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Authors

Brooks, Ronald A
Allen, Vincent C
Regan, Rotrease
et al.

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HIV/AIDS conspiracy beliefs and intention to adopt preexposure prophylaxis among black men who have sex with men in Los Angeles

Ronald A Brooks[1], Vincent C Allen Jr[2], Rotrease Regan[3], Matt G Mutchler[4,5], Ramon Cervantes-Tadeo[1] and Sung-Jae Lee[6]

Abstract

In the United States, black men who have sex with men (MSM) are the group most affected by the HIV/AIDS epidemic. Pre-exposure prophylaxis (PrEP) is an important new HIV prevention strategy that may help reduce new HIV infections among black MSM. This analysis examined the association between HIV/AIDS conspiracy beliefs and intentions to adopt PrEP among 224 black MSM. The likelihood of adopting PrEP was assessed and more than half (60%) of the study population indicated a high intention to adopt PrEP. HIV/AIDS genocidal and treatment-related conspiracies were assessed using scales previously validated with black MSM. Almost two-thirds (63%) endorsed at least one of eight HIV/AIDS conspiracy beliefs presented. In multivariable analyses, black MSM who agreed with the genocidal or treatment-related conspiracy beliefs scales had a lower intention to adopt PrEP (Adjusted Odds Ratio [AOR] = 0.73, 95% CI = 0.54, 0.99 and AOR = 0.36, 95% CI = 0.23, 0.55, respectively). Our findings indicate that preexisting HIV/AIDS conspiracy beliefs may deter some black MSM from adopting PrEP. We suggest strategies PrEP implementers may want to employ to address the influence that HIV/AIDS conspiracy beliefs may have on the adoption of PrEP among black MSM, a population disproportionately affected by HIV/AIDS.

Keywords

African American, gay, HIV/AIDS conspiracy beliefs, pre-exposure prophylaxis, medical mistrust

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Introduction

In the United States, black men who have sex with men (MSM) are the group most affected by the HIV/AIDS epidemic. In 2014, black MSM accounted for over three-quarters (79%) of all new HIV diagnoses among black males and had the largest percentage (39%) among MSM of all racial/ethnic groups.[1] HIV antiretroviral pre-exposure prophylaxis (PrEP) is an efficacious HIV prevention strategy for high-risk populations that may benefit black MSM.[2–4] However, recent data indicate low uptake of PrEP among black MSM. In data obtained from U.S. pharmacies, PrEP utilization was highest among whites (74%) with a smaller proportion reported for African Americans (10%).[5] These percentages do not reflect the current trend in HIV diagnoses in the U.S. where the rate is highest among African Americans (44.3) and much

[1]Department of Family Medicine, David Geffen School of Medicine, University of California, Los Angeles, CA, USA
[2]Georgia State University Counseling and Testing Center, Atlanta, GA, USA
[3]Department of Medicine, Division of Infectious Diseases, Emory University, Atlanta, GA, USA
[4]Department of Sociology, California State University, Dominguez Hills, CA, USA
[5]Community-Based Research, AIDS Project Los Angeles, CA, USA
[6]Department of Psychiatry and Biobehavioral Sciences, David Geffen School of Medicine, University of California, Los Angeles, CA, USA

Corresponding author:
Ronald A Brooks, UCLA Department of Family Medicine, 10880 Wilshire Blvd, Suite 1800, Los Angeles, CA 90024, USA.
Email: rabrooks@mednet.ucla.edu

lower among white/Caucasians (5.3).[1] In a recent study among PrEP-eligible MSM in San Francisco, PrEP use was lower among black MSM (7.7%) compared with white MSM (22.9%).[6]

Among black MSM, non-mainstream beliefs about the origin and treatment of HIV/AIDS, which mainstream research labels as conspiracy theories, may deter PrEP adoption. These beliefs center on both genocidal conspiracies (e.g. 'AIDS was created by the government to control the black population') and treatment-related conspiracies (e.g. 'People who take the new medications for HIV are human guinea pigs for the government').[7] Multiple studies have documented that high percentages of African Americans endorse HIV/AIDS conspiracy beliefs.[8–11] In a community sample, 70% of African Americans agreed that 'the government is withholding information about the disease from the public.'[11] In another study, 52% of black MSM agreed that 'HIV is a manmade virus.'[9] In medical mistrust research, HIV/AIDS conspiracy beliefs have been identified as barriers to HIV prevention, adherence to antiretroviral therapy, future adoption of HIV preventive vaccines, and associated with negative attitudes toward condoms and high-risk sexual behavior.[8,12–15]

For this brief report, data from a PrEP acceptability study with black MSM[16] were analyzed to assess the association between HIV/AIDS conspiracy beliefs and intention to adopt PrEP. This analysis moves beyond barriers identified in prior research, such as cost, side effects, accessibility, attitudes toward PrEP, and concern with drug resistance,[16–21] to focus on belief in HIV/AIDS conspiracies, a phenomenon prevalent among African Americans, with potential implications for scaling-up PrEP with black MSM.

Methods

A convenience sample of black MSM was recruited in Los Angeles, California to complete an interviewer-administered survey. Participants were recruited from community-based organizations (CBOs) serving black MSM, community presentations, internet postings on Craigslist.org, postings on Facebook pages of CBOs serving black MSM, and participant referrals. Inclusion criteria for the study were African American/black men, 18 years of age or older, HIV-negative by self-report, had sex with a male partner in the prior six months, and resided in Los Angeles County. Prior to administering the study survey each participant was given an information sheet about PrEP that was read aloud to the participant and any questions about PrEP were answered. Participants provided informed consent and were compensated $35 for their participation. A university-based Institutional Review Board approved all study materials. Methods for the study are described in greater detail elsewhere.[16]

Measures

We analyzed demographic characteristics age and education, HIV/AIDS conspiracy beliefs, PrEP adoption intention, and PrEP awareness and use.

HIV/AIDS conspiracy beliefs: Participants indicated how much they agreed or disagreed with eight items from two HIV/AIDS conspiracy beliefs scales (i.e. 'genocidal' and 'treatment-related' conspiracy beliefs) using a 5-point Likert-type scale (1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree). The two scales were adapted from HIV/AIDS conspiracy scales previously validated with black males in the U.S., including black MSM.[7,13,14] The origin of the present HIV/AIDS conspiracy beliefs is based on the story of HIV as a U.S. bioweapon that quickly morphed into a local theory that HIV was created as a bioweapon specifically to harm black people.[22] We derived average scores for both scales and assessed reliability. The five-item genocidal conspiracies scale had excellent internal consistency (Cronbach alpha = 0.85) and the three-item treatment-related conspiracies scale had good internal consistency (Cronbach alpha = 0.71).

PrEP adoption intention: Participants rated the likelihood of using PrEP to prevent HIV infection using a 7-point scale (1 = extremely unlikely to 7 = extremely likely). Data were recoded into a dichotomous variable to signify 'high adoption intention' if a participant reported being 'very likely' or 'extremely likely' to use PrEP and 'low adoption intention' if a participant reported being 'somewhat likely,' 'not sure,' 'somewhat unlikely,' 'very unlikely,' or 'extremely unlikely' to use PrEP.

Statistical analyses

Descriptive statistics were computed for all study variables. Chi square tests assessed associations between PrEP adoption intentions and demographic characteristics, PrEP awareness and use, agreement with individual items from the 'genocidal' and 'treatment-related' conspiracy beliefs scales. Logistic regression bivariate analyses were performed to assess if each HIV/AIDS conspiracy belief scale (i.e. genocidal and treatment-related conspiracies) was related to PrEP adoption intention. Multivariable models were constructed to predict PrEP adoption intention for each scale while adjusting for age and education, which were found to contribute to PrEP adoption intention in prior research.[23–25]

Table 1. Demographic characteristics, agreement with any HIV/AIDS conspiracy beliefs, PrEP awareness and use by PrEP adoption intention (n = 224).

Characteristic	Total population N (%)	PrEP adoption intention	
		High N (%)	Low N (%)
Total sample	224	134 (59.8)	90 (40.2)
Demographic characteristics			
Age in years (M = 33.5, SD = 11.8)			
18–29	114 (50.9)	71 (62.3)	43 (37.7)
30+	110 (49.1)	63 (57.3)	47 (42.7)
Education completed			
≤11th grade	31 (13.8)	20 (64.5)	11 (35.5)
High school	73 (32.6)	46 (63.0)	27 (37.0)
Some college	95 (42.4)	55 (57.9)	40 (42.1)
≥College degree	25 (11.2)	13 (52.0)	12 (48.0)
Agreed with any HIV/AIDS conspiracy beliefs			
Yes	139 (62.9)	84 (60.4)	55 (39.6)
No	82 (37.1)	50 (61.0)	32 (39.0)
Awareness of and PrEP use			
PrEP awareness			
Yes	74 (33.0)	44 (59.5)	30 (40.5)
No	150 (67.0)	90 (60.0)	60 (40.0)
PrEP use			
Yes	0 (0.0)	–	–
No	224 (100.0)	134 (59.8)	90 (40.2)

PrEP: preexposure prophylaxis; M: mean; SD: standard deviation.

Results

A total of 428 individuals were screened for the study. Of those, 289 were eligible and 224 completed the study interview. Among those eligible who did not complete the study interview (n = 65), the primary reason was scheduling conflicts. Sample characteristics distributed by PrEP adoption intention are presented in Table 1. More than half (60%) of the participants indicated a high intention to adopt PrEP. The mean age of participants was 34 years old (standard deviation [SD] = 12). One-third (33%) of participants had heard of PrEP but none had ever used PrEP. PrEP adoption intention did not differ by age, education, PrEP awareness and use, and if participants agreed with at least one HIV/AIDS conspiracy belief.

Agreement with HIV/AIDS conspiracy beliefs

Approximately two-thirds (63%) of participants agreed with at least one of the eight HIV/AIDS conspiracy beliefs presented (Table 1), and almost half (45%) agreed with two or more (data not shown). Close to half (47%) of all participants believed that 'There is a cure for AIDS but it is being withheld from the poor' and 47% believed that 'HIV is a manmade virus' (Table 2). For each conspiracy belief, the percentage of participants who agreed with each statement was larger for participants who indicated a low intention to adopt PrEP, with the exception of the belief, 'HIV was created and spread by the CIA' (Table 2). We noted a statistically significant difference in PrEP adoption intention among participants who agreed with the three items in the treatment-related conspiracy beliefs scale.

Relationship of HIV/AIDS conspiracy beliefs with PrEP adoption intention

In the bivariate logistic regression analysis, participants who agreed with the genocidal or the treatment-related conspiracy beliefs scales had a lower likelihood of reporting a high intention to adopt PrEP (OR = 0.73, 95% CI = 0.54, 0.99 and OR = 0.37, 95% CI = 0.24, 0.56, respectively, Table 3). In the multivariable analyses, the effects of the genocidal and treatment-related conspiracy beliefs scales were tested separately (due to high correlation) while controlling for age and education. In the adjusted multivariable logistic regression analysis, participants who agreed with the genocidal or treatment-related conspiracy beliefs scales were less likely to indicate a high intention to adopt PrEP (AOR = 0.73, 95% CI = 0.54, 0.99 and AOR = 0.36, 95% CI = 0.23, 0.55, respectively, Table 3).

Table 2. Agreement with HIV/AIDS conspiracy beliefs by high and low PrEP adoption intention (n = 224).

HIV conspiracy beliefs	% Agree[a] total population	% Agree, of those who indicated high PrEP adoption intention	% Agree, of those who indicated low PrEP adoption intention
Genocidal beliefs			
There is a cure for AIDS, but it is being withheld from the poor	47.3	42.9	54.0
HIV is a manmade virus	46.6	42.9	52.3
AIDS is a form of genocide against blacks	18.0	14.3	23.6
AIDS was created by the government to control the black population	16.6	14.9	19.1
HIV was created and spread by the CIA	12.4	13.8	10.3
Treatment-related beliefs			
People who take the new medications for HIV are human guinea pigs for the government	21.0	13.7**	31.8
The medicine used to treat HIV causes AIDS	2.7	0.7^{+}	5.7
The medicine that doctors prescribe to treat HIV is poison	9.5	5.3*	16.1

CIA: U.S. Central Intelligence Agency; PrEP: pre-exposure prophylaxis.
[a]Strongly agree or agreed.
$^{+}P = .036$.
*$P = .008$.
** $P < .001$.

Table 3. Bivariate and multivariate logistic regression analysis of high PrEP adoption intention with HIV/AIDS conspiracy beliefs.

	High PrEP adoption intention OR (95% CI)	High PrEP adoption intention AOR[a] (95% CI)
HIV/AIDS conspiracy beliefs – Genocidal subscale[b]	0.73 (0.54, 0.99)*	0.73 (0.54, 0.99)*
HIV/AIDS conspiracy beliefs – Treatment-related subscale[b]	0.37 (0.24, 0.56)$^{+}$	0.36 (0.23, 0.55)$^{+}$

AOR: Adjusted Odds Ratio; CI: confidence interval; PrEP: pre-exposure prophylaxis.
[a]Adjusted for age and education.
[b]Average agreement on scale (1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree)
*$p = .044$.
$^{+}p < .001$.

Discussion

Our findings indicate that beliefs that HIV was invented as a way to systematically harm black people in the U.S., which mainstream researchers label as conspiracy theories, are associated with a lower intention to adopt PrEP among black MSM. These non-mainstream beliefs about the origin and treatment of HIV/AIDS held by some black people in the U.S.[8–11] should be viewed as rational thinking given the legacy of medical mistreatment, and continued racism and discrimination experienced by African Americans within the health care system. In this study, we examined two distinct types of HIV/AIDS conspiracies (treatment-related and genocidal) and both were independently associated with a lower intention to adopt PrEP. Treatment-related conspiracies appear to have a more significant influence, whereas genocidal conspiracies may have a less significant influence on PrEP adoption intentions. In prior research, mistrust of HIV medications was related to lower acceptance of and adherence to antiretroviral therapy among HIV-positive individuals.[13,26,27] In PrEP acceptability research, a barrier to uptake was the concern

that taking an HIV medication when HIV-negative would make one more susceptible to HIV infection because of the medication.[18] Similarly, our findings suggest that preexisting suspicions (in the form of treatment-related conspiracies) or misinformation surrounding HIV medications may influence the adoption of HIV medications as PrEP among black MSM. This suggests a need for accurate, culturally-tailored information on the use of HIV antiretroviral medications for treatment and prevention targeted to this population, as well as measures to address medical mistrust and existing HIV/AIDS conspiracies.

The persistence of HIV/AIDS conspiracy beliefs should be of concern to HIV prevention practitioners and PrEP implementers. In this study, approximately two-thirds (63%) of participants endorsed at least one HIV/AIDS conspiracy and almost half (45%) endorsed two or more conspiracies. These high percentages are consistent with what has been previously reported in studies with African American men, including African American MSM.[9–11,13,14] In the present study, almost half (47.3 and 46.6%, respectively) of the sample endorsed two genocidal conspiracy beliefs: 'There is a cure for AIDS, but it is being withheld from the poor' and 'HIV is a manmade virus.' These findings are consistent with prior studies with African Americans[7,9,11] and may indicate that black MSM hold a strong belief in the government's role in perpetuating the HIV/AIDS epidemic among blacks. The ongoing belief in HIV/AIDS conspiracies reported in this and other studies may derail efforts to implement PrEP with black MSM.

To support PrEP implementation with black MSM, intervention measures at the community, health care system, and individual level are needed to address the lack of trust some African Americans have with the existing health care system and to help dispel the misconceptions this population holds regarding the evolution and continued transmission of HIV in the African American community. These measures should involve CBOs, community members, PrEP advocates, medical providers, and public health practitioners. Trusted CBOs may be able to help improve medical trust among black MSM, particularly regarding the acceptability of PrEP for the population.[28] One strategy may be to employ black MSM as community liaisons to disseminate PrEP information which may be met with skepticism by members of the community.[29] Community liaisons could integrate accurate and culturally-specific messages about PrEP into their existing social network activities and communications with network associates. Community liaisons, particularly those who are using PrEP, may be more trusted than public health practitioners or medical providers. In prior work, we found that facilitators of PrEP adoption included positive testimonials from peers who are using PrEP.[18] In facilitating PrEP uptake, it is important to consider the messengers of PrEP information to black MSM, particularly in a population where medical mistrust and HIV/AIDS conspiracies are prevalent.

Medical trust will be an important part of implementing PrEP with black MSM as the use of PrEP requires regular interactions with medical providers. This should include competency training for medical providers on the influence non-mainstream beliefs about HIV/AIDS (i.e. conspiracy theories) may have on the use of PrEP. In addition, the delivery of PrEP should be done in local, community-based health settings that incorporate support systems such as health educators or peer navigators to improve personal relationships. Prior research indicates that HIV-positive black MSM patients perceive less stigma from HIV care specialists than they do from primary care providers and this may suggest that mistrust may be less likely to occur if PrEP is offered in HIV care settings.[30] Without medical trust, some black MSM may view biomedical prevention strategies such as PrEP with suspicion.

The scaling-up of PrEP will help reduce the rate of new HIV infections among black MSM, but much work is needed to increase the social and cultural acceptability of PrEP in this population.[16] The most recent data indicate that black MSM are adopting PrEP at a lower rate than their white MSM counterparts.[5,6] While there is no clear indication as to why this disparity in uptake exists, the limited awareness of PrEP among black MSM noted in prior PrEP research, coupled with beliefs in treatment-related conspiracies noted in this study, may be contributing factors.[31,32] The lack of awareness suggests the need for greater efforts to develop culturally specific information about PrEP that resonates with the current reality of black MSM and reflects the historical legacy of medical mistrust in the African American community.

The study findings are subject to limitations. The cross-sectional design of the study precludes us from inferring causality. In addition, the study population consisted of a nonprobability sample of black MSM in Los Angeles and, therefore, the findings may not be generalizable to black MSM in Los Angeles or elsewhere. Because PrEP delivery sites were not fully operational at the time of the present study, PrEP adoption intentions were assessed and may not reflect actual uptake behavior. Another limitation of this study is the focus was solely on black MSM. Endorsement of HIV/AIDS conspiracy beliefs has also been evidenced among Latinos in the U.S., another population heavily impacted by HIV/AIDS.[33,34] Future research may want to assess the influence of HIV/AIDS conspiracy beliefs on PrEP uptake among

Latinos and other at-risk marginalized populations in the U.S.

Despite these limitations, our findings contribute to the literature on how the persistence of HIV/AIDS conspiracy beliefs continues to influence HIV prevention efforts in the black community. Our findings also underscore the need to develop PrEP awareness campaigns that are culturally appropriate, but also sensitive to the influence HIV/AIDS conspiracy beliefs may have on PrEP adoption in this population.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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