REPEAT HIV TESTING AMONG LOW-INCOME MINORITY WOMEN: A DESCRIPTIVE ANALYSIS OF FACTORS INFLUENCING DECISIONAL BALANCE

Objective: This exploratory study quantified potential barriers to repeat HIV testing, as well as perceptions supporting further testing among women previously tested for HIV. The study also determined associations between summative measures of barriers (and supportive factors) and women's intent to be tested for HIV.

Design and Setting: One hundred forty-three women (95.4% African-American) who attended an urgent care center, and reported a history of HIV testing, completed a face-to-face interview.

Results: Frequently perceived barriers included perceptions that repeat testing was unnecessary, either based on: 1) having only one sex partner since the last test (38.1% of responders); 2) obtaining a negative test result in the past year (36.7%); 3) worry about coping with a positive diagnosis (30.7%); 4) a belief that "guys I have sex with always use condoms" (27.5%); or 5) a belief that treatment may not be affordable (25.2%). Other barriers were endorsed with less frequency. A broad range of supportive factors were endorsed, including: 1) testing is part of self-care (85.8%); 2) knowing to avoid sex if HIV-positive (85.8%); 3) test results are reliable and important (84.7%); 4) early diagnosis can improve odds of staying healthy (83.0%); and 5) coping with a positive test result, and paying for treatment, would be manageable (78.6% and 78.2%, respectively).

Conclusions: Findings suggest that barriers and supportive factors played equally important roles in women's intent to be tested for HIV. Intervention efforts designed to promote repeat HIV test acceptance among low-income, African-American women should focus on changing perceptions of barriers, and enhancing supportive factors. (*Ethn Dis.* 2004;14:330–335.)

Key Words: HIV, African-American Women, Low-Income, HIV Testing

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INTRODUCTION

The value of HIV testing to reducing incidence of HIV in the United States has been well established.¹ A central challenge, however, is promoting acceptance of testing among populations most at risk for contracting HIV. To date, the vast majority of studies investigating behavioral correlates of HIV test acceptance have focused on pregnant women.^{2–6} Unfortunately, only a few studies^{7–10} have investigated this question among women in the general population, rather than in those specifically at risk of vertically transmitting HIV.

Recent surveillance suggests that HIV incidence is increasing most rapidly among African-American women.11 Evidence suggests that low-income African-American women, particularly those residing in the South, are at increased risk for HIV.12,13 An especially vulnerable population of African-American women may be those receiving urgent care services designed for indigent women, who are otherwise not connected to a healthcare delivery system. Such women may not be diagnosed until late in infection and, furthermore, may take longer to initiate care once their diagnosis is known.

Investigation of HIV test acceptance among low-income, predominantly African-American women is easily facilitated through the use of the trans-theoretical model of behavior change.^{14–16} The model posits that decisional balance is a key aspect of behavior. Decisional balance can be viewed as a personal comparison of pros and cons for any given behavior (eg, having an HIV test). Pros and cons are broadly defined to include physical, emotional, and social aspects.¹⁵

The primary purpose of this exploratory study was to quantify potential barriers (ie, cons) to HIV testing, as well as perceptions that support testing (ie, pros), among women who had previously been tested for HIV. We chose to restrict our study to the question of "repeat testing," because previous published research has not investigated this question, despite the need to address HIV test acceptance among women experiencing continued exposure to risk after an initial test for HIV. Related evidence suggests that low-income adolescents experience considerable risk for developing STDs after initial testing (and treatment) for the diseases.^{17,18}

The secondary purpose of this study was to determine associations between summative measures of barriers (as well as perceptions that support testing) and women's intent to be tested for HIV in the near future (12 months). This analysis allowed us to compare the relative importance of pros and cons in women's intent to be tested for HIV.

Methods

Participants

From May through August of 2002, women attending an urgent care center were asked to participate in a survey. The urgent care center served low-income women residing in Atlanta, Ga, as well as women from outlying areas in south Georgia. Women attending this facility have very low incomes and are predominately African-American. The Center is unique in that it provides care exclusively to women. The range of services includes care for emergent, life threatening conditions, as well as for less severe problems.

Inclusion criteria were willingness to

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participate, being 18 years of age and older, and not having been previously diagnosed as HIV-positive. Women obviously experiencing extreme pain were not solicited for study participation. Incentives were not provided. Consent consisted of responding "yes" to 2 questions: one affirmed patients' understanding of the study, and the other affirmed patients' consent to participate. The Internal Review Board at Emory University and the Research Oversight Committee of Grady Memorial Hospital approved all procedures.

Data Collection

Women (N=143) completed an anonymous interview, lasting approximately 15 minutes, in a private or semiprivate setting within the clinic waiting areas, or in a nearby classroom. Interviewers were African-American women trained and skilled in establishing rapport and eliciting honest responses from study participants.

Measures

Assessment of Potential Barriers to Testing

Based on a combination of findings from previous research and the clinical experience of the senior author (EB), the authors developed 12 items that served as potential barriers to HIV test acceptance among women attending the urgent care center. The items were presented as a series of responses following an initial question posed by the interviewer: "People usually think of reasons why and why not to be tested for HIV. Which of the following reasons for not being tested apply to you?" Women were then instructed to answer "true" (indicating that the item applied to them) or "false" (indicating that the item did not apply) to each of the 12 statements. To facilitate comprehension, women were also provided with a laminated and enlarged version of the 12 response items, which they were encouraged to study as the interviewers read each out loud. Interviewers proceeded at a pace commensurate with each woman's comfort level, and provided ample opportunity for reflection, questions, and clarification.

Assessment of Perceptions that Support Testing

Again, 12 "true" or "false" items were developed, using an identical procedure, and were posed to women following an initial question: "People usually think of reasons why and why not to be tested for HIV. Which of the following reasons that support being tested apply to you?"

Assessment of Intent to be Tested

As part of the interview, women were asked, "If you were offered HIV testing today, would you accept?" Women were also asked, "How likely is it that you would agree to have an HIV test in the next 12 months?" Response alternatives for this interview question were provided on a 5-point scale ranging from (1) "very likely" to (5) "very unlikely."

Data Analysis

Summative scores were created for the 12 items that assessed barriers to HIV testing, and the 12 items that assessed supportive factors for testing. Ttests were used to compare the mean number of barriers (and perceptions of supportive factors) between women, indicating positive vs negative intent to be tested. Subsequently, logistic regression models were used to determine the relative importance of barriers and supportive factors (that achieved bivariate significance) in predicting positive intent to be tested. Achieving an alpha level of less than .05 defined significance.

RESULTS

Characteristics of the Sample

Two hundred women were approached and asked to participate in the study. Of these women, 176 (88%) agreed to be interviewed. For analysis, we selected only those who reported having had at least one prior HIV test (N=143).

Women ranged in age from 18 to 60 years; average age of the women was 28 years (standard deviation = 9.3 years). The majority (95.4%) self-identified as African-American, 3.5% as Hispanic, and 1.1% indicated "other race." Forty percent reported they had not completed high school. Less than half (46%) reported being employed at least 3 days per week. Nearly one fifth (19%) reported being currently pregnant. The majority (77%) reported they had never been married. Eleven percent of the women were currently married, while 8% reported being divorced, and 4% reported being widowed.

Of the 176 women interviewed, 143 (81%) reported being tested for HIV at least once (mean = 3.6; standard deviation = 4.4). Table 1 displays selected characteristics for this sub-sample of women. As shown, women were generally satisfied with their HIV testing experiences, despite having to wait an average of 10 days after testing to learn the results. Women reported having an average of 1.4 sex partners in the past year. Level of worry about HIV infection was modest. Finally, women had a tendency to agree with statements suggesting that HIV infection would sub-

Table 1. Selected characteristics of study participants who reported having at least one HIV test (N=143)

Characteristic	Mean	SD	Minimum/Maximum
Satisfaction with most recent HIV test	1.88	.7	1 (very satisfied) through 5
Number of days to find out results	10.6	10.9	1–60*
Number of partners since last HIV test	1.41	1.11	0–10
Often worry about HIV	3.1	1.2	1 (strongly agree) through 5
Believe being HIV+ would complicate life	2.0	.9	1 (strongly agree) through 5
Believe HIV would lead to premature death	2.2	1.0	1 (strongly agree) through 5
* The number "60" includes 4 women who never l	earned thei	r test res	ults.

stantially complicate life, and could lead to premature death.

Potential Barriers to HIV Testing

Table 2 displays 12 response alternatives provided to women relevant to reasons why they might decline HIV testing. Women were encouraged to select all of the response alternatives that applied to them. The mean number of selected alternatives was 2.3 (standard deviation = 2.2; the range was 0 to 11, with a median of 2. Thirty-seven women (26%) did not select any of the response alternatives. The table is arranged in descending order, with the most frequently selected alternatives appearing first. As shown, more than a third of the women believed they did not need another test (either based on having the same sex partner since the last HIV test, or on a previous negative

result). About 30% indicated they might avoid testing because they could not cope with a positive diagnosis. Approximately 28% indicated they would not need an HIV test based on a belief that their sex partners "always use condoms." About 25% indicated they would avoid testing due to concern about not being able to afford treatment if their results were positive. Remaining response alternatives were selected far less frequently.

Perceptions Supporting Repeat HIV Testing

Table 3 displays 12 response alternatives provided to women relevant to reasons why they might accept repeat HIV testing. Again, women were encouraged to select all of the response alternatives that applied to them. The mean number of selected alternatives was 8.5 (standard deviation = 3.0); the

Table 2. Frequency of responses provided to a question asking women why they would not need an HIV test

Response	
I have only had sex with one guy after having my last test for HIV	38.1
I had one (HIV test) in the past year and it came up negative	36.7
I'm worried that I might not be able to cope with finding out I have HIV	30.7
The guy (or guys) that I have sex with always use condoms	27.5
If I test positive, I would not be able to afford treatment	25.2
I don't want to have my blood drawn again	17.1
I have too much stress in my life right now to also find out that I have HIV	14.6
The test is not reliable—it could be wrong	13.0
I worry that the test results will not be private	12.9
It takes too long to get the test results back	10.9
The test won't help anyway, there is nothing I can do to prevent getting infected	7.2
The test requires too much time	2.9

range was 0 to 12, with a median of 9. Only one woman did not select any of the response alternatives. As shown, at least 80% of the women selected response alternatives suggesting a favorable perception of HIV testing, such as: 1) testing is part of self-care; 2) finding a positive result could be important in that it would inform women to avoid sex; 3) the test is reliable and the results important; and 4) an early diagnosis can improve odds of staying healthy. At least 70% selected response alternatives indicating other favorable attitudes toward testing, including: confidence in their ability to cope with a positive test result; convenient testing; manageable payment for treatment; and confidential test results.

Approximately two thirds of the women indicated they did not mind having their blood drawn. Sixty percent selected a response alternative suggesting that HIV testing is an important part of prenatal care. Fifty-five percent indicated that HIV testing was important because their sex partners did not always use condoms, and one third indicated that a reason to be tested was their suspicions that their sex partners may have HIV.

Bivariate Associations

The summative measures of barriers to testing and favorable reasons for testing were tested for association with a question asking women whether they would agree to have an HIV test today. Before conducting this analysis, one item ("I had one in the past year and it came up negative") was deleted from the measure that assessed barriers. This item could not be included because doing so would imply that women should be tested for HIV despite recent testing. The mean number of barriers among women who said they would accept an HIV test "today" (83% of the women) was 1.8, compared to 2.8 among the 17% who indicated they would not accept an HIV test that day. This difference was significant (t=2.1, df=138,

Table 3. Frequency of responses provided to a question asking women why they would want an HIV test

Response		
I take care of myself, HIV testing is part of this process	85.8	
I would like to know not to have sex with anyone in the event that I have HIV	85.8	
The test is reliable—the results are important to me	84.7	
I heard that finding out about HIV early can improve my chances of staying		
healthy	83.0	
If I test positive, I would find a way to cope with having HIV	78.6	
The test is convenient so, having it done is no big deal	78.3	
If I test positive, I would find a way to afford treatment	78.2	
I feel that the test results will be kept confidential	77.7	
I don't mind having my blood drawn	67.7	
I am (or may be) pregnant and I am very concerned about the health of my baby	59.6	
The guy (guys) I have sex with don't always use condoms	54.9	
I have suspicions that my current sex partner may have HIV	33.3	

P < .04). Similarly, the mean number of supportive reasons (8.8) among women agreeing to be tested "today" was significantly greater than the mean (7.3) among those declining the offer (t=2.2, df=139, P=.03).

In addition, the summative measures of barriers to testing and favorable reasons for testing were tested for association with a question asking women whether they would agree to have an HIV test in the next 12 months. Again, before conducting this analysis, we deleted the barrier question regarding having had a recent HIV test. Eighty-five percent of the women said they were either "very likely" or "likely" to be tested in the next 12 months. These women were compared to the remaining 15% who indicated they were "unsure," or were "unlikely," or "very unlikely" to be tested. The mean number of barriers among women who said they would accept an HIV test in the next 12 months was 1.8, compared to 2.8 among those who said they were unsure or unlikely. This difference was marginally significant (t=1.9, df=138, P=.05). Similarly, the mean number of supportive reasons (8.8) among women indicating agreement was marginally greater than the mean (7.4) among those responding that they were unsure, or unlikely to be tested (t=1.9, df=139, P=.06).

Multivariate Associations

Subsequently, we determined the relative contribution of barriers and supportive factors to predicting women's acceptance of HIV testing "today." Upon regressing (using direct entry), the like-lihood of women accepting an HIV test today on the 2 summative measures, it was observed that barriers were marginally associated with declining the offer of an HIV test (odds ratio = 1.28, 95% CI = 1.00-1.56), and that supportive factors for testing were marginally protective against declining this offer (odds ratio = .86, 95% CI = .74-1.00).

DISCUSSION

Findings from this exploratory study suggest that low-income, African-American women may perceive fewer barriers to repeat HIV testing, compared to factors that support repeat testing. However, our multivariate findings also suggest that perceived barriers and supportive factors play equally important roles in women's intent to be repeat tested for HIV. Therefore, favorable decisional balance may be achieved by helping women overcome key barriers to repeat testing, while also making multiple factors supporting repeat testing more salient to women. Findings also suggest ... our multivariate findings also suggest that perceived barriers and supportive factors play equally important roles in women's intent to be repeat tested for HIV.

that women's perceptions of barriers and supportive factors may be more relevant to whether they would accept an HIV "today" as opposed to some point in the future (ie, "in 12 months").

Given the high risk of exposure to HIV experienced by many low-income, inner-city, African-American women,^{5,11,19} routine HIV testing may be an important strategy to reduce the spread of HIV,^{1,20} and to provide early therapy for those testing positive. Our exploratory findings suggest that one key barrier to repeat testing may involve women's beliefs that further testing is unnecessary if they have not changed sex partners since their last negative test. Clearly, for some women such beliefs are well-founded; however, other women may be at risk of HIV infection due to the current (and potentially undisclosed) HIV-risk behavior, or unknown/ undisclosed seropositive status, of their male partners. Because some women may not be aware that their partners pose a risk for HIV infection, their belief that risk is absent may be difficult to challenge. Similar beliefs have been expressed by low-income African-American women who report that condoms are not used because their partners are not at risk.21

Another important barrier revealed by this study was that women might avoid testing based on their perception that they could not cope with a positive diagnosis. In many respects, these perceptions may mirror economic- and stigma-related realities that may clearly exist for HIV-positive women.

Yet, it is important to note that multiple supportive factors (ie, perceptions that may mitigate the strength of barriers) were widely endorsed by women (Table 3), and that many of these are quite specific to dealing with the prospect of testing positive. In particular, widespread endorsement of one factor ("If I test positive, I would find a way to afford treatment") suggests that at least one aspect of "economic coping" may be an important perception leading to test acceptance. Widespread endorsement of a related factor ("If I test positive, I would find a way to cope with having HIV") suggests that perceptions of potential emotional coping may be important to test acceptance.

As suggested by the trans-theoretical model, interventions designed to favorably impact decisional balance should begin by addressing the pros of adopting the desired behavior.¹⁶ Our findings (Table 3) provide a potential starting point for defining salient reasons why low-income African-American women may perceive repeat HIV testing as advantageous. According to the trans-theoretical model, subsequent intervention efforts should focus on reducing perceived barriers (ie, the "cons") to adopting the behavior.16 Again, our exploratory findings (Table 2) may provide a useful starting point for designing education and counseling programs that successfully reduce women's perceived barriers to repeat HIV testing. However, changing women's perceptions relative to potential barriers should be accompanied by structural changes that provide continuous support (at an economic, social, emotional, and physical level) for women who test positive, and to increase accessibility to services for women in need of repeat HIV testing.

Limitations

Findings are limited by several factors, including the inherent limitations of a cross-sectional study design, and the use of a convenience sample. An important limitation is reliance on the validity of women's self-reported assessments relative to factors that serve as barriers to, or support for, repeat HIV testing. In particular, the lack of a qualitative component may be problematic in that key barriers and key supporting factors may not have been provided to women as response options. Further, the utility of our bivariate and multivariate findings is limited by the low statistical power that is inevitable with a small sample size. It should also be noted that these analyses used 2 measures of intent for repeat HIV testing, rather than prospectively following women to ascertain whether they actually received repeat testing. Finally, the interview did not include an item assessing women's income level; therefore, we were unable to look for differences within strata of low-income women, relative to the study questions.

CONCLUSIONS

Findings from this exploratory study provide initial evidence suggesting that intervention efforts designed to promote repeat HIV test acceptance, among lowincome, African-American women, should focus on a wide range of women's perceptions. Healthcare providers may assist these women by maintaining ongoing efforts to redress actual barriers to repeat HIV testing, while providing tangible, increased support for this testing.

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