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Understanding HIV Testing Behaviors of Minority Adolescents: A Health Behavior Model Analysis

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Abstract

Adolescents and young adults are the fastest-growing age group of people living with HIV infection in the United States. Yet many adolescents and young adults with high-risk behaviors for HIV are unaware of their HIV status and have never had an HIV test. The purpose of our work was to understand minority adolescents' beliefs, attitudes, and behaviors related to HIV testing. We conducted focus group sessions with 41 minority adolescents to assess their perceptions about HIV testing. We triangulated the findings from our focus group data with data from a 125-question survey. Analysis of focus group data demonstrated that Perceived Susceptibility, Perceived Severity, Perceived Benefits, Perceived Barriers, and Cues to Action influenced adolescents' decisions to get tested for HIV. Findings support the need to design interventions that address adolescents' perceived barriers to HIV testing and increase access to and knowledge about HIV testing.

Keywords

adolescents; health belief model; HIV testing; minority

Adolescents and young adults (13–24 years of age) are the fastest-growing age group of HIV-infected individuals in the United States (Kaiser Family Foundation, 2013). The Centers for Disease Control and Prevention (CDC) has estimated that almost 26% of new HIV infections in the United States are in this age group (Centers for Disease Control and Prevention [CDC], 2011). HIV disproportionately affects young ethnic minorities in the United States, as compared to Whites (CDC, 2011, 2014a). Therefore, it is important that resources are directed toward tackling the current disparities in HIV incidence and detection, and that programs are developed to ameliorate these factors. Early diagnosis of HIV through testing is vital to avoid increased transmission and link patients to care, resulting in

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decreased morbidity and mortality (Granich, Gilks, Dye, De Cock, & Williams, 2009). Advances in drug regimens have transformed HIV into a chronic disease, but this can only be achieved when patients are identified through HIV testing and linked to care (Martin & Schackman, 2013). Yet many adolescents and young adults with high-risk behaviors for HIV are unaware of their HIV status and have never had an HIV test (Balaji et al., 2012; Martin & Schackman, 2013). Current research has demonstrated that HIV testing rates are low among high-risk adolescents and young adults, which is promulgating the number of youth with undiagnosed HIV infection (D'Angelo, 2012).

In addition to this age cohort, the burden of HIV is borne disproportionately by a growing number of racial and ethnic minorities and socioeconomically disadvantaged populations (Hall et al., 2008). In the first half of 2013, almost 43% of new HIV diagnoses in New York City were among Blacks and 34% were among Latinos (CDC, 2014a; New York City Department of Health and Mental Hygiene, 2014).

Blacks account for almost half of the persons living with HIV (44%) in the United States (CDC, 2014a). Black youth are particularly affected, with nearly one third of new infections occurring among young people (ages 13–24 years). Among all youth, Black males have higher rates of HIV infection than any other race/ethnicity. The rate of new infections in young Black males is four times higher than that of young Latino males and 11 times higher than that of young White males. Likewise, young Black females are more affected by HIV than young females of any other race in the United States. The rate of new HIV infections among young Black females is six times higher than young Latino females and 20 times higher than young White females (CDC, 2014a).

Recent estimates suggest that Latinos have the second-highest incidence rate of HIV infection of all ethnic groups in the United States (CDC, 2012). Although Latinos comprise approximately 16.3% of the U.S. population, they account for 20% of all new HIV infections in the United States (CDC, 2014b), demonstrating the disparities in the prevalence of the disease. Latino adolescents, and young adults in particular, are disproportionately affected by the disease. Latino adolescents, ages 13 to 19 years, account for 21% of AIDS diagnoses among teens (CDC, 2012). This is particularly troubling with the increasing prevalence of Latinos in the United States (U.S. Census Bureau, 2013), which may further exacerbate the HIV epidemic in this country and highlights the need for targeted interventions that promote early testing and linkage to care for minority adolescents and young adults.

In response to the growing epidemic, the CDC and the U.S. Preventive Services Task Force have issued recommendations for routine HIV testing (Martin & Schackman, 2013). When properly used, HIV testing is the gateway to treatment, care, and prevention (Ng'ang'a et al., 2014). Late diagnosis of HIV results in increased transmission and missed opportunities for treatment, making early HIV testing a critical public health priority. Nonetheless, more than 15% of those who are infected with HIV are unaware of their diagnosis, a problem far more severe in adolescents and young adults (CDC, 2013).

Adjusting for insurance and income levels, disparities in health care services persist for Latino and Black youth (National Institute for Health Care Management Foundation, 2007). Adolescents are less likely to have access to health care services than adults. For example, 8.5 million youth in the United States younger than 18 years of age have no medical insurance. This health disparity is exacerbated in minorities because Latinos and Blacks are less likely than Whites to be insured (Assistant Secretary for Planning and Evaluation, 2011). Low-income adolescents who have public insurance are significantly less likely to have a usual source of care, as compared to youth with private insurance (DeVoe, Tillotson, Wallace, & Selph, 2011).

The Health Belief Model

The health belief model (HBM) is a health behavior change model that can explain and predict health-related behaviors by focusing on the beliefs and attitudes of individuals (Figure 1). The model has been used to understand the uptake of health services (Janz & Becker, 1984), making it particularly relevant and useful for understanding HIV-testing practices. The HBM remains one of the most widely used and well-tested theories in health behavior research and has been applied to predict a wider variety of health-related behaviors (Carpenter, 2010). The model suggests that people's beliefs about health problems, perceived benefits and barriers to action, and self-efficacy, explain engagement in health-promoting behaviors; a cue to action must also be present to trigger the health-promoting behavior. The model is appropriate for complex preventive health behaviors such as HIV testing (Rosenstock, 1974).

A limited number of studies have sought to understand minority adolescents' beliefs, attitudes, and practices related to HIV prevention and testing (Kowalczyk Mullins, Braverman, Dorn, Kollar, & Kahn, 2010; Mullins, Braverman, Dorn, Kollar, & Kahn, 2012). Our study was conducted following passage of the 2010 New York State-issued legislation requiring all health care providers to offer an HIV test to any patient 13 to 64 years of age who had any health care visit (New York State Department of Health, 2012), regardless of risk factors. Moreover, our study was conducted with racial and ethnic minority adolescents who have been understudied and are the most affected by the HIV epidemic. Given the current guidelines, legislation, and the growth of the epidemic, our purpose was to understand minority adolescents' beliefs, attitudes, and behaviors related to HIV testing.

Methods

We conducted a descriptive study using qualitative focus group sessions and quantitative survey data. Study participants ($N = 41$) completed a 125-question survey. Details of the survey items are described below. Following completion of the survey, each adolescent participated in a focus group session. We used an interview guide during focus group sessions. Focus group questions included the following: Would people like to have the opportunity to be tested for HIV? If so, where would they like to go? What help do people need to go for HIV testing? What can be done to make HIV testing as easy as possible?

Recruitment

We obtained institutional review board approval from Columbia University Medical Center prior to the start of study activities. All subjects enrolled in the study completed written informed consent forms prior to their participation. The institutional review board waived the requirement to obtain parent/guardian permission in accordance with 45 C.F.R. § 46.116(d).

Eligibility criteria included being 14 to 18 years of age, a student at a specific high school in New York City, and being able to communicate in English. There were no other eligibility criteria for participation in the study. Data were collected as a convenience sample. Early study participants were recruited on-site at the high school, followed by snowball sampling.

The high school, where recruitment took place, had approximately 1,100 students in grades 9 through 12. The attendance rate at the high school was 80%, which was slightly below the average of 87% of all New York City high schools (New York City Department of Education, 2014). Fourteen percent of students dropped out of high school in 2011–2012. An estimated 80% of students in the school were from families receiving public assistance. About 90% of students were eligible for free lunches. The racial/ethnic origin of the students in the school was: 1% American Indian or Alaska Native, 32% Black/African American, 63% Hispanic/Latino, 2% Asian or Native Hawaiian/Other Pacific Islander, and 2% White (New York City Department of Education, 2014). Across all New York City schools, approximately 70% of students are Black or Latino (Baker, 2014). Therefore, our study sample was representative of the racial/ethnic background of the overall student population in high schools across New York City.

Data Collection

Participants came to our study site for a single visit. Each study participant completed the survey and participated in a focus group session. During this visit, they each completed a 125-item self-report survey, which included items on HIV risk behaviors and attitudes, preferences for HIV testing, and demographic questions. The survey included items from a previously administered survey by Mullins et al. (2012) examining current practices and intent to use condoms during sexual activity and assessing adolescents' preferences for HIV testing methods (Kowalczyk Mullins et al., 2010). The survey measured constructs derived from the Theory of Planned Behavior and the HBM (Montano, Kasprzyk, & Taplin, 1997; Strecher & Rosenstock, 1997). In the original administration of the questionnaire, Mullins et al. (2012) developed scale scores for these constructs, as well as a four-item scale related to privacy of HIV testing. Scales in previous studies were developed using Cronbach's alpha greater than 0.80. The sample in the original study was largely African American adolescents with a mean age of 17.6 years, and all had a history of vaginal intercourse, reflecting a similar sample to our study population. The constructs of the HBM are particularly relevant to HIV prevention and testing because these theoretical frameworks posit that an individual's awareness of his/her risk for HIV promotes protective health behaviors (MacPhail, Pettifor, Moyo, & Rees, 2009).

Following completion of the survey, each adolescent participated in a focus group session. Focus group questions were guided by the HBM. We conducted a total of six focus group sessions: three with all males and three with all females, with a total of 41 adolescents. We continued to collect data until data saturation was reached. We analyzed data throughout our study period and determined that saturation was reached when new information was no longer emerging.

Focus groups were stratified by gender to allow participants to feel comfortable sharing their beliefs about sensitive issues such as risky sexual behavior and HIV testing practices. The focus group format allowed for participants to answer open-ended questions, using their own words and to freely react to other study participants' responses (Kitzinger & Barbour, 1999). Ground rules were introduced to ensure the flow of the session and so all study participants would understand the purpose of the focus group session. The focus group sessions were audio recorded, and one study team member recorded field notes. Focus group sessions lasted between 45 and 60 minutes. The session included time to discuss key questions, followed by member checks and an opportunity to answer final questions.

Member checks took place during focus group sessions to ensure that the moderator correctly understood the participants' responses (Doyle, 2007). The research team debriefed after each focus group session. All participants were compensated with \$25 (USD) for completion of the focus group session and survey questionnaire. Focus group audiotapes were transcribed verbatim into a Microsoft Word document (Microsoft Corporation, Redmond, WA).

Data Analysis

Frequencies were calculated for demographic factors. Means and standard deviations were calculated for the survey questions. We created scale scores based on the previously developed scales in Mullins et al.'s (2012) earlier work. Principles of conventional content analysis were used to iteratively identify descriptive codes (Graneheim & Lundman, 2004) based on the concepts of the HBM.

In our study, we focused on the attitudes and beliefs of the individuals to understand their HIV testing practices. The authors used basic word processing software to organize data from verbatim transcriptions of the analysis and the codes. Two study team members began independently coding after reading each transcript at least twice and highlighting the relevant ideas. Any discrepancies in coding were discussed until consensus was reached among all of the authors.

Data triangulation allows for validation of data through cross-verification from more than two sources. In particular, we combined both quantitative (survey responses) and qualitative research (focus group data) methods to study the same phenomenon.

Results

Survey Data

Demographic characteristics of the sample are reported in Table 1. We specifically reported on gender, race, ethnicity, parental education, language spoken at home, HIV, and sexual history. Mean age of participants was 16.7 years ($SD = 1.2$). One male participant and one female participant reported homosexual activity. Three females reported bisexual activity. Twenty-six participants (63%) reported that they talked to their parents or other adults in their homes about sex.

Of all study participants ($N = 41$), 49% ($n = 20$) thought that they *might* get HIV and 5% ($n = 2$) thought they *very likely would* get HIV, indicating ambivalence about their susceptibility. Similarly, of the sexually (vaginal) active study participants ($n = 22$), 11 (50%) thought that they *might* get HIV and 1 (5%) thought she would *very likely get HIV*. In another survey question related to perceived susceptibility to HIV, only 15% ($n = 6$) of all study participants thought it was *somewhat likely* to *very likely* that they would get HIV in their lifetimes. Similarly, of the sexually active (vaginal and anal intercourse) participants, only 4 (15.4%) thought it was *likely* that they would get HIV in their lifetimes.

We assessed whether our participants were high risk by asking about condom use. Survey results revealed that 24 participants (59%) reported they *probably* or *definitely would* have sexual intercourse even if they didn't have a condom. Moreover, of the 22 respondents who reported ever having vaginal sexual intercourse, 10 (46%) reported that they did not use a condom during their last sexual encounters. Of the four respondents who reported having anal intercourse, two (50%) reported that they did not use a condom during the last encounter.

Survey findings indicated that 63% of participants ($n = 26$) had not been tested for HIV. Of the 22 study participants who reported having had vaginal sexual intercourse, only 12 (55%) reported having ever had an HIV test. Of the four participants who reported having had anal intercourse, three (75%) reported having been tested for HIV. Our survey data (Table 2) indicated that the adolescents perceived few barriers and great benefits to getting tested. Given this discrepancy, we sought to use the findings from our focus group data to further elucidate our participants' decisions not to get tested.

Focus Group Findings

Focus group data illustrated the adolescents' attitudes and beliefs about HIV testing. We categorized our findings (Table 3) according to the HBM to better understand minority adolescents' perceptions about HIV testing. Themes were categorized as follows: Perceived Susceptibility, Perceived Severity, Perceived Benefits, Perceived Barriers, and Cues to Action.

Perceived susceptibility—Only 15% ($n = 6$) of all participants thought that it was *somewhat* or *very likely* they would get HIV in their lifetimes, which was in contrast to a similar question that was asked and reported above. Participants thought they would be more likely to get tested if they believed that they were susceptible to getting HIV. In one case, a

female reported that she had gone for repeated HIV tests because, “You can never be too sure. Just because you got tested doesn’t mean that you couldn’t have had sex with somebody else and got something the day after. I don’t trust anything. I go to get tested.” Another participant explained the importance of HIV testing because anyone is susceptible to HIV, even those who you would least suspect. “In my school, there’s a lot of people that you would never think would get pregnant or have STDs, and they have it.” The concept of susceptibility was pervasive in many of the participants’ minds, as another participant explained, “Me, the last time I got tested was in March, 2 days before my aunt passed away. And then I haven’t had sex since then, so I don’t have anything to worry about right now.”

Perceived severity—Participants were aware of the severity of the disease and the ability to infect others. Seventy-three percent ($n = 30$) of participants thought that HIV was a very serious problem for someone their age. Instead of the severity being a motivating factor to get tested, many adolescents were afraid to get tested and find out that they had HIV. One participant commented about her peers, “It’s not like they don’t want to. They’re probably scared of the outcome, probably, because they probably know that they have a risk of catching something they don’t want to have.” One participant explained that he was afraid of the severity of HIV and said he had not been tested because, “I get afraid of positive results.”

Perceived benefits—Many participants were aware of the benefits of being tested for HIV. When asked in the survey about the perceived benefits of HIV testing, 75.6% ($n = 31$) of participants *agreed to strongly agreed* (Mean = 4.35; $SD = 0.79$) on a scale of 1–5 about the benefits of HIV testing. Seventy-eight percent of participants ($n = 32$) *strongly agreed* that they would get an HIV test because “knowing that I was HIV positive would allow me to start treatment earlier.”

Participants in both the survey and focus groups indicated that it was important to get tested to avoid spreading the disease to others. Seventy percent of participants ($n = 29$) *agreed or strongly agreed* that if they were not infected with HIV they would be more comfortable having sex because they knew they wouldn’t give it to their partners. As one adolescent stated, “It’s not just for yourself. That’s being selfish. You have to know for other people too. HIV goes both ways. It doesn’t just affect you. It affects the person you’re with.” Another participant acknowledged that getting tested would improve overall outcomes, “So I think it’s better to constantly go (get tested), because you never know. It’s better to catch it earlier than later.”

Perceived barriers—We created a scale score for the 10 items related to barriers to getting tested for HIV. The overall mean score across participants for barriers to testing was 4.02 ($SD = 0.84$) on a scale of 1–5, indicating that participants perceived strong barriers to getting tested (Table 2). Survey questions focused on participants’ time to get tested and return to the clinic for results, effect on the relationship with a partner, and pain associated with a blood draw. When probed during focus group sessions, we were able to identify a number of barriers to HIV testing. Adolescents reported a number of barriers that influenced their decisions to not get tested, including: privacy concerns, waiting for results, and stigma associated with getting an HIV test.

Participants explained that HIV testing must remain confidential. Several participants were concerned their health care providers would reveal test results to their parents. For example, one participant said she would not ask to have an HIV test because her physician was “friends with my mother.” On the contrary, another participant said he wouldn’t trust anyone other than his regular provider to test him. “If like a random person like was trying to get me to test, then no, I wouldn’t. I trust my doctor to do stuff like that.” Further privacy concerns included fear that friends would know they were getting tested for HIV, leading to rumors or social stigma. Although participants were aware of the school-based clinic in their school and the HIV testing services available in the clinic, many were concerned about going there for HIV testing because their friends might suspect they were getting an HIV test.

Participants said they don’t like to have to wait for the results and if “you make it like quick and simple, because like you know when you’re waiting for your blood tests and all that, it’s like ... drastic. You’re waiting and waiting and waiting and waiting.” Another participant said he didn’t like having to go back to the clinic for his results and then wait because it increased his anxiety. He said, “To be honest, like I would take the text message because it’s better than waiting, better than traveling to get over there because while you’re waiting there, you sit and worry.”

Many focus group participants stated concerns related to the stigma of being tested for HIV. One participant explained:

And there are some people who wouldn’t go to the one [clinic] at my school because there are ignorant people in my school, where they say if you come out with a frown, you’ve got something. If you come out with a smile, you don’t. What does that have to do with anything?

Cues to action—Participants reported in both the survey and focus groups that they had very few cues to action for being tested for HIV. A little more than half of respondents reported in survey responses that they had never been encouraged to get an HIV test. Specifically, one participant reported, “Your doctor won’t ask you to get an HIV testing unless you tell him that you’re not a virgin because my doctor has never spoken to me about that.” Examples of cues to action included having a test offered by a health care provider or a change in sexual partner. Adolescents liked having reminders to get tested and also liked when their health care providers offered them a test. A few participants commented that they found it difficult to remember to go and get an HIV test, and so one male recommended that, “when you know like it’s time to get your dental, have that dental day be the day that you get everything. You get your dental and you get the HIV test.”

Other participants explained that their cue to get an HIV test was when they had a change in sexual partners. After seeing her provider, one participant explained that:

She asks me about if I was a virgin. And then she asks me if I wanted to get an HIV test. And it wasn’t even something that I was planning for it. It was just something spontaneous and I said, “Sure.” I wouldn’t mind because I knew I was not even, but it never hurts to see results.

Discussion

In contrast to earlier studies in which adolescents reported that they did not consider themselves to be at risk for HIV (Peralta, Deeds, Hipszer, & Ghalib, 2007), participants in our study indicated susceptibility to getting HIV someday. Most participants, both sexually active and not sexually active, indicated that they might get HIV, demonstrating ambivalence about perceived susceptibility. Perceived susceptibility was nearly the same among sexually active and not currently sexually active adolescents. This discrepancy may indicate that participants are unsure of their risk for getting HIV.

The self-reported HIV testing rate was 34% of all study participants and 55% of sexually active participants. The latter was consistent with rates reported in other studies (Hall, Walker, Shah, & Belle, 2012; Kaiser Family Foundation, 2011). The former testing rate was quite low considering that our study population lived in New York State, where it is mandatory for health care providers to offer an HIV test to every patient between 13 and 64 years of age, regardless of risk factors, including sexual activity. Moreover, more than half of our participants reported that they thought they were likely to acquire HIV, which would support them seeking an HIV test. In past studies, adolescents were more likely to get tested if they perceived themselves to be more susceptible to HIV (Mullins et al., 2012).

Focus group and survey data demonstrated that barriers still existed for gaining access to HIV testing. Participants reported specific barriers that influenced their HIV testing practices, including: being treated with respect by health care providers, assurance of confidentiality, and family support, which was similar to the findings in other studies (Hampana, Ybarra, & Bull, 2014). However, further research still needs to be conducted to fully understand these barriers. In a recent study, only half of the adolescent study participants who reported a high intention to get tested, agreed to be tested for HIV (Mullins et al., 2012), suggesting that issues such as privacy and confidentiality concerns identified in our study are important factors that need to be addressed. Despite strict legislation and mandates to protect personal health information and specific HIV-related health information (U.S. Department of Health & Human Services Office for Civil Rights, 2012), privacy and confidentiality concerns related to HIV prevailed as a barrier to HIV testing. Of note, our study findings supported the idea that adolescents have specific concerns about peer and family knowledge of their taking an HIV test, which might be worthwhile to explore in order to increase HIV testing rates in this population.

Other barriers to HIV testing in adolescents have been reported. Low perception of risk for becoming infected with HIV and having never been offered an HIV test were common reasons adolescents and young adults reported not being tested for HIV (Kaiser Family Foundation, 2012). Participants in our study reported few cues to action to encourage them to seek out testing. Most notably, adolescents reported that their health care providers did not consistently offer them an HIV test. This finding is inconsistent with the current policy recommendations, in which New York State mandates that an HIV test be offered to all patients ages 13 to 64 years when they receive health care services (New York State Department of Health, 2012). Although some of our study participants might not have visited a health care provider in the previous 2 years, many did, as they discussed during the

focus group sessions. Nearly 2 years after this legislation, all of our participants who experienced a health care system visit should have been offered an HIV test on a consistent basis. Our data demonstrate the need to educate health care providers about new testing legislation and other public health mandates.

Many high-risk adolescents continue to be unaware of their HIV status, so additional strategies are needed to encourage HIV testing. It has been estimated that 49% of HIV transmissions are from those who are unaware of their status (Hall, Holtgrave, & Maulsby, 2012). This is consistent with the HBM, which posits that people are more likely to use protective health behaviors if they perceive themselves to be more susceptible to the disease (MacPhail et al., 2009). Adolescents are less likely than adults to know their HIV status (Chen et al., 2012), making them more likely to transmit HIV to others in the community (Hall et al., 2010). These troubling statistics, combined with research, support the need for widespread HIV testing campaigns especially for high-risk adolescents.

Limitations of our study include self-reported data; participants may not be accurately reporting their actual behaviors and testing practices. Another limitation is the generalizability of the findings because all of the participants were recruited from a single geographic area. Our survey questions did not ask about pregnancy intentions and so participants may not have used condoms because of a desire to get pregnant. Almost all of our study participants reported that they had exclusively heterosexual encounters. As a result, these findings have a limited heterosexual bias.

Nursing Implications

Findings from our study support the usefulness of the HBM for understanding adolescents' HIV testing needs and using the constructs of the model to guide discussions during patient encounters. In today's health care environment, the nursing workforce has been charged with helping meet the health care needs of diverse populations across the lifespan (Institute of Medicine, 2011). With the passage of the Affordable Care Act and the expansion of health care coverage (Sommers, Buchmueller, Decker, Carey, & Kronick, 2013), primary care services will be in high demand and nurses will be at the front line for the delivery of care (Hahn & Sheingold, 2013), which is particularly needed in underserved communities, such as the study population in our research. Findings from our work illustrate the importance of clinicians focusing not only on the benefits of HIV testing, but also on existing perceptions and barriers that may be relevant to decisions about getting tested for HIV. Nursing practice covers an expansive continuum from coordination of care to health promotion to disease prevention (Institute of Medicine, 2011), and nurses are in a unique position to help adolescents overcome many of the existing barriers to HIV testing. In addition to the practice implications of these findings, a strong theoretical framework such as the HBM should guide further research on HIV testing in adolescents. Our work has elucidated the target areas that should be addressed to improve HIV testing rates in adolescents and can be used to guide intervention development, which is well suited for nurse-led research.

Conclusion

Efforts to increase HIV testing rates in adolescents should consider findings from our study to understand adolescent health beliefs and to develop targeted interventions to meet the needs of adolescents. While many adolescents in our study were interested and willing to be tested for HIV, they reported several barriers to HIV testing that would need to be addressed to make testing accessible. Future interventions should focus on increasing knowledge about the risks associated with HIV and improving access to HIV testing information and services.

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Key Considerations

- Developing targeted interventions to meet health beliefs of adolescents may improve HIV testing rates in this population.
- High-risk adolescents reported few cues to action to encourage them to seek HIV testing.
- Adolescents report barriers to HIV testing that need to be addressed to make testing more accessible.

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Figure 1.
The health belief model.

Table 1
Demographic Characteristics of Study Participants

Variable	<i>n</i> (%)
Gender	
Male	25 (61)
Female	14 (34)
Race	
African American	17 (41.5)
White	2 (4.9)
Multiracial/other	22 (53.7)
Ethnicity (Hispanic/Latino)	23 (56.1)
Parental education	
Less than high school	2 (4.9)
Some high school	12 (29.3)
High school graduate	8 (19.5)
Some college	7 (17.1)
College graduate or beyond	6 (14.6)
Language spoken at home	
English	27 (65.9)
Spanish	11 (26.8)
HIV sexual history	
History of HIV test	14 (34.1)
History of vaginal intercourse	22 (53.7)
History of anal intercourse	4 (9.8)
History of oral intercourse	15 (36.6)

Note: Not all categories equal 100% due to missing data.

Table 2
Mean Scores of Adolescents' ($N = 41$) Preferences and Beliefs About HIV Testing

Construct/Item	Number of Items	M (SD)
Health belief model		
Perceived barriers to HIV testing ^a (Kowalczyk Mullins et al., 2010)	10	4.02 (0.84)
Perceived benefits of HIV testing (Kowalczyk Mullins et al., 2010)	6	4.35 (0.79)
Perceived susceptibility to HIV (Streicher & Rosenstock, 1997)	3	1.81 (0.94)
Perceived severity of HIV (Kowalczyk Mullins et al., 2010)	2	2.71 (0.82)
Self-efficacy to obtain HIV testing (Streicher & Rosenstock, 1997)	1	2.58 (1.08)
Cues to action to obtain HIV testing (Streicher & Rosenstock, 1997)	7	0.59 (0.65)
Preferences for HIV test characteristics Intention to obtain HIV testing (Montaño et al., 1997)	2	2.32 (1.06)
Time to result	1	2.27 (0.71)
Test accuracy	1	2.10 (0.70)
Privacy of testing	4	1.95 (0.53)

^aReverse coded.

Table 3
Concepts, Definitions, Categories, and Sample Quotes of Adolescents' Beliefs About HIV Testing Guided by the Health Behavior Model

Concepts	Definitions	Categories	Examples (Direct Quotes From Participants)
1. Perceived Susceptibility	Participants believe they may have been exposed to HIV or may be in the future.	N/A	<ul style="list-style-type: none"> • The quietest people, like you know how you judge people too quickly? I don't do that anymore. • My judgment is yes, you have it. We better get you tested. That's it. But that's just me, because my head is just not right anymore. • It's not like they don't want to. They're probably scared of the outcome, probably, because they probably know that they have a risk of catching something they don't want to have. When you talk to people and then they don't listen, they get themselves stuck in a predicament that they can't get themselves out of, what can you do about it?
2. Perceived Severity	Concern over the consequences of having HIV are significant enough to get tested for the disease	N/A	<ul style="list-style-type: none"> • It's like really serious because like some people, they have it and they don't even know so they just, like, transmit it to everybody.
3. Perceived Benefits	Participants believed that the recommended action of using condoms or getting tested would protect them from getting HIV or spreading it	N/A	<ul style="list-style-type: none"> • No, but like if you know and you know early, you can get rid of it early before it starts to get like your entire body. • It's not just for yourself. That's being selfish. You have to know for other people too. HIV goes both ways. It doesn't just affect you. It affects the person you're with.
4. Perceived Barriers	Barriers that influence adolescents' decisions not to get tested	Privacy Concerns	<ul style="list-style-type: none"> • I wouldn't mind him (physician) telling my parents. as long as he asks me. It's like stabbing me in the back, you know. • Long as they don't call my house and say, "Oh, here's the HIV result." • I don't really trust my doctor but I don't know. I haven't built a relationship. I change doctors like every, like I don't even stay with them. • My first doctor, like my doctor from like last year. I just felt like she will tell my mom. They're really close, probably tell my mom. And then this doctor, I don't know, I just kind of don't have trust, I don't know.
		Waiting for Results	<ul style="list-style-type: none"> • Yes, it takes too long. Like normally I would go to the doctor about 7 and they don't get around to me until like 10.
		Stigma	<ul style="list-style-type: none"> • They automatically assume that if you go into the clinic, you're going to get tested, which is false. Because I've gone to the clinic for my physical. I go the clinic when I have a headache, because I (inaudible). I'm done. So it's ignorant people ... But I still think that should have no effect on whether you're going to the clinic or not, because you're not checking whether they have something. You're checking whether you have something. • I think sometimes people are afraid. Like they go get tested and they are positive, and therefore what are they going to tell their parents, what are they going to tell their partner?

Concepts	Definitions	Categories	Examples (Direct Quotes From Participants)
5. Cues to Action	Receive reminder cues for action, which encourages and provides information about HIV testing	Test is Offered by a Health Care Provider	<ul style="list-style-type: none"> Like for example, when you know like it's time to get your dental, have that dental day be the day that you get everything. You get your dental and you get the HIV test. You see how sometimes when they go to check your blood pressure on the street? Maybe like that. Like in those vans? Somewhere where I hear it more, because you don't really hear about HIV that much. You don't really test ... there aren't really posters talking about it. At my physical, they asked me if I wanted to. The only way we'll know about testing is when our doctor tells us, which he usually doesn't.
		Change in Sexual Partner	<ul style="list-style-type: none"> Well, first of all, you get tested before sexual intercourse and then you use a condom when you have it. The only reason I'll get tested is if I change my partner. That's when I would get tested.