

HIV Testing and Conspiracy Beliefs Regarding the Origins of HIV among African Americans

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Abstract

Conspiracy beliefs regarding the origins of HIV are common among African Americans, and have been associated with engaging in HIV risk behaviors but also with earlier diagnosis among HIV patients. The objective of the present study was to test the association of HIV serostatus testing with conspiracy beliefs. A total of 1430 African Americans from low-income neighborhoods with high rates of drug use were surveyed in 1997–1999 in face-to-face interviews. Two 4-point items assessed if participants agreed that “AIDS was started by an experiment that went wrong” and “AIDS was created to kill blacks and poor folks.” A binary variable indicated if the respondent agreed with the statements, on average. 22.5% of the sample endorsed conspiracy beliefs, 4.0% of whom reported not having had an HIV test, compared to 7.7% of those who did not endorse conspiracy beliefs. In multivariable logistic regression modeling, never having had an HIV test was significantly associated with conspiracy beliefs (adjusted odds ratio [AOR] = 0.43, 95% confidence interval [CI] = 1.3–4.3), having a high school education (AOR = 0.55, CI = 0.35–0.84), having depression (AOR = 1.61, CI = 1.02–2.52), female gender (AOR = 0.54, CI = 0.34–0.86), younger age, and a history of injection drug use (AOR = 0.36, CI = 0.23–0.56), but not sex risk behaviors (multiple partners, irregular condom use). The finding that individuals who have conspiracy beliefs are more likely to have been tested for HIV may partially explain why HIV-positive individuals who endorse conspiracy beliefs are more likely to obtain an earlier diagnosis.

Introduction

AFRICAN AMERICANS represent a disproportionate number of new HIV infections in the United States.¹ Consequently, understanding the attitudes of African Americans to HIV and HIV testing is potentially important for developing culturally sensitive policy and interventions to reduce the spread of HIV. Prior work suggests that many African American in inner cities are knowledgeable about HIV, although some misunderstanding exists. For example, in a study of African Americans in Chicago, Illinois, public housing, 71% were aware that HIV therapy is available, 25% thought an HIV vaccine was available, and 13% thought that there is a cure for HIV.²

Evidence suggests that conspiracy beliefs regarding the origins of the HIV virus are common among African Americans.^{3–6} Often these beliefs have been operationalized in research as agreeing to statements that HIV is used by the government to kill “undesirable” minority populations and/or that HIV was made by humans. While the latter belief does

not necessarily indicate a conspiracy, there is the implication of a cover-up. Surveys have indicated that these beliefs are higher among African Americans than white Americans.^{7–9} This is likely a result of daily experiences of discrimination and racism, the legacy of the Tuskegee Study, and articles in leading African American news outlets.⁵ Aside from being a member of a minority racial/ethnic group,^{8,9} male gender and lower educational attainment are characteristics associated with endorsing conspiracy beliefs.¹⁰

Evidence suggests that conspiracy beliefs may play an important role in health behaviors. In a study by Bogart and Bird,¹¹ HIV conspiracy beliefs implicating the government in the origins of HIV were associated with negative attitudes toward condoms and reporting a greater number of sex partners. A later study by Bogart and Thorburn⁴ found that conspiracy beliefs are associated with more negative attitudes toward condoms and a lower likelihood of reporting consistent condom use in the prior 3 months among men but not women.

While important to intervention efforts, having conspiracy beliefs may not be an impediment to HIV care. Clark and

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colleagues¹² examined conspiracy beliefs among a study of HIV patients at publicly funded health care facilities where 53% of the sample was African American. The authors found that patients with HIV conspiracy beliefs (including items on the origins, cure, and vaccine) were not different from those without conspiracy beliefs in terms of highly active antiretroviral therapy (HAART) use and adherence and continuity of health care, and those who endorsed more conspiracy belief had higher CD4 cell counts at diagnosis, suggesting earlier diagnosis.

HIV testing, when it results in early diagnosis, is crucial to reducing the spread of HIV and to getting HIV-positive individuals appropriate care.¹³ Consequently, recent revisions to Centers for Disease Control and Prevention (CDC) recommendations have indicated the need for voluntary HIV testing as a "routine part of medical practice."¹⁴ Most individuals who have been tested for HIV are tested in medical settings.^{15–17} Common factors associated with a history of HIV testing are perceived risk of contracting HIV, older age, female gender, greater educational attainment, black or Hispanic race, more depressive symptoms, and greater alcohol consumption.^{16–18}

The present study examined self-reported HIV testing as a mechanism for the relationship of earlier HIV diagnosis and conspiracy beliefs observed by Clark and colleagues.¹² We studied this relationship among African Americans in low-income neighborhoods with high rates of drug use, controlling for HIV risk behavior. Formally, we tested the association between the odds of never having had an HIV test and having conspiracy beliefs regarding the origins of HIV.

Methods

Sampling and recruitment

The present study was a secondary analysis of baseline data from a combined intervention and cohort study (Self-Help In Eliminating Life-threatening Diseases¹⁹ [SHIELD]) in Baltimore, Maryland (1997–2004). The intervention consisted of 10 sessions designed to train participants to act as peer educators to their social network members and larger community on the topic of HIV prevention. Baseline interviews occurred between June 1997 and February 1998. All interviews were conducted face-to-face by trained interviewers recruited from the local community. Study procedures were reviewed and approved by the local Committee on Human Research. All participants provided informed consent and were financially compensated for their involvement in the study.

Individuals were recruited into the study using targeted outreach from low-income communities with high rates of drug use, identified via ethnographic methods and crime reports. Eligibility criteria included having at least weekly contact with drug users, being 18 years of age or older, willingness to conduct outreach education to their social network members on HIV risk behavior reduction, willingness to bring in a network member, and no recent enrollment in other HIV behavioral interventions. Additional respondents were recruited from among social network members, with a financial incentive for the original (index) participants to bring in network members for interview, such that 35% of the participants were recruited from the social network of other participants. Participants for the present analysis were selected if they re-

ported their racial/ethnic background as black/non-Hispanic, which included 1546 of the 1667 baseline participants.

The 1546 African American participants of the SHIELD study were largely drug-experienced, as 72% reported using heroin and/or cocaine in the prior 6 months, 62% reported ever injecting drugs in their lifetime, and 89% had a lifetime history of heroin and/or cocaine use. The African American sample was 61% male, and 19% reported being HIV-seropositive. Only 7% report ever having been married, but 61% currently had a main partner. Having completed a high school education was reported by 53% of the sample.

Measures

Two items were developed based on focus group discussions with participants to assess HIV conspiracy beliefs. Participants were asked if they agreed with the statements "AIDS was started by an experiment that went wrong" and "AIDS was created to kill blacks and poor folks" on a four-point scale, with the choices "strongly agree," "agree," "disagree," and "strongly disagree," where a lower score indicated greater agreement. The polychoric correlation of the two four-point items was 0.57. Based on the strength of the correlation, the two items were summed and a dichotomous variable was created to designate if the sum score was less than five. This binary variable indicated in the respondent agreed with the two conspiracy belief items, on average. Lifetime history of HIV testing was assessed via the question "Have you ever been tested for HIV?" Despite the high prevalence of HIV risk behavior in this sample (Table 1), some individuals reported not having had an HIV test, and we were interested in examining this resistant minority. Consequently, the HIV test variable was reverse-coded so that a "1" indicated that the respondent had not had a HIV test. Depression was assessed via the Center for Epidemiologic Studies-Depression Scale (CES-D²⁰). The scale contains 20-items on a 4-point scale and has been shown to have high reliability and validity.²¹ The Cronbach α of the CES-D in the SHIELD sample was 0.90. HIV risk behavior was ascertained through several indicators: whether the participants self-reported injection drug use in their lifetime, whether the participant reported having more than one partner in the prior three months, and whether the participant reported using condoms "less than half the time" for vaginal and/or anal receptive intercourse with main or casual partners in the prior three months (scored a "0" if they reported no sex during this time period).

Missing data

A total of 116 (7.5%) participants were missing data on variables included in the final multivariable model. Those individuals with missing data were not different from those in the final model in terms of their likelihood of endorsing conspiracy beliefs on average, based on the binary variable described above, or in terms of agreeing with either belief individually. Those with missing data compared to those without missing data were less likely to have had an HIV test (88% compared to 93%, $p = 0.03$), to be female (49% compared to 39%, $p = 0.05$) and to report a history of injection drug use (76% compared to 61%, $p = 0.02$). Those with missing data were not different from those included in the final model without any missing data on sex risk indicators, educational

TABLE 1. DESCRIPTION OF AFRICAN AMERICANS IN THE SHIELD SAMPLE, BY CONSPIRACY BELIEF RATINGS

	Sample n = 1430 %	Endorse conspiracy beliefs (score <5) n = 322 %	Did not endorse conspiracy beliefs (score ≥5) n = 1108 %	χ^2 , p value
Personal Characteristics				
Completed high school	53.4	47.8	55.0	5.1, 0.02
Depression: CES-D score >15	58.3	59.3	57.9	0.2, 0.66
Has been in prison in the prior 6 months	13.9	14.6	13.7	0.2, 0.69
Gender: Female	38.5	28.3	41.5	18.5, <0.001
Age				
Less than 33	19.7	15.2	20.9	7.3, 0.03
Age 33 to 42	50.9	50.6	51.0	
Age 43 to 67	29.4	34.2	28.1	
Risk Behaviors				
Has injected drugs (lifetime)	61.5	64.6	60.6	1.7, 0.2
More than one sex partner in the prior 3 months	21.0	19.6	21.4	0.5, 0.5
Condom use less half of the time in the prior 3 months	38.7	41.9	37.7	1.9, 0.2

CES-D, Center for Epidemiologic Studies Depression Scale.

attainment, depression status, having been in prison in the prior 6 months, or age group.

Statistical analyses

First, we calculated the percent of the sample who reported each of the personal characteristics and risk behaviors of interest, and tested for differences between those who did and did not endorse conspiracy beliefs (sum score <5) using χ^2 tests. We also examined the unadjusted difference in the percent without a history of HIV testing among those who did and did not endorse conspiracy beliefs. Next we created bivariate and multivariable logistic regression models to examine the relationship of conspiracy beliefs and other characteristics on the dependent variable of not having taken a HIV test. Simultaneous entry of variables in the multivariable model included both the measurement of conspiracy beliefs and potentially important control variables. All statistical analyses were conducted using Stata (version 9, StataCorp, College Station, TX).

Results

Among African American SHIELD participants, 6.8% reported never having a HIV test. The distribution of the responses to the statement "AIDS was started by an experiment that went wrong" was as follows: 24.8% strongly agreed, 19.7% agreed, 17.9% disagreed, and 37.6% strongly disagreed. For the statement "AIDS was created to kill blacks and poor folks," 11.4% strongly agreed, 13.2% agreed, 14.3% disagreed, and 61.2% strongly disagreed. In total, 22.5% of participants had a sum score on the conspiracy beliefs items that was less than five, indicating agreement to the conspiracy beliefs questions, on average. Of those who agreed with conspiracy beliefs on average, 4.0% reported never having an HIV test, while 7.7% of those who did not endorse conspiracy beliefs on average reported never having an HIV test ($\chi^2 = 5.16$,

$p = 0.02$). As shown in Table 1, those who agreed with conspiracy beliefs on average were less likely to have completed a high school education, less likely to be female, and were older. Gender-stratified analyses indicated that there was not a statistically significant relationship of risk behaviors and conspiracy beliefs for males or females in this sample.

Bivariate and multivariable models of the relationship of conspiracy beliefs and demographic factors to HIV testing are reported in Table 2. Controlling for demographic characteristics and HIV risk behavior, the odds ratio of never having had an HIV test is 0.43 for individuals who endorsed conspiracy beliefs on average (sum score <5), compared to individuals who did not endorse the beliefs. Of other participant characteristics, the variables indicating a lifetime history of injection drug use (OR = 0.36), greater depression (OR = 1.61), having a high school education or higher (OR = 0.55), female gender (OR = 0.54), and ages 33 to 42 (OR = 3.99) or 42 to 67 (OR = 3.53) compared to under 33 had statistically significant associations with the likelihood of never having had an HIV test in the multivariable model.

Discussion

Consistent with prior research,¹⁰ we found that men and those with lower educational attainment were more likely to endorse conspiracy beliefs, as well as older individuals. We found that those individuals who believe HIV conspiracies were more likely to have taken an HIV antibody test. This finding may help explain the finding of Clark and colleagues¹² that individuals who hold HIV conspiracy beliefs have a shorter period between infection and diagnosis. Despite the fact that holding these conspiracy beliefs suggests a distrust of governmental institutions, these results indicate that conspiracy beliefs are not an impediment to HIV testing. Consequently, interventions to increase HIV testing in high-risk communities may not require efforts to reduce conspiracy beliefs.

TABLE 2. THE RELATIONSHIP OF HAVING CONSPIRACY BELIEFS, PERSONAL CHARACTERISTICS, AND RISK BEHAVIORS WITH REPORTING NEVER HAVING HAD AN HIV TEST IN LOGISTIC REGRESSION MODELING AMONG AFRICAN AMERICAN PARTICIPANTS IN THE SHIELD STUDY, BALTIMORE, MARYLAND; $N = 1430$

Variable	Bivariate models		Multivariable model	
	Unadjusted odds ratio	95% CI	Adjusted odds ratio	95% CI
Conspiracy Beliefs , score <5 (on average agree)	0.51 ^a	0.28, 0.92	0.43 ^b	0.23, 0.78
Other Personal Characteristics				
Completed high school	0.66 ^c	0.44, 1.00	0.55 ^b	0.35, 0.84
Depression: CES-D score >15	1.38	0.90, 2.12	1.61 ^a	1.02, 2.52
Has been in prison in the prior 6 months	0.77	0.40, 1.47	0.85	0.44, 1.65
Gender: Female	0.65 ^c	0.42, 1.02	0.54 ^b	0.34, 0.86
Age				
Less than 33	Ref.	—	Ref.	—
Age 33 to 42	2.76 ^b	1.35, 5.64	3.99 ^b	1.91, 8.38
Age 43 to 67	2.15 ^a	1.00, 4.64	3.53 ^b	1.57, 7.92
Risk Behaviors				
Has injected drugs (lifetime)	0.48 ^b	0.32, 0.73	0.36 ^b	0.23, 0.56
More than one sex partner in the prior 3 months	0.96	0.58, 1.60	0.96	0.57, 1.62
Condom use less half of the time in the prior 3 months	1.20	0.80, 1.82	1.37	0.89, 2.10

^a0.01 < p ≤ 0.05.

^b p ≤ 0.01.

^c0.05 < p ≤ 0.10.

CI, confidence interval; CES-D, Center for Epidemiologic Studies Depression Scale.

We did not find a significant relationship between risk behaviors for HIV and conspiracy beliefs. Other samples,^{4,11} however, have found that individuals who hold conspiracy beliefs also report more negative attitudes towards condoms, less consistent condom use, and a greater number of sex partners. As many individuals receive HIV tests in medical settings,¹⁵⁻¹⁷ their willingness to get HIV testing potentially provides an important contact with the health care system. Specifically, these visits provide a crucial opportunity to provide culturally sensitive HIV risk behavior education and interventions by health care providers who may earn or have earned the trust of individuals who have a mistrust of larger government and social institutions. Findings from a national survey indicate that many individuals do not recall receiving HIV counseling after receiving a HIV test, including among individuals at high risk of acquiring HIV,¹⁷ indicating that there is potential to expand the frequency and quality²² of counseling services to those receiving HIV tests.

For individuals in HIV care, holding conspiracy beliefs suggest a distrustfulness that could pose a barrier to treatment. Clinicians should be sensitive to the distrust of science among some patients. Consequently, emphasis on scientific findings may not be effective means of persuading patients of the need for safe injecting and safe sex practices or treatment adherence. The degree to which conspiracy beliefs influence HIV treatment and interventions requires further exploration.

While not a primary aim of the present analysis, our study with a sample of inner-city African Americans found that individuals with depression were more likely to have never been tested for HIV, in contrast with a national household sample that found depression was associated with having had an HIV test.¹⁸ This finding in a sample with high rates of risk behavior is concerning and merits further research. While HIV risk behaviors are associated with a greater likelihood of reporting HIV testing in samples of the general U.S. population,^{16,17} we found that injection drug use but not risky sex was associated with HIV testing in our sample. As a greater

proportion of new HIV cases are accounted for by heterosexual transmission,¹ this finding is also concerning and should be further investigated.

There are several limitations to the present study. Drug use, prison, and HIV test data were self-report. Moreover, we did not assess all factors that may have contributed to participants' HIV testing behaviors and to their beliefs about HIV. We also did not examine whether participants actually obtained their HIV test results or accurately understand the meaning of the HIV antibody tests. The degree to which conspiracy belief questions may be subject to reporting biases in survey data collected through face-to-face interviews is not known; however, the use of interviewers recruited from the local community likely had a positive effect on the comfort level for participants to report conspiracy beliefs. Data collection was cross-sectional, and the interpretation is subject to the usual limitations of cross-sectional data. Beliefs are not immutable, and it cannot be assumed that participants felt the same way regarding the origins of HIV at the time of assessment as they did when they received an HIV test. It is unlikely, however, that having an HIV test results in an increase in conspiracy beliefs, and seems more probable that their conspiracy beliefs influence their attitudes towards testing. Future research should explore the relationship of conspiracy beliefs with recency and frequency of HIV testing.

The rate of HIV testing (93%) was high in the present sample, even compared to other samples drawn from populations with high levels of risk behavior. For example, in a sample of inner-city African Americans in Chicago, approximately 75% reported having ever had an HIV test,² and in a national sample 67.1% of those with a lifetime risk factor (including injection drug use or sex with an injection drug user) reported ever having an HIV test.¹⁸ The high rate of testing suggests that the findings have limited generalizability, as the relationship of testing with beliefs and other covariates may be very different for populations with lower rates of testing. However, while our findings may lack general-

izability, the present sample (inner-city African Americans with very high rates of injection drug use and inconsistent condom use) represents a population important to the study of conspiracy beliefs and HIV risk.

The unadjusted prevalence of never having had HIV testing of those who endorse conspiracy beliefs (4.0%) compared to those who do not (7.7%) indicate that, while those who hold these beliefs are significantly more likely to report testing, the difference between groups in the prevalence of testing is not large. The study also made use of a convenience sample of those willing to participate in research. This may result in an underestimate of the prevalence of these beliefs among low-income African Americans. It is possible that those individuals who have the greatest degree of mistrust for the government regarding HIV, such that they would be unwilling to participate in research, would have different attitudes toward HIV testing than those individuals who hold conspiracy beliefs but not strongly enough that it prevents them from participating in research activities.

The present study found that African American individuals in a low-income inner city community who endorse HIV conspiracy beliefs are more likely to have had an HIV test. Further research is needed to understand the consequences and causes of HIV conspiracy beliefs in minority populations.

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