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Testing our FAITHH: HIV stigma and knowledge after a faith-based HIV stigma reduction intervention in the Rural South

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ABSTRACT

Eliminating racial/ethnic HIV disparities requires HIV-related stigma reduction. African-American churches have a history of addressing community concerns, including health issues, but may also contribute to stigma. We developed and pilot tested a faith-based, anti-stigma intervention with 12 African-American churches in rural Alabama. We measured HIV-related stigma held by 199 adults who participated in the intervention (individual-level) and their perception of stigma among other congregants (congregational-level). Analyses of pre- and post-assessments using a linear mixed model showed the anti-stigma intervention group reported a significant reduction in individual-level stigma compared with the control group (mean difference: −.70 intervention vs. −.16 control, adjusted $p < .05$). Findings suggest African-American churches may be poised to aid HIV stigma-reduction efforts.

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Introduction

African Americans represented 12% of the population in the United States (U.S.), but comprised 45% of individuals with new HIV diagnoses in 2015 (Centers for Disease Control and Prevention, 2016). Racial/ethnic disparities in rates of new infections, continuation in care, and mortality have persisted for most of the epidemic and have worsened over time (Kaiser Family Foundation, 2014). Consequently, reducing new HIV infections and improving health outcomes for people living with HIV (PLWH), especially among disproportionately affected populations, has received increased attention as a public health imperative (Office of National AIDS Policy, 2015).

Within the African-American community, there has been increased emphasis on the potential role of African-American churches in reducing HIV-related disparities. Historically, African-American churches have been considered an integral part of their communities, serving as a source of knowledge, hope, help, and healing. Also, churches have a rich history of driving social change locally and nationally, and being involved in efforts to combat diseases such as breast cancer, diabetes, and cardiovascular disease (Campbell et al., 2007; Lancaster, Carter-Edwards, Grilo, Shen, & Schoenthaler, 2014; Newlin, Dyess, Allard, Chase, & Melkus, 2012).

In an effort to leverage the collective influence of African-American churches, the National Association for the Advancement of Colored People (NAACP) challenged African-American faith leaders to embrace HIV prevention as a social justice issue and actively engage in prevention and advocacy efforts (NAACP, 2013). Whether prior to or in response to such calls to action, some African-American churches have created HIV ministries or integrated some form of HIV education and/or support services into their existing health ministries (Derose et al., 2011; Pichon & Powell, 2015). Moreover, in recent years, some African-American churches have partnered with researchers to develop and scientifically evaluate programs tailored to the needs of their congregations and surrounding communities (Sutton & Parks, 2013).

Although advances in engaging and mobilizing African-American churches are encouraging, significant needs remain. HIV stigma is a key social determinant of HIV transmission and an important intervention target (Grossman & Stangl, 2013). HIV stigma has been described as a social process through which one's social standing is harmed by negative attitudes and beliefs

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about PLWH (Parker & Aggleton, 2003), potentially serving as an underlying cause of adverse health outcomes (Hatzenbuehler, Phelan, & Link, 2013). A recent study estimating the prevalence of internalized HIV stigma in the U.S. using data from a national sample of patients in HIV care showed 79% of PLWH endorsed at least one stigmatizing belief about themselves (Baugher et al., 2017). Reducing HIV stigma can negatively affect PLWH's quality of life, including poorer mental health or treatment adherence for example (Katz et al., 2013; Rueda et al., 2016; Vanable, Carey, Blair, & Littlewood, 2006). Additionally, HIV stigma may prevent individuals at risk for HIV from being tested (Mahajan et al., 2008).

Yet, research on stigma-reduction interventions in the U.S. is limited. Two recent reviews identified more than 60 studies of stigma-reduction interventions, 11 of which were in the U.S. (Sengupta, Banks, Jonas, Miles, & Smith, 2011; Stangl, Lloyd, Brady, Holland, & Baral, 2013). Additionally, few stigma-reducing interventions exist for faith-based settings. Although the body of faith-based HIV prevention research is growing, it is largely descriptive, often does not assess or directly address HIV-related stigma, and primarily reports on intervention or program satisfaction or process outcomes rather than attitudinal or behavior outcomes. To date, only two published efficacy studies report on changes in attitudes or behaviors among African-American congregants regarding HIV stigma, neither of which significantly reduced HIV stigma (Berkley- Patton et al., 2013; Derose et al., 2016).

Therefore, we sought to add to the literature by reporting results from a small, pilot study conducted with African-American churches in rural Alabama to test whether participation in a faith-based, stigma-focused intervention reduced HIV-related stigma compared with either a general knowledge-based curriculum or a brochure (control groups).

Methods

Study design

The primary aim of the Project Faith-based Anti-stigma Initiative towards Healing HIV (FAITHH) study was to examine the comparative effectiveness of a faith-based stigma-focused intervention versus a knowledge-based HIV curriculum or a brochure. Twelve churches were randomly assigned to one of three conditions using a 1:1:1 allocation ratio: (1) FAITHH anti-stigma condition, (2) knowledge-based condition, or (3) control condition (passive placement of brochures at church). Study team members randomized churches to a condition using a sequentially numbered opaque sealed envelopes procedure after all participating churches were identified.

Participants

We enrolled 12 churches in rural Alabama. Rurality was defined by the Office of Rural Health Policy's (ORHP) Rural-Urban Commuting Area (RUCA) criteria (ORHP, 2015). The principal investigator (PI) identified four ministerial liaisons who introduced the PI to pastors at local churches. Churches were recruited using a variety of methods: referral from the ministerial liaisons, research team, denominational leaders, or during visits with churches in the area. The PI met with each interested pastor to explain the study. Some pastors were not comfortable addressing HIV in their churches and declined participation, potentially due to concerns about furthering negative stereotypes about African-Americans (Cohen, 1999) and/or conflicts between prevention approaches and beliefs about sexuality, sexual behavior, and drug use (Derose et al., 2011; Sutton & Parks, 2013). A list of 12 churches and two alternates was compiled. Alternate churches became participants when a church on the primary list could not participate or was not responsive after three follow-up phone calls.

Pastors selected a church representative to coordinate recruitment and intervention implementation logistics. Congregants were recruited via brochure, verbal announcements at church, and/or word-of-mouth. The PI verbally screened interested individuals using four eligibility criteria: (1) are you affiliated with the participating church, (2) are you at least 19 years of age, (3) do you self-identify as African-American, and (4) are you able to give informed consent? Congregants provided informed consent before participating. All protocols were approved by the PI's Institutional Review Board and funding agency's project determination process.

Intervention descriptions

FAITHH anti-stigma condition

The FAITHH intervention was developed from several sources, predominately an anti-stigma curriculum from the Christian Council of Ghana (CCG) adapted for use based on feedback from African-American pastors and PLWHs in Alabama, and the NAACP's "Black Church & HIV: A Social Justice Imperative" Activity Manual (NAACP, 2013). The CCG's guide contained seven modules with faith-based and anti-stigma content for HIV prevention; the NAACP Manual contained faith-based and social context and justice content for HIV prevention.

The adapted 8-module FAITHH intervention was designed to teach facts about HIV, highlight negative effects of stigma, and encourage action to combat stigma and advocate for PLWH, primarily through the use of guided discussions, role plays, and other activities

providing opportunities for personal reflection. National-, state-, and county-level epidemiologic data, vignettes, and scenarios were tailored to align with the social context in rural Alabama based on formative research conducted prior to intervention adaptation. The development of the FAITHH curriculum and content for each module is described in detail elsewhere (under review). The intervention was approximately eight hours (approximately one hour per module) and was delivered in a one-day or multi-session format to accommodate churches' scheduling needs. A member of the research team co-facilitated sessions at the church with a ministerial liaison (pastor) at three churches or the first lady at one church. The PI conducted a one-day training on the intervention content and session facilitation.

Knowledge-based condition

Materials used for the knowledge-based HIV curriculum came from the Alabama Department of Public Health, AIDS service organizations (ASOs) in Alabama, the CDC, Project Strengthening Access via Education and Diligence (SAVED; a CDC Capacity-Building Project), and slides, videos, and information known to the study team. Topics included the history and epidemiology of HIV in the U.S., risk behaviors associated with HIV transmission, and treatment, testing, and diagnosis. Sessions were co-facilitated by two members of the research team and lasted 2–3 hours.

Control condition

Brochures for the control arm incorporated HIV facts and faith-related messages appropriate for churches, and was adapted from the "Faith in Action" model (Rhode Island Public Health Institute, n.d.). Brochures were placed in a designated area in the church lobby.

Measures

We assessed HIV-related stigma as the primary outcome, HIV knowledge as the secondary outcome, and demographic information for participants.

HIV-related stigma

Stigmatizing attitudes towards PLWH were measured using Visser and colleagues' HIV-Related Stigma parallel scales (Visser, Kershaw, Makin, & Forsyth, 2008). The 12-item scales assessed participants' endorsement of stigmatizing beliefs about PLWH. Participants indicated whether they agreed, disagreed, did not know, or refused to answer. Sample statements included, "I would not like someone with HIV to be living next door." Participants reported personal attitudes (individual-level stigma) and their perception of others in their congregation or community (community-level stigma). The potential range was 0 to 12, where higher scores indicated higher levels of stigmatizing attitudes.

HIV knowledge

Basic HIV knowledge was assessed using a 32-item, multiple-choice survey based on an unpublished UNAIDS instrument and two self-developed items assessing knowledge about HIV disparities (Appendix A). Sample items included: "HIV is present in blood, sexual fluids, and sweat," and, "In what region of the U.S. is the rate of new infections of HIV increasing the greatest?" Participants received one point for each correct response. Potential scores ranged from 0 to 32, with higher scores indicating more knowledge.

Demographics

Several items were included to assess factors such as age, education, income, and marital status.

Data collection

Congregants in the stigma-based and knowledge-based conditions completed a 15-minute survey before beginning the intervention and after completing the last intervention module. Time between pre- and posttesting varied by church because the intervention was delivered as either a single-session or multi-session format to accommodate churches' scheduling needs. However, posttesting was completed within 8 weeks of pretesting, and the time between pre- and posttesting did not vary systematically. For the control condition, the same 15-minute survey was completed prior to placement of the brochures and one month later. Surveys were administered using audio computer-assisted self-interview technology (ACASI) to address potential literacy issues (Schroeder, Carey, & Vanable, 2003). In some instances, a paper copy was administered due to a participant's preference or technical issues with laptops.

Data analysis

To test the primary research hypothesis, analyses were conducted to examine differences in the change in total scores for individual-level and community-level measures of HIV-related stigma between the FAITHH anti-stigma condition and the knowledge-based and control conditions. Regarding the secondary hypothesis, differences in knowledge increases in the FAITHH and knowledge-based conditions compared to the control condition were investigated. Proc Mixed procedures in SAS/STAT® software (Littell, Milliken, Stroup,

Wolfinger, & Schabenberger, 2006) were used to build linear mixed models of each outcome as the dependent variable. Due to violation of normality of residuals assumptions for linear mixed models, rank analysis of variance was used to examine the effects of time (pre- and post-intervention) and intervention condition (Quade, 1967). Outcomes were transformed to rank scores by Proc rank using SAS, then used as dependent variables in mixed models with fixed factors including time (pre-intervention and post-intervention), group (FAITHH anti-stigma, knowledge-based, and control) and interactions between time and group. Church ID was included in the model as a random effect to account for heterogeneity among churches. The correlated error structures were specified as "unstructured" using repeated statement because there was no prior assumption about the covariance matrix of residuals. We included demographic factors (age, income, education, marital status) in the models as covariates. Estimates for planned pairwise comparisons were adjusted to account for multiple comparisons using the Bonferroni method.

Results

Sample characteristics

Demographic characteristics are provided in Table 1. Participants included 199 congregants from 12 churches, ages 19 to 87 years ($M = 51.1$, $SD = 16.9$); 164 completed pre- and post- assessments. Attrition did not differ significantly by condition. The majority of the sample was female (74.5%) and self-identified as African-American (99.5%). Forty-one percent were married. Many (59.3%) had postsecondary education, 32.2% of whom earned college or graduate degrees; 27.7% completed high school or obtained a graduate equivalency diploma (GED). Only 13.1% had less than a high school diploma. Seventy-six percent had full-time employment. However, 33.7% reported annual incomes of less than $11,000.

Baptists represented the largest church denomination (43.2%). Nearly half (47.2%) of the sample held any type of leadership position in their church. More than half (57.6%) had ever been tested for HIV. The mean HIV knowledge score was 19.3 (SD = 4.7). Perceived community-level HIV stigma was higher ($M = 8.0$, SD = 3.9) than individual-level stigma ($M = 1.8$, SD = 2.1).

Table 1. Baseline characteristics for congregants from participating churches in rural Alabama, Project FAITHH[a], 2014–2016 ($N = 199$).

Demographics	
Age, Mean (SD)	51.1 (16.9)
Race/Ethnicity (%)	
African-American	99.5
African-American, non-Hispanic/Latino	91.9
African-American, Hispanic/Latino	7.6
Native American	0.5
Female (%)	74.7
Employed, full-time (%)	75.6
Education (%)	
Less than high school	13.1
High school or GED	27.6
Some college or trade school	27.1
College graduate	15.1
Graduate school	17.1
Marital Status (%)	
Single	36.2
Married	40.7
Separated or divorced	11.6
Widowed	9.5
Living with partner or not specified	2.0
Church Denomination (%)	
Baptist	43.2
African Methodist Episcopal	10.1
Christian Methodist Episcopal	17.6
Pentecostal	10.6
Other	18.6
Income (%)	
Less than 11,000	33.7
11,000–20,000	21.6
21,000–40,000	25.4
40,000–60,000	11.6
More than 60,000	7.7
Ever tested for HIV (%)	57.6
HIV Stigma & Knowledge Measures	**Mean (SD)**
Individual-Level HIV Stigma Scales	
Full (α = .74)	1.80 (2.08)
Blame[b] (α = .69)	.73 (1.22)
Interpersonal distancing[b] (α = .61)	1.13 (1.29)
Community-Level HIV Stigma Scales	
Full (α = .90)	7.95 (3.85)
Blame[b] (α = .85)	3.85 (2.10)
Interpersonal distancing[b] (α = .84)	4.08 (2.05)
HIV Knowledge Scale (α = .79)	19.28 (4.68)

[a]Faith-based Anti-stigma Initiative towards Healing HIV.
[b]6-item subscale; α = alpha; SD = standard deviation.

Intervention effects on HIV-related stigma and knowledge

We investigated whether the FAITHH anti-stigma intervention reduced HIV-related stigma compared with a general knowledge-based HIV curriculum and a control condition (Table 2). The linear mixed model controlling for covariates detected an interaction between time and intervention condition for individual-level (personally-held) HIV stigma (F (2, 252) = 4.02, $p = .02$). There was a greater decrease in mean rank individual-level stigma scores from baseline to posttest for the FAITHH anti-stigma condition compared to the control condition (F (1, 252) = 5.18, adjusted $p < 0.05$), but not the knowledge-based condition (F(1, 252) = 0.13, adjusted $p = 1$). Differences were not detected for the congregation-level stigma measure.

Additionally, we examined whether the FAITHH anti-stigma or knowledge-based intervention participants reported greater knowledge gains than the

Table 2. Adjusted mean rank in individual-level HIV stigma and HIV knowledge by intervention condition, Project FAITHH[a], 2014–2016.

Outcome	Time	Condition	Adjusted mean rank	SE	F value for the interaction effect	*p*
Individual-Level HIV Stigma	Pre	3	165.96	22.04	$F(2, 252) = 4.02$	0.02
		2	163.51	20.86		
		1	176.25	21.67		
	Post	3	173.94	21.94		
		2	130.73	20.4		
		1	149.02	20.93		
HIV Knowledge	Pre	3	151.55	19.13	$F(2, 294) = 11.60$	<0.01
		2	145.84	16.50		
		1	121.93	17.97		
	Post	3	143.82	19.68		
		2	201.56	17.24		
		1	187.54	18.34		

[a]FAITHH = Faith-based Anti-stigma Initiative towards Healing HIV.

controls. There were significant increases in mean rank HIV knowledge scores for both the FAITHH stigma-focused ($F(1, 294) = 20.62$, adjusted $p < .01$) and knowledge-focused curricula ($F(1, 294) = 14.51$, adjusted $p < .01$) from baseline to posttest when compared to the control condition.

Discussion

The primary purpose of this pilot study was to examine the efficacy of a faith-based anti-stigma intervention, FAITHH, versus a knowledge-based curriculum and control (brochure) condition in reducing HIV-related stigma among African-American church congregants in rural Alabama. Despite a small sample size, we observed a reduction in individual-level (personally-held) HIV stigma among those participating in the stigma-focused FAITHH intervention compared with those in the control condition. Additionally, greater knowledge gains were noted among those in the stigma-focused FAITHH intervention and the knowledge-based intervention compared with the control condition.

The approach employed for the FAITHH intervention may shed light on its potential to reduce personally-held HIV stigma. Interactive exercises where participants reflected on their own non-HIV related experiences with stigma in order to better understand the experiences of PLWH were used to cultivate empathy and compassion. Additionally, having the pastor or first lady actively involved in delivering the content may have encouraged congregants' receptivity to messages of compassion toward PLWH. This approach may be useful and should be explored further.

We did not observe significant reductions regarding perceptions of stigmatizing attitudes of congregation or community members. Individuals may have changed their own thoughts and attitudes after participating in the intervention, but did not have reason to believe such shifts had occurred for the entire congregation. Coupling individual-level activities with broader congregational-level strategies (e.g., incorporating HIV-related sermons) that have been employed in other stigma-reduction interventions (Berkley- Patton et al., 2013; Derose et al., 2016) may be advantageous. However, to date, changing attitudes has proven difficult. Neither of the published efficacy studies of multilevel interventions yielded significant changes in HIV stigma among African-American congregants (Berkley- Patton et al., 2013; Derose et al., 2016); although Derose et al. (2016) reported effects for Hispanic/Latino congregations.

Our findings can contribute to both faith-based HIV prevention and stigma-reduction intervention research efforts. The existing body of faith-based HIV prevention research is mainly comprised of descriptive rather than quantitative investigations of changes in attitudinal or behavioral outcomes, which are requisite for evaluating efficacy. Moreover, broader research to develop effective HIV stigma-reduction interventions is limited, and has focused primarily on internalized stigma for PLWH, or targeted healthcare providers or family members and friends of PLWH (Sengupta et al., 2011; Stangl et al., 2013). However, changes in HIV-related stigma and discrimination will require involvement of those who may not be directly affected by HIV.

Finally, the percent of participants ever tested for HIV was only 57.6%. CDC recommends HIV testing at least once for individuals 13 to 64 years old, or more frequently for those with certain risk factors (CDC, 2006), so increased HIV testing efforts in these communities may be warranted. Social and structural factors, including access to care or distrust of the healthcare system, provide possible explanations for suboptimal testing rates in our sample of rural African Americans. We highlight this finding because identification and timely linkage to HIV care can improve health and decrease the likelihood of unknowingly transmitting HIV (Cohen et al., 2016; Samji et al., 2013).

Limitations

Caution should be exercised when interpreting findings from this small, pilot study. First, the sample sizes were small, which limited statistical power. Next, reported levels of personally-held stigmatizing beliefs were low, an issue not unique to our study (e.g., Berkley-Patton et al., 2013; Coleman, Tate, Gaddist, & White, 2016; Visser et al., 2008). Social desirability bias may have contributed to floor effects for self-reported measures of stigmatizing beliefs. Additionally, the stigma-based and knowledge-based conditions were not time-matched and there was some variation in the time span for implementation in order to accommodate each church's scheduling needs. Although implementation challenges are common, lacking standardization may have affected pre- and post-assessments. Lastly, measures of fidelity for the intervention content and format were not included.

Conclusions and future directions

Churches provide an important setting for stigma-reduction efforts because of their geographic and social positioning in many African-American communities. Findings from this pilot study of the interactive, group-based FAITHH intervention highlighted the potential to reduce stigma among congregants by educating and cultivating empathy fow PLWH using content consistent with church doctrine. Research may be advanced by replicating this study, or integrating FAITHH within a multilevel approach, and addressing aforementioned limitations.

Despite challenges, increasing efforts to develop interventions that reduce HIV-related stigma is essential. Without a paradigm shift, HIV disparities will likely persist, and potentially worsen, in the decades to come. However, with focused attention on addressing HIV stigma, we can make significant advances toward preventing infections and deaths and improving quality of life for PLWH in our generation.

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Appendix A HIV/AIDS Knowledge Test

Multiple choice

(1) Which ethnic/racial group makes up the largest group living with HIV/AIDS?
   (a) Latinos
   (b) Asian/Pacific Islander
   (c) White
   (d) African American

(2) In what region of the U.S is the rate of new infections of HIV increasing the greatest?
   (a) The South
   (b) The Midwest
   (c) The Northeast
   (d) The West

(3) What does the acronym HIV stand for?
   (a) Hemo-insufficiency virus
   (b) Human immunodeficiency virus
   (c) Human immobilization virus

(4) What does the acronym AIDS stand for?
   (a) active immunological disease syndrome
   (b) acquired immune deficiency syndrome
   (c) acquired immunological derivative syndrome
   (d) acquired immunodeficiency syndrome

(5) What is the main means of HIV transmission worldwide?
   (a) unprotected heterosexual sex
   (b) homosexual sex
   (c) intravenous drug use
   (d) mother-to-child transmission

(6) Spread of HIV by sexual transmission can be prevented by:
  (a) abstinence
  (b) practicing mutual monogamy with an uninfected partner
  (c) correct use of condoms
  (d) all of the above
(7) Women are most likely to contract HIV through:
  (a) unprotected heterosexual sex
  (b) injecting drug use
  (c) contaminated blood
(8) HIV can be contracted from:
  (a) condoms
  (b) kissing
  (c) mosquito bites
  (d) drinking from the same glass as an infected person
  (e) sharing a spoon with a person living with HIV
  (f) sharing a toothbrush with someone who is living with HIV
  (g) all of the above
  (h) none of the above
(9) Risk of contracting HIV is increased by:
  (a) being infected with another sexually transmitted infection (STI)
  (b) having poor nutrition
  (c) having a cold
(10) Pregnant women infected with HIV:
  (a) can reduce chances of transmitting HIV to her unborn child by maintaining a low viral load and staying in good health
  (b) can take medication to reduce the risk of mother-to-child transmission during childbirth
  (c) all of the above

Fill-in-the blank

(11) List the four main body fluids that, when infected, may transmit HIV.
(12) List the four main ways HIV is transmitted.

True/False

(1) If a person has HIV, they will always develop AIDS.
(2) HIV is present in blood, sexual fluids and sweat.
(3) Abstaining from (not having) sexual intercourse is an effective way to avoid being infected with HIV.
(4) When a person has AIDS, his or her body cannot easily defend itself from infections.
(5) A person can get the same sexually transmitted infection more than once.
(6) There is a cure for AIDS.
(7) If a pregnant woman has HIV, there is a still a chance she will not pass it to her baby.
(8) A person can get HIV infection from sharing needles used to inject drugs.
(9) Many people with sexually transmitted infections, including HIV, do not have symptoms.
(10) HIV can be easily spread by using someone's personal belongings, such as a toothbrush or a razor.
(11) A person can look at someone and tell if he or she is infected with HIV or has AIDS.
(12) It is possible to avoid becoming infected with HIV by having sexual intercourse only once a month.
(13) A condom, when used properly, provides excellent protection against sexually transmitted infections, and can prevent transmission of HIV.
(14) An effective vaccine is available to protect people from HIV infection.
(15) A person can be infected with HIV for 10 or more years without developing AIDS.
(16) You can get HIV by kissing someone who has it.
(17) A person can be infected with HIV by giving blood in an approved health facility.
(18) Ear-piercing and tattooing with unsterilized instruments are possible ways of becoming infected with HIV.
(19) A person can get HIV by being bitten by a mosquito.
(20) A person can avoid getting HIV by eating well and exercising regularly.