

The role of faith institutions, and religious and spiritual experiences in HIV diagnosis among Black men who have sex with men

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Impact: What is the payoff to science and/or public health?

This research is significant because 13% of African Americans infected with HIV are unaware of their status. If we do not intervene, an estimated annual 45% of new HIV diagnosis will continue to occur in this group. R/S are central components of culture and influence among African Americans. There are approximately 46 million African Americans in the US and 47% report attending religious services weekly, which means 21.6 million potential agents of influence. Moreover, faith leaders are willing to engage in HIV prevention work in the community and from the pulpit, which can be leveraged in existing or new intervention strategies to end racial disparities in the HIV/AIDS epidemic. In the long-term, results from these data will inform an R01 grant to develop and test R/S-based interventions to reduce HIV incidence among African American MSM in the US.

Specific Aims:

Background and Significance

African Americans lag behind Whites at every step of the HIV care continuum^{1,2} and racial disparities persist. In 2015, the rate of new HIV diagnosis was 8 times higher compared to Whites³ (44.3 vs 5.3 per 100,000). Thirteen percent of African Americans living with HIV are unaware of their HIV status⁴ and an estimated fifteen percent are aware of biomedical technologies, specifically Pre-exposure Prophylaxis (PrEP) for HIV prevention⁵—an orally used technology that can substantially decrease sexual transmission of HIV^{6,7}. African American MSM will have a 50% lifetime risk of infection compared to 9% risk for White MSM⁸. Reducing these alarming disparities require addressing the social and structural factors that influence HIV prevention and treatment outcomes.

Religion is characterized as “an organized systems of beliefs, lifestyles, rituals, symbols, and institutions⁹, and religiousness characterizes the degree of intensity of one’s institutional beliefs and religious practices¹⁰. Spirituality defines one’s personal experience or relationship with God or a higher power¹¹. R/S are separate constructs¹⁰ that are well-established social determinants of health^{12,13}, and can be leveraged to end HIV and AIDS as a public health threat¹⁴. More than 67% of studies in two systematic reviews found at least one aspect of R/S was associated with better HIV clinical outcomes, including CD4+ and antiretroviral medication adherence^{15,16}. Faith institutions predominantly serving African Americans and R/S are important for HIV prevention because historically both played central roles in civic, social, and political movements that improved the lives of this group in the US¹⁷. Today, church attendance rates are still consistently higher among African Americans¹⁸. Faith leaders have significant influence in shaping individual’s attitudes and social norms about HIV¹⁹⁻²¹ and they are willing to engage in HIV prevention programs and research²²⁻²⁵.

However, despite the critical role of faith institutions and R/S in the lives of African Americans: (1) studies to date mostly focused on the association with HIV-risk behaviors (e.g., unprotected anal intercourse) and the influence of structural factors²⁶. (2) Consequently, the role of R/S in association with HIV diagnosis and incidence is understudied. Next, the current evidence on faith institutions, R/S and HIV among African Americans, especially among MSM, is inconclusive. Some studies found a protective relationship between individual religiousness²⁷ as well as faith institutions that foster environments that openly discuss HIV-related topics, in association with HIV-related behaviors²⁸ (e.g., testing), in the general population. Some research among AA gay/bisexual and MSM documented that some dimensions of R/S and the institutional environment facilitated psychological resources that buffered HIV risk^{29,30}. On the

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other hand, some studies suggested that R/S were barriers to HIV prevention overall (e.g., negative ideologies about homophobia)³¹, which increased HIV risk behaviors (e.g., unprotected anal intercourse) among AA MSM³².

This proposal will address some of these debates as well as contribute novel evidence on this topic by quantifying the relationships between multiple R/S measures and late HIV diagnosis (defined as CD4+ count <200 at baseline diagnosis) and HIV incidence AA MSM.

Religion and health theories^{33,34} and minority stress theory³⁵ guide the following hypotheses:

H₁: Higher spirituality is significantly associated with lower odds of being diagnosed with HIV late, and with lower HIV incidence.

H₂: Higher spirituality is associated with lower odds of being diagnosed with HIV late, and with lower HIV incidence, through mediating pathways of lower internalized homophobia, lower internalized HIV stigma, and higher social support.

H₃: Religious denomination (e.g., Catholic, Baptist, Muslim) will significantly modify the relationship between spirituality and late HIV diagnosis, and HIV incidence. Specifically, any protective relationship will be weaker among individuals who attended in their childhood, denominations with high levels of homonegativity.

Study Design and Analysis:

Secondary data are from the HPTN 061, the largest prospective study among Black MSM in the US, conducted between 2009 and 2010. Men were recruited from Atlanta, Boston, Los Angeles, New York City, San Francisco and Washington, DC. A total of n=1553 were enrolled and n=872 remained at 12-month follow-up. Extended details of the study are published elsewhere^{36,37}.

Spirituality is measured (at baseline) via two subscales the spiritual activities (5-items, alpha 0.83) and spiritual beliefs (4-items, alpha 0.90)³⁸. *Late HIV diagnosis* is defined according to CDC guidelines for Stage-3 HIV, as having a CD4+ count < 200 at initial diagnosis, regardless of whether the person was previously aware of their infection. *HIV incidence* (defined as seroconversion from HIV-uninfected status at baseline to HIV-infected status at either 6-month or 12-month follow up)

Power Analysis was calculated using G*Power 3.1.9.2³⁹. The effect size was informed by a study that assessed spiritual and religious experiences and HIV testing among Black MSM in Dallas and Houston, Texas⁴⁰. Parameters include an adjusted odds ratio (aOR) of 1.27, α err prob=0.05, Power (1- β err prob) =0.90, and a continuous distribution of the predictor (a composite religion variable). The sample to detect a similar effect size is n=726, which is less than n=872 at follow-up in HPTN 061. The effect size for ART adherence among the HIV-infected population was informed by a study that assessed religious practices and beliefs among an HIV-infected clinic sample from San Diego, California⁴¹. Parameters include an aOR of 1.89, α err prob=0.05, Power (1- β err prob) =0.90, and a continuous distribution of the predictor (a composite religion variable). The sample to detect a similar aOR is n=140, which is less than n=348 HIV-infected (new + previous) in HPTN 061

Statistical Analysis: I will use factor analysis techniques in the Structural Equation Modeling (SEM) framework (e.g. latent variables) to develop a continuous measure of spirituality,

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because the measure consists of multiple items distributed along a Likert-type scale. Next, I will also use SEM techniques such as “Path Analysis” to test the hypotheses. Potential covariates will include age, gender, socioeconomic status, self-rated health, health insurance, recruitment city, and other variables evaluated for inclusion in multivariable models at $p < .10$. SEM allows for direct statistical inference of indirect effects. Effect modification will be assessed at $\alpha p < 0.10$. Other psychosocial factors such as depressive symptoms and substance use, as well as other religious measures will be included in the models as necessary but are not the focus in this current study.

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