compliance—Adolescents reported that the main problem with implementing primary STD prevention strategies is that these approaches rely on partner cooperation. During discussions of this idea, narratives about choosing low-risk partners and discussing sexual history with partners were intricately linked. Participants emphasized that choosing low-risk partners requires that prospective partners understand and divulge details about their risk status; they also remarked that such discussions require that partners be willing to disclose sensitive, potentially embarrassing information that might result in the end of a romantic relationship or the loss of a sexual opportunity. A female participant offered, "We know they ain't gonna tell the truth, but we ask just to see what they gonna say." Similarly, an adolescent male remarked about "the lies women tell, [like] 'I'm a virgin,' 'He's just a friend,' 'I don't suck dick.'" Another male added, "Everyone you talk to, that's what they say: 'I'm a virgin.'" Thus, many adolescents perceived the act of discussing sexual histories as theoretically important but limited in value by the low likelihood of sexual risk disclosure by partners.

Participants felt that consistent condom use is impractical because it requires partner cooperation. Moreover, they noted that those who rely on this approach must have the fortitude to forgo a sexual relationship when condom use cannot be successfully negotiated —an unrealistic scenario, participants believed, given that relationships are complex and provide benefits that an individual may not be willing to lose for lack of agreement over condom usage. For example, an adolescent female explained that young women might not negotiate condom use if their self-esteem is tied to being in a relationship and they "think they … got to have sex to have somebody love them."

Furthermore, adolescents' comments indicated that condom use is inversely associated with perceived relationship quality, which further limits consistent use. Participants remarked that the cessation of condom use often signifies high levels of trust and commitment in a relationship. A female adolescent said that when a couple feels "real committed to each other," they might not use a condom; they might, she suggested, say, "'We've been together for so long, and I want to do this for you, and maybe we don't have to use one.'" A male adolescent similarly remarked, "Sometimes you be like, 'She the one for me.' So, you ain't thinking about using no condom." Conversely, suggesting or insisting on condom use in relationships perceived to have a high level of commitment implies a lack of trust in one's partner or infidelity on the part of the person who brings up the subject, and could jeopardize the relationship, respondents reported.

Avoiding relationships with individuals who have concurrent partners also depends on partner compliance, as it requires mutual faithfulness. Yet, adolescents recognized that they have limited capacity to engender fidelity in their partners. One female remarked, "The girl [might] have only one boyfriend, but she don't know what the boy doing." An adolescent

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male echoed this illusion of mutual monogamy: "She might be doing something and not telling him about it."

Risks vs. benefits—Adolescents criticized traditional STD prevention strategies because of the underlying assumption that STD prevention is always a primary consideration when adolescents are deciding about a sexual encounter. Although participants understood the health risks and social stigma associated with having an STD, they considered some benefits of sexual interactions to outweigh concerns about STDs. For example, some believed that having sex with certain types of partners, including high-risk partners, might elevate their social standing among peers. Females described desirable high-risk partners as those with reputations for being "gangsters" (males involved in gangs) or "players" (individuals who have multiple concurrent partners or many short-term relationships), or who are popular (e.g., "jocks"). Responding to one of the vignettes, a female adolescent commented, "She thought because he was a football player, she'd get her props [proper respect] … [and that] it would make her more popular." For males, highly desirable females were those who easily consented to having sex, were popular or were physically attractive to other males. Both male and female adolescents recognized that such individuals were more likely than other prospective partners to have had multiple sexual partners and therefore were at higher risk of having an STD. However, the potential elevation in one's social status overshadowed concerns about getting an STD.

Anxiety over losing a romantic partner emerged as a particularly strong barrier to female adolescents' adoption of primary prevention strategies. One female participant explained that if a young woman has "seen [her] boyfriend, like, flirting with somebody else and she ain't had sex with him before, it make her want to go and do something." A small number feared that the mere suggestion of using condoms might result in physical dating violence. Others worried that attempts to negotiate condom use might encourage their partners to pursue concurrent sexual relationships to fulfill their sexual desires. Male adolescents were acutely aware of their female partners' anxiety over losing a relationship and mentioned using this fear to get their own way in their relationships: "'Round here, it's easy to seal a girl. … It's like this: Once you're in [her] head, it's easy to cheat on her. Some girls don't even care anymore. As long as they with you, they don't care what you do."

Male adolescents cited several additional benefits of sexual relationships. They reported, for example, that a male's social status among peers is linked to the number of sexual partners he has had. Thus, male participants generally agreed that sexual opportunities are to be capitalized on whenever they arise. Moreover, they believed that they could not refuse a sexual opportunity for fear of being labeled "scared" or "homosexual." The physical pleasure of sex also reportedly rivaled male adolescents' concerns about STD prevention; they described engaging in sex with a variety of women as an opportunity to have a range of physically pleasurable experiences. One explained, "Every girl is different."

Strategies Used to Reduce Risk

Adolescents reported using two main strategies to reduce their STD risk: indirect partner assessments and STD testing. Indirect partner assessments reflected a reliance on visual and

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verbal cues to determine a potential sex partner's likelihood of prior STD exposure. These assessments included asking prospective partners about their dating and sexual history (including the quality and duration of the relationships) and subjectively evaluating their responses, as well as their physical appearance, body language and reputation among peers. Adolescents understood that these assessments were inherently unreliable. One male stated, "Some people that look good ain't good." A female participant said, "You can't judge a book by its cover." However, adolescents indicated that using these approaches, particularly in combination, was pragmatic, given the difficulty of implementing primary prevention strategies.

The second major risk reduction strategy was STD testing. Participants did not believe that the act of testing actually conferred protection. Rather, it represented a tool for empowerment—a way for adolescents to circumvent the need for partner disclosure and to objectively check the accuracy of their assessment of their partners' risk status. Adolescents frequently mentioned seeking STD testing after a sexual encounter as a way to identify and treat a resulting infection. A male participant stated, "You heard about this girl. She might got it. And you gonna mess with her. That's really stupid on your part, but that'll make you go and get checked out."

Adolescents described a number of additional STD risk reduction strategies. Some of these approaches had the potential to cause physical harm (e.g., douching with vinegar). Some reflected misconceptions—for example, that engaging in oral rather than vaginal sex, or using birth control or withdrawal, eliminated STD risk. In either case, these strategies indicated that additional sexual health education is warranted for some youth. Other strategies raised concerns about whether adolescents are learning to develop unhealthy relationship patterns in an effort to reduce their STD risk. One female recommended monitoring one's partner—"Have somebody watching [him]." Several others suggested restricting partners' free time: "Keep 'em in the house."

DISCUSSION

In this study of rural black adolescents at high risk for STDs, participants perceived the five primary STD prevention strategies as unrealistic. Because they viewed initiation of sex during adolescence as normative, they did not consider abstinence a reasonable option. They discounted the remaining strategies because these approaches require partner cooperation and are founded on the incorrect assumption that STD prevention is always a primary consideration in adolescent relationships. They described alternative strategies that adolescents use to choose partners and reduce STD risk; although these alternatives are less effective than primary prevention strategies, they are much easier to implement, adolescents felt. These findings indicate that identifying pragmatic approaches for reducing STD risk is a primary developmental task for adolescents—that is, while they are going through the developmental processes of forming their sexual identity and cultivating their sexual negotiating capacity, they are also developing their own STD risk reduction strategies.

That not one of the primary prevention strategies was seen as feasible is cause for concern, given the central role these recommendations play in sex education programs and in clinical

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STD prevention counseling. Because the limited evidence available demonstrates that behavioral counseling interventions increase adolescents' adoption of safer-sex behaviors,[10,11] such counseling should not be abandoned. However, our findings suggest that prevention counseling must acknowledge the challenges in implementing primary prevention strategies and focus on increasing adolescents' motivations and capacity to implement these strategies. Interventions that assume adolescents are unaware of these strategies and their value waste precious resources. Moreover, programs should dispel myths or misconceptions about the "effectiveness" of alternative strategies.

Evaluations of interventions often use adolescents' adoption of primary prevention strategies as their primary measure of effectiveness. Our findings show that if interventions do not also address the social, interpersonal and structural challenges adolescents face when trying to adopt primary prevention strategies, they may erroneously be deemed ineffective. Although we focused on rural black adolescents, the consistency of our findings with those of studies that have examined individual primary prevention strategies strongly suggests that our results are relevant to broader adolescent populations.[6,7,9] Multilevel interventions that focus on changing behavioral norms within adolescent populations, clarifying misconceptions, and increasing access to condoms and STD testing for both male and female adolescents may be beneficial. In addition, policymakers, clinicians and educators need to consider the social realities of relationships, the power differentials (based on gender, age and economics) within relationships and the competing priorities that undermine safer-sex negotiations, and to reenvision primary prevention efforts so that they are more congruent with the challenges that individuals face in their sexual encounters.

The widespread skepticism among these relatively young adolescents regarding the likelihood that primary prevention strategies can be successfully implemented is a matter of concern. Traditionally, STD prevention interventions have targeted adolescents similar in age to our study population. That the social norms regarding primary prevention strategies were so well established among our participants suggests that prevention messages should begin in preadolescence and early adolescence, before youth have formed behavioral beliefs that discourage risk reduction behavior.

A number of important points must be considered in the interpretation of our results. Social desirability bias, a common limitation of focus group studies, may have reduced the range of responses from participants. Moreover, because participants were recruited primarily through adolescent-targeted programs at a community-based organization, they may not be representative of teenagers from the larger community, a possibility underscored by the low levels of STDs reported by participants. We focused on adolescents aged 15–17; different themes may have arisen had we included older or younger youth. Our results also may have differed had we used a less sexually experienced sample. However, the similarity of our findings to those of previous work, including studies that focused on youth from other settings and of other ages, suggests a certain universality and supports the validity of our results.[8,33] Finally, the fact that we did not ask participants about their own behavior could be seen as a limitation. However, while focus groups are not ideal for assessing individual behavior, they are a good tool for assessing normative behavior within a social group. Furthermore, many of the adolescents talked about their own behaviors, so our approach

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also yielded important data about individual behaviors and how prevailing social norms influenced them.

Conclusion

Primary STD prevention strategies' dependence on partner cooperation and their inherent assumption that STD risk reduction is the primary consideration in adolescent sexual decision-making limits their usage. Adolescents actively seek to reduce their STD risk, but do so by using alternative risk reduction approaches with limited effectiveness. Interventions should acknowledge adolescents' reliance on alternative strategies and help them identify opportunities to successfully employ more effective primary STD prevention strategies.

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