



Examining Faith-Based HIV Prevention Interventions in the United States: A Scoping Review

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Abstract

Faith-based health promotion is a promising approach for delivering tailored and culturally salient HIV prevention programs in the United States. However, since approval of pre-exposure prophylaxis (PrEP) in 2012, no review of faith-based HIV prevention interventions has been published in the peer-reviewed literature. This review aims to synthesize literature describing HIV prevention interventions housed in faith communities in the US, with a focus on examining inclusion of PrEP-related content. Synthesis of literature was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis scoping review extension. Databases reviewed included PubMed, Sociological Abstracts, PsycINFO, and Cumulative Index of Nursing. Two independent reviewers screened studies, determined inclusion, and extracted relevant data based on the Reach, Effectiveness, Adoption, Implementation, Maintenance framework for intervention planning/evaluation. In total, 16 studies met inclusion criteria and were included in the review. All identified faith-based HIV prevention interventions were implemented by Christian organizations. Interventions primarily focused on abstinence, reducing substance use, reducing stigma, and promoting HIV testing. Very few included studies had meaningful content related to PrEP. Partnerships with faith communities often involved interventions being designed, housed, and evaluated within their specific religious organizations. This review discusses the significance and challenges of implementing HIV prevention interventions in partnership with faith communities and highlights existing gaps in faith-based PrEP promotion programming in the US. Findings show opportunities to broaden involvement of diverse faith organizations in HIV prevention intervention efforts and to scale up inclusion of PrEP-focused education and services.

Keywords HIV prevention interventions · Faith-based health promotion · United States · Scoping review · Health disparities

An estimated 39 million people worldwide were living with human immunodeficiency virus (HIV) as of 2022 (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2023), including over 1.1 million people in the United States (US; Centers for Disease Control and Prevention

[CDC], 2023a). A variety of prevention interventions have been utilized in the US, including tailored prevention interventions for specific populations (e.g., syringe service programs for individuals who inject drugs [PWID]) (Adimora & Auerbach, 2010; Beyrer, 2021; Kelly et al., 1997), and, most recently, the use of pre-exposure prophylaxis (PrEP) for people at increased risk of HIV (Baeten, 2018). PrEP is a cornerstone of the US Ending the HIV Epidemic initiative, with programs such as Ready, Set, PrEP receiving federal support to increase access to and use of PrEP by individuals at high risk of acquiring HIV (Fauci et al., 2019; Rubin, 2020).

PrEP is an efficacious HIV prophylaxis tool, but uptake remains low among individuals who are at high-risk for HIV in the US, and significant disparities exist in terms of both PrEP access and use nationwide. For example, use of PrEP is low in the Southeastern US (Sullivan et al., 2019),

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the region with the highest incidence of new HIV cases annually. More troubling still are racial/ethnic disparities in both PrEP access (Kamitani et al., 2020) and in HIV incidence. Notably, Black and Hispanic/Latine individuals are far more likely to be diagnosed with HIV in their lifetime than non-Hispanic White individuals, with Black individuals constituting 12% of the US population but accounting for 40% of new HIV diagnoses in 2021 (CDC, 2023b). Likewise, Hispanic/Latine individuals constitute 18% of the US population but accounted for 29% of new HIV diagnoses in the same period. People who use injection drugs are also at elevated risk (CDC, 2023b). Experiences of intersectional marginalization further increase HIV disparities. For instance, while men who have sex with men (MSM) remain the US population that is most affected by HIV, significant within-population disparities exist. Recent data show that, compared to other MSM groups, Hispanic/Latino and Native Hawaiian/Other Pacific Islander MSM are less likely to receive any HIV medical care after testing positive for HIV and Black/African American MSM are less likely to be virally suppressed (CDC, 2023b).

Many factors contribute to the increased risk of HIV among minoritized groups in the US. These factors include significant HIV-related stigma (Earnshaw et al., 2015; Nyblade et al., 2009); systemic barriers including poor access to medical care, prevention, and testing (Ransome et al., 2016); medical mistrust, based in centuries of racialized medical violence (Saha et al., 2010); and disparities in education and prevention resources accessible to marginalized communities (Badolato et al., 2022; Wilson et al., 2015). Understanding the factors that shape these disparities is important to creating informed and responsive interventions for HIV prevention among the populations who face increased HIV risk. The many factors underlying HIV health disparities can be understood through Bronfenbrenner's socioecological model (1979), which recognizes the interconnecting factors within and beyond an individual that shape health and well-being. Health disparities in HIV prevalence must be understood as multifaceted, bound in systems and in cultures to which interventions must respond to be successful.

Implementation Science and HIV Prevention

To best address the multifaceted HIV disparities in the US, novel and innovative approaches to implementing interventions preventing HIV acquisition are called for. Scholarly research related to prevention and health promotion has often failed to meet pressing health needs, with one frequently cited estimate of the “implementation gap”—the time between the production of intervention knowledge and

the implementation of this knowledge in communities—being persistently approximately 17 years long (Institute of Medicine, 2001). To address critical public health concerns such as the ongoing HIV epidemic, it is important to reduce the lag between innovation and implementation to prevent HIV transmission, decrease incidence of HIV, and to provide implementation tools to mitigate existing health disparities. Lamin et al. (2015) identify four sequential and iterative processes for implementation science in the process of HIV prevention: (1) identifying bottlenecks and gaps, (2) developing and implementing strategies, (3) measuring effectiveness and efficiency, and (4) utilizing results.

One way to address an identified gap in health promotion is through the development of culturally tailored health interventions for populations at high risk for a particular health condition. Community-focused interventions, especially when rooted in strengths of a given community or cultural space, are also more likely to increase the sustainability and acceptance of an intervention (Barrera et al., 2017), as well as support greater effectiveness (Torres-Ruiz et al., 2018) compared to “one-size-fits-all” approaches. Interventions that draw on pre-existing strengths and resources can help bolster resilience within communities that experience HIV disparities. To do so, developing an understanding of implementation and service outcomes associated with particular culturally tailored interventions (e.g., acceptability, costs, effectiveness, equity) is critical (Proctor, 2011). This information can help support culturally-tailored health promotion, which has the potential to both increase engagement and appropriateness of an intervention and to shorten the lag between knowledge production and action (Joo & Liu, 2021).

Culturally Tailored HIV Prevention

Importantly, individuals and communities that experience HIV disparities in the US (e.g., Black communities and individuals, MSM communities and individuals) have demonstrated immense resilience despite a long history of adversity (Chae et al., 2021). One example of cultural tailoring that has been used with marginalized communities in the US, including those at high-risk for HIV, is faith-based health promotion (Wingood et al., 2013). The use of faith-based health promotion has particularly prominent among Black individuals (Wilcox et al., 2010, 2013) and Hispanic/Latine individuals in the US (Schwingel & Galvez, 2016), who express a greater spiritual orientation on average than White and non-Hispanic/Latine counterparts (Lincoln & Mamiya, 1990). Health promotion interventions that use faith-based tailoring have the potential to connect with participants' values (Resnicow et al., 1999) and have demonstrated effectiveness among minoritized groups experiencing a broad

range of health disparities (Campbell et al., 2007; Derose et al., 2019).

Faith-Based HIV Prevention

There is a complicated history of involvement by faith communities in HIV prevention efforts in the US, with efforts ranging from resistance to HIV related efforts to engagement in HIV prevention since the late 1990s (Cornelius & Appiah, 2016). Partnering with public health agencies like the CDC, faith-based organizations have housed effective HIV prevention interventions (Francis & Liverpool, 2009), especially among populations facing HIV disparities. Francis and Liverpool found in their 2009 literature review of extant faith-based HIV prevention interventions for Black US residents that interventions tended to be individually focused and demonstrated effectiveness in reducing factors associated with HIV risk. While some congregations actively reached out to MSM and PWID, this was not widespread across the interventions included in the review. Stigma around sexuality and drug use often limited engagement. Programs that did succeed were usually progressive congregations or those in urban areas with high HIV prevalence. Complex relationships between individual religiosity and spirituality and uptake of HIV preventive behaviors have been demonstrated (Vigliotti et al., 2020), with varying effectiveness of interventions (i.e., formal and informal) based on factors including religious coping, culturally based stigma, values, sense of community, and messages from faith communities and leaders. Understanding the impact of these factors, which span across the systems included in Bronfenbrenner's (1979) socioecological model, may help inform efforts to promote prevention, especially in the wake of new preventative options like PrEP. However, since the initial US approval of PrEP in 2012, no review of faith-based HIV prevention interventions in the US has been published in the peer reviewed literature.

Given that the landscape of HIV prevention has changed since the advent of PrEP and the importance of culturally tailored health interventions, especially in minoritized communities, this scoping review seeks to describe the literature on faith-based HIV prevention interventions. Importantly, no review of faith-based HIV prevention interventions has been published that has been published in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines, the standard for a comprehensive systematic approach to reviews (Tricco et al., 2018). The aim of this review was to assess the development, implementation, and outcomes of faith-based HIV prevention interventions in the US using the Reach, Effectiveness, Adoption, Implementation, Maintenance (RE-AIM) framework. The RE-AIM framework is a framework

used to evaluate the impact of public health interventions through focus on specific domains (i.e., reach, effectiveness, adoption, implementation, maintenance) (Glasgow et al., 1999). RE-AIM has been used to guide implementation-focused reviews through formatting searches of interventions (Glasgow et al., 1999). This review aimed to compile information about faith-based HIV prevention interventions in the US with consideration for how these efforts have been implemented both before and after the promotion of PrEP in the US.

Methods

This scoping review was pre-registered with Open Science Framework (Frary, 2023). It was designed, conducted, and reported in accordance with guidelines outlined in the Preferred Reporting Items for Scoping Review (PRISMA-ScR) statement (Tricco et al., 2018) and the methodological framework for scoping reviews (Arksey & O'Malley, 2005). The search strategy was developed in collaboration with a university research librarian. Information was identified by searching the following bibliographic databases: Sociological Abstracts, PsycINFO, PubMed, and CINAHL. A grey literature search was also conducted using Web of Science (Clarivate) and ProQuest. Results were restricted to those published in English. There were no restrictions on the date published. See Fig. 1 for a visual overview of the search terms.

A priori inclusion and exclusion criteria were generated by the first and second author. Studies were included if they describe an intervention that is (a) focused on HIV prevention, (b) housed within or carried out in partnership with a faith community (e.g., church, mosque), (c) located in the US, and (d) published in a peer-reviewed journal. Inclusion was not limited by year of publication. Studies were excluded if they are (1) descriptive studies (e.g., case reports) or protocol papers, (2) reviews/meta-analysis/letter to the editors, or (3) book chapters/conference papers.

The review next utilized the RE-AIM framework (Glasgow et al., 1999) to extract data from included studies. The RE-AIM framework provides an outline for data extraction that is helpful for reviewing intervention literature, as it describes important components of intervention development and implementation from a lens of factors understood within implementation science to connote important design and implementation considerations. In addition to the data extracted following RE-AIM guidance, additional information to be included in the review included primary target prevention goals (e.g., condom use, PrEP) and demographic data of included participants and faith communities (e.g.,

Religion	faith* OR church* OR religio* OR spiritual* OR mosque* OR temple* OR synagogue* OR Islam OR Muslim* OR Jewish OR Judai* OR Christ* OR Hindu* OR Jain* OR Sikh* OR Buddh* OR Baha'i OR Catholic* OR Protestant* OR Methodis* OR Baptis* OR Lutheran OR Anglican OR Wesleyan OR African Methodist Episcopal* OR Zion* OR non-denominat* OR Pentacost* OR evangel* OR Episcopal* OR Presbyterian* OR adventis* OR apostol* OR Copt* OR Nestor* OR minister* OR priest* OR pastor* OR imam* OR rabbi* OR interfaith* OR prayer*
HIV	"HIV" OR "HIV Infections" OR "acquired immune deficiency syndrome*" OR "acquired immunodeficiency syndrome*" OR "acquired immuno deficiency syndrome*" OR "acquired immunodeficiency syndrome*" OR "AIDS" OR "HIV" OR "hiv1" OR "hiv-1" OR "hiv2" OR "hiv-2" OR "hiv aids" OR "human immune deficiency virus" OR "human immunodeficiency virus" OR "human immuno deficiency virus" OR "human immunodeficiency virus" OR "PWH" OR "PLW" OR "plhiv*" OR "plwh*"
Prevention (including PrEP)	(pre-exposure prophylaxis OR preexposure prophylaxis OR "PrEP" OR HIV pre-exposure prophylaxis OR HIV preexposure prophylaxis OR pre-exposure antiretroviral prophylaxis OR pre exposure antiretroviral prophylaxis OR pre-exposure chemoprophylaxis OR preexposure chemoprophylaxis OR anti-HIV prophylaxis OR prevention)
Intervention	(intervention* OR program*)

Fig. 1 Keywords included in database searches

age, gender, racial/ethnic status, region, information regarding congregational makeup).

The original search was conducted in December of 2023. EndNote was used to remove duplicates. Titles and abstracts were uploaded to Rayyan and remaining duplicates were removed. The remaining titles and abstracts were independently screened by the first two reviewers (SGF & FS) and assessed for inclusion based on a priori criteria. The full text of articles that could not be excluded based on title and abstract were acquired. Inclusion of these articles was then assessed based on the full text. See Fig. 2 for a PRISMA flow diagram of the study selection. The reviewers then independently extracted each of the included studies, read each article, and independently extracted data that were then entered into a data extraction spreadsheet.

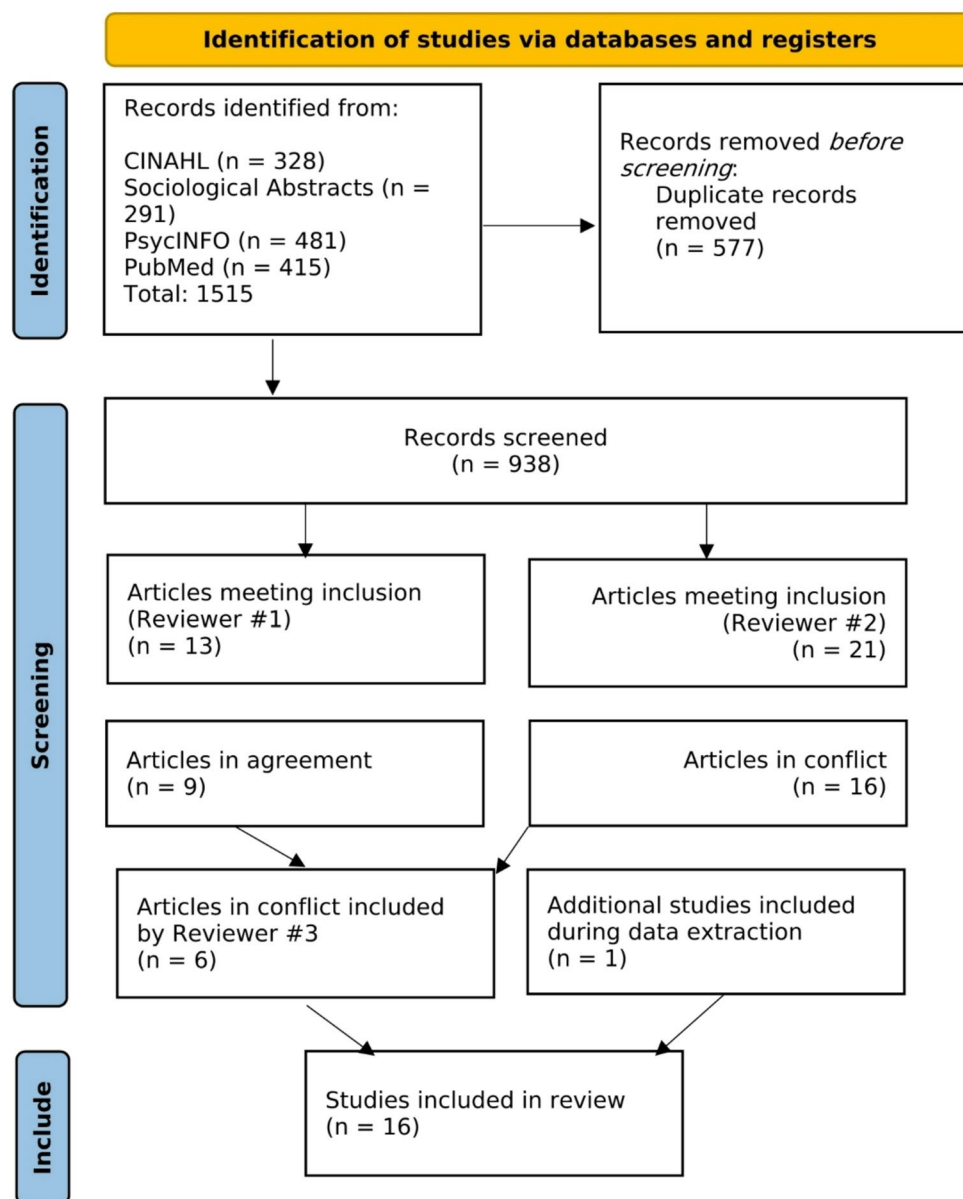
Results

The initial database searches yielded 1515 articles. The use of multiple databases yielded 577 duplicates which, when removed, resulted in 938 unique articles. The abstract of each of the unique articles was examined by the reviewers to assess for inclusion criteria. This preliminary assessment

resulted in the further exclusion of 913 articles. Full texts were acquired for each of these articles and again examined independently by the reviewers, who blindly judged these articles for inclusion. Common reasons for the exclusion of articles based on this preliminary search included: (1) survey-based data (that were not included in descriptions of interventions), (2) non-empirical research or commentary, or (3) interventions were not based in the US. Finally, discrepancies between the two reviewers' judgments were resolved by a third reviewer (SQ). One additional article was added during a review of literature cited in the included studies. This process culminated in 16 total peer-reviewed papers included in the synthesis.

Description of Studies

Of the 16 studies and manuscripts included in this review, all were published during or after 2001. Half of the included studies ($n=8$, 50%) were published during or after 2013 (i.e., in the post-PrEP era). Faith-based communities represented in the included studies were all Christian churches or Christian community-based organizations ($n=16$). Of the included studies, common primary targets for health promotion included promoting abstinence, decreasing stigma

Fig. 2 PRISMA flow chart of scoping review process

surrounding HIV, increasing HIV testing, and reducing risk or harm through behavioral change. Of the studies included in this review, none included PrEP use or knowledge as a primary outcome. One study mentioned PrEP as a secondary part of their intervention's educational component (Lanzi et al., 2019) but noted that their discussion of PrEP was incomplete and that in future interventions they intended to extend this section to better discuss the difference between PrEP and vaccination. Theoretical frameworks used to develop interventions included but were not limited to theories of spiritual community and/or action, Bronfenbrenner's socio-ecological theory (1979), theories related to behavioral change processes (e.g., theory of planned behavior and diffusion theory; Ajzan et al., 1991; Rogers, 1995). Interestingly, at least two of the theoretical frameworks used and

cited were fully or partially developed collaboratively with faith community input for the study itself (Lanzi et al., 2019; Berkley-Patton et al., 2013). Several studies did not specify a guiding theoretical framework for the intervention. See Table 1 for a list of included articles.

Reach

The Reach domain of the RE-AIM framework describes the characteristics of participants or communities who were the targets of the HIV prevention interventions. The number of participants included ranged from 65 to >1000. The scope of involvement as participants differed based on the aims of the studies themselves; some studies included community members who were provided with single-event church

Table 1 Information about included studies

Study title	Author	Year published	Target health concern (primary)	Theoretical frameworks reported (if any)
Religious groups as diffusers of HIV antibody testing and prevention messages (Lightfoot et al., 2001)	Lightfoot, Marguerita; Rotheram-Borus, Mary Jane; Towns, Belinda; Cline, Timothy R.; Webber, Douglas; Murphy, Debra A.; Tsai, Lan Feng	2001	Training church volunteer's HIV prevention knowledge and utilization	Popular opinion leader model (Kelly et al., 1997); diffusion theory (Rogers, 1995)
Community-based participatory research to prevent substance abuse and HIV/AIDS in African-American adolescents. (Marcus et al., 2004)	Marcus, Marianne; Walker, Thomas J.; Swint, Michael; Page Smith, Brenda; Brown, Cleon; Busen, Nancy; Edwards, Thelissa; Liehr, Patricia; Taylor, Wendell; Williams, Darryal; von Sternberg, Kirk.	2004	HIV/AIDS prevention and substance abuse prevention among adolescents	Community-Based Participatory Research; Stringer's (1999) "Look, Think, Act" intervention development and implementation tool
Evaluation of a faith-based culturally relevant program for African American substance users at risk for HIV in the southern United States (MacMaster et al., 2007)	MacMaster, S. A.; Jones, J. L.; Rasch, R. F. R.; Crawford, S. L.; Thompson, S.; Sanders, E. C., II	2007	Reducing substance use and HIV/AIDS risk behavior among African American/Black people who use substances	Okundaye, Smith, and Lawrence-Webb (2001) understanding of spirituality; NIDA/NADR Outreach Model
Knowledge and Perception of STI/HIV Risk Among Rural African-American Youth: Lessons Learned in a Faith-Based Pilot (Baldwin et al., 2008)	Baldwin, Julie A.; Daley, Ellen; Brown, Emma J.; August, Euna M.; Webb, Candace; Stern, Rikki; Malow, Robert; Devieux, Jessy G.	2008	Increasing knowledge and perceived risk of STI/HIV among rural African American/Black youth	Not reported.
YOUR Blessed Health: a faith-based CBPR approach to addressing HIV/AIDS among African Americans (Griffith et al., 2010)	Griffith, D. M.; Pichon, L. C.; Campbell, B.; Allen, J. O.	2010	Reducing HIV stigma among faith leaders and adults; increasing intentions to abstain from sex/ have protected sex among 11- to 19-year-old African American youth	Not reported.
A case study in collaborating with Atlanta-based African-American churches: a promising means for reaching inner-city substance users with rapid HIV testing (Whiters et al., 2010)	Whiters, D. L.; Santibanez, S.; Dennison, D.; Clark, H. W.	2010	Increase HIV testing	Not reported.
YOUR Blessed Health: an HIV-prevention program bridging faith and public health communities (Whiters et al., 2010)	Griffith, D. M.; Campbell, B.; Allen, J. O.; Robinson, K. J.; Stewart, S. K.	2010	Increasing community awareness, testing	Not reported.
Assessment of HIV-related stigma in a US faith-based HIV education and testing intervention (Berkley-Patton et al., 2013)	Berkley-Patton, J. Y.; Moore, E.; Berman, M.; Simon, S. D.; Thompson, C. B.; Schleicher, T.; Hawes, S. M.	2013	Decreasing HIV stigma	Not reported.
Comparative Effectiveness of a Faith-Based HIV Intervention for African American Women: Importance of Enhancing Religious Social Capital (Wingood et al., 2013)	Wingood, Gina M. and Robinson, LaShun R. and Braxton, Nikia D. and Er, Deja L. and Conner, Anita C. and Renfro, Tiffaney L. and Rubtsova, Anna A. and Hardin, James W. and DiClemente, Ralph J.	2013	Increasing condom use	Religious capital (Maselko et al., 2011)
Effects of a Pilot Church-Based Intervention to Reduce HIV Stigma and Promote HIV Testing Among African Americans and Latinos (Derose et al., 2016)	Derose, Kathryn; Griffin, Beth; Kanouse, David; Bogart, Laura; Williams, Malcolm; Haas, Ann; Florez, Karen; Collins, Deborah; Hawes-Dawson, Jennifer; Mata, Michael; Oden, Clyde; Stucky, Brian	2016	Reducing HIV stigma and medical mistrust; increasing HIV testing	Contact hypothesis (Pettigrew & Tropp, 2006)

Table 1 (continued)

Study title	Author	Year published	Target health concern (primary)	Theoretical frameworks reported (if any)
Church-Based HIV Screening in Racial/Ethnic Minority Communities of California, 2011–2012 (Williams et al., 2016)	Williams, M. V.; Derose, K. P.; Aunon, F.; Kanouse, D. E.; Bogart, L. M.; Griffin, B. A.; Haas, A. C.; Collins, D. O.	2016	HIV testing	Not reported.
An HIV testing intervention in African American churches: Pilot study findings (Berkley-Patton et al., 2013)	Berkley-Patton, Jannette; Thompson, Carole Bowe; Moore, Erin; Hawes, Starlyn; Simon, Stephen and Goggin, Kathy; Martinez, David; Berman, Marcie; Booker, Alexandria	2016	HIV testing	Not reported (used resources from “Taking It to the Pews HIV Tool Kit”, (Berkley-Patton et al., 2010)
Testing our FAITHH: HIV stigma and knowledge after a faith-based HIV stigma reduction intervention in the rural south (Payne-Foster et al., 2018)	Payne-Foster, Pamela; Bradley, Erin L. P.; Aduloju-Ajijola, Natasha; Yang, Xin; Gaul, Zaneta; Parton, Jason; Sutton, Madeline Y.; Gaskins, Susan	2018	HIV-related stigma	Not reported.
Feasibility and Outcomes of an HIV Testing Intervention in African American Churches (Berkley-Patton et al., 2019)	Berkley-Patton, Jannette Y.; Thompson, Carole Bowe; Moore, Erin; Hawes, Starlyn; Berman, Marcie; Allsworth, Jenifer; Williams, Eric; Wainright, Cassandra; Bradley-Ewing, Andrea; Bauer, Alexandria G.; Catley, Delwyn; Goggin, Kathy	2019	Self-reported receipt of HIV testing among church and community members	Theory of Planned Behavior (Ajzen, 1991); socioecological model (Bronfenbrenner, 1979)
Love with No Exceptions: A Statewide Faith-Based, University-Community Partnership for Faith-Based HIV Training and Assessment of Needs in the Deep South (Lanzi et al., 2019)	Lanzi, Robin G.; Footman, Alison P.; Jackson, Edward; Araya, Brook Y.; Ott, Corilyn; Sterling, Ronald D.; Davis, Tammy R.; Kaiser, Kathryn A.	2019	Address HIV knowledge and stigma	Community engagement team jointly developed the training model using a “Head, Heart, Feet” framework (developed in conjunction with community)
A Multilevel Intervention With African American Churches to Enhance Adoption of Point-of-Care HIV and Diabetes Testing, 2014–2018 (Wingood et al., 2019)	Wingood, Gina M.; Lambert, Danielle; Renfro, Tiffaney; Ali, Mohammed; DiClemente, Ralph Joseph	2019	HIV testing	Social ecological model (Bronfenbrenner, 1979)

outreach, while others included participants in follow-ups, trainings, or post-test assessments of understanding. Of the 15 included articles, 7 articles (43.4%) did not report attrition, typically because they used a single dose design without follow-up; in the remainder, attrition was reported to varying degrees depending on the study.

Frequent inclusion criteria reported included racial demographics either of participants or of the faith communities that were the target of the intervention ($n=9$); age of participants; behavioral risk factors; or membership in a specific faith community or communities. The most frequently used methods for participant recruitment were convenience sampling and snowball sampling, typically done through congregations or community outreach by churches. Some studies used more than one of these methods or other methods. See Table 2 for additional details on reach of included interventions.

Effectiveness

The Effectiveness domain of the RE-AIM framework describes the outcomes of the intervention, including its effectiveness and whether the effects were statistically and/or clinically significant. Studies assessed outcomes in several ways, including subjective measures (e.g., participant-reported testing behaviors, sexual behaviors, substance use behaviors, perceived stigma), assessments of HIV-related knowledge through written tests, or, for organizational-level interventions, the quantity of testing or health events across a time period. Some interventions that used mixed methods or qualitative methods to assess their results could not be empirically assessed; likewise, some could not report significant or non-significant findings because of study design (e.g., no pre-test, no pre-established comparison group, etc.). Others, however, reported either significant changes in individual or organizational behavior (generally in the direction of the intended outcome, with the exception of

Table 2 Data extracted related to the “Reach” domain of the RE-AIM framework for reviewing health interventions

Study	Mean age in years	Number recruited (intervention group)	Number retained (intervention group)	Study inclusion criteria	Sampling methods
(Lightfoot et al., 2001)	29	801	345	Included church congregants participating in neighborhood canvassing; recruited two weeks prior to canvassing date.	Recruitment of church congregants at annual canvassing event.
Marcus et al., 2004	Between 13–14 years old	Not described	34	African American adolescents in sixth, seventh, or eighth grade	recruitment from existing church-going adolescents (convenience sampling)
MacMaster et al., 2007	39.8	163	Attrition figures not reported.	African American/Black substance users	Participant self-selection after recruitment information disseminated via outreach workers, informal networks of friends and family members, or Metro Can participants.
Baldwin et al., 2008	14.95	73	40	13 - 19 year old Black youth who completed pre and post test measures	Convenience sampling (adolescents selected by pastors to be peer educators)
Griffith et al., 2010	not reported	Varied by organization; 245 total attendees.	Attrition figures not reported.	11- to 19-year-old African American young people	Recruitment within participating congregations and in outreach ministry efforts
Whiters et al., 2010	No mean provided; ranged from <18 to 89 years, most being between 25 and 55 years.	1947	Attrition figures not reported.	Homeless Black substance users in Atlanta.	Flyer distribution at venues (stores, laundromats, gas stations, restaurants, etc.) throughout the community.
Griffith et al., 2010	not reported.	Intervention “reached 1,833 people directly, and 4,000 indirectly, across the 12 churches”.	Attrition figures not reported.	not reported	Congregational recruitment and community outreach through churches themselves.
Berkley-Patton et al., 2013	age 18 - 29 <i>n</i> = 58 (25%); age 30 - 49 <i>n</i> = 91 (39%); age 50 - 64 <i>n</i> = 84 (36%)	235	93	Aged 18–64, willing to participate in 3 survey assessments, willing to provide 2 phone numbers.	Church members recruited by study staff during and after church services; community members recruited during outreach ministry events.
Wingood et al., 2013	24.57 years old (SD = 4.09)	65	62	African American woman between 18 to 34 years old; reporting unprotected vaginal intercourse with a male partner during the past 180 days; being unmarried and not living with a male sexual partner; not being pregnant or planning pregnancy; attending church services at a Black church; providing written informed consent.	Pulpit and video announcements at church, advertisements on the church website, on-site study recruiters, posters distributed at women’s conferences, and word of mouth.
Derosé et al., 2016	40.2	1022	Attrition figures not reported.	Not described.	Ministers gave sermons related to HIV to churchgoers. Churchgoers were sampled before and after services by researchers stationed at churches.
Williams et al., 2016	Ranged from <18 to 81 years, most being 40 to 49 years (24.8%).	323	Attrition figures not reported.	Inclusion criteria for churches: in Long Beach area, having >70% African American or Latino congregants, a typical Sunday attendance of at least 100 people, and the church had conducted few HIV-related activities previously; sample pulled from churches meeting these criteria.	Recruitment from the congregations of five churches in Long Beach, CA.

Table 2 (continued)

Study	Mean age in years	Number recruited (intervention group)	Number retained (intervention group)	Study inclusion criteria	Sampling methods
Berkley-Patton et al., 2016	42.3 [SD = 13.5]	235	127 at 6 month follow up	Screened on a first-come, first-served basis, eligible if they were aged 18 to 64 and either: (a) a church member (attending church $\geq$ once/month) or (b) a community member receiving church outreach ministries ($\geq$ 4 times/year).	convenience sampling (from participating churches and the communities the churches interacted with through out-facing ministry)
Payne-Foster et al., 2018	51.1	199	164	Affiliation with the participating church; at least 19 years of age; self-identifies as African-American; able to give informed consent.	Churches were recruited using referral from the ministerial liaisons, research team, denominational leaders, and study visits. Congregants recruited via brochure, church announcements, word-of-mouth.
Berkley-Patton et al., 2019	age 18 - 29 n = 58 (25%); age 30 - 49 n = 91 (39%); age 50 - 64 n = 84 (36%)	235	93	Aged 18–64, willing to participate in 3 survey assessments, willing to provide 2 phone numbers.	Church members recruited by study staff during and after church services; community members recruited during outreach ministry events.
Lanzi et al., 2019	55.6	146	146	Clergy or laity at five locations throughout the Alabama AME district participating in research.	Not specified.
Wingood et al., 2019	47.9	130 church leaders and 193 attendees	Not reported.	Leaders of nondenominational African American churches in Atlanta, Georgia, interested in offering point-of-care HIV and HbA1c diabetes testing at health fairs and that could identify six to seven church leaders to implement the intervention.	Church advisory board contacted 50 potentially eligible churches to determine their eligibility to participate and recruit participation.

Baldwin et al., 2008) or reported results that were not statistically significant. See Table 3.

Adoption

The Adoption domain of the RE-AIM framework describes the intervention's contextual supports, partners, or other features impacting how readily it was adopted by communities surrounding it. One study did not specify a geographic region where participants were located other than the US; among those studies that did report regional information, the Southeast ($n=8$, 50%), and Midwest ($n=5$, 31.3%) were both frequently represented, in addition to the Western US ($n=2$, 13.3%).

A high proportion of the churches, faith communities, and/or faith leaders approached for the studies described tended to agree to participate. The majority of these groups ($n=14$, 87.5%) played a part in the development of the intervention itself. For example, some organizations and faith leaders directly contributed to the interventions' designs ($n=13$, 81.3%), implementation ($n=8$, 50%), recruitment ($n=5$, 31.3%), or were otherwise involved. See Table 4.

Implementation

The Implementation domain of the RE-AIM framework describes the factors that characterized the program's implementation, including details of the intervention as it was situated within the community. Several interventions were situated as either ongoing organizational interventions or one-time interventions, making dose and frequency of the interventions challenging to quantify. The primary ways that churches were involved in interventions were through trainings or talks led by church health liaisons or ministers ($n=11$, 68.8%) and through hosting intervention components within church space. Members of churches that were involved usually received some sort of training or guidance from the research team ($n=11$, 68.8%) that was sometimes co-developed with faith leaders. Dose and frequency of interventions varied widely, with some interventions having single administrations ($n=3$, 18.8%), some having a set number of interventions occurring more than once ($n=6$, 37.5%), and the remainder varying based on the implementation decision-making of the hosting churches. See Table 5 for additional details.

Table 3 Data extracted related to the “Effectiveness” domain of the RE-AIM framework for reviewing health interventions

Study	Measures of primary outcome	Significant change in primary outcome (yes/no)	Direction of change among intervention group	Magnitude of change
Lightfoot et al., 2001	The frequency of talking to anyone regarding HIV prevention in the previous 90 days across several domains.	Yes	The trained condition had a higher probability of talking about HIV/AIDS prevention and testing after the training than the comparison condition.	Significantly higher probability of talking about HIV/AIDS prevention after the training than the comparison condition, (OR = 2.185, 95% CI = [1.39–3.43]); Significantly higher probability of talking about HIV antibody testing after the training than the comparison condition, (OR = 4.133, 95% CI = [2.402–7.111]).
Marcus et al., 2004	Self-report measure (developed by grant agency) of knowledge and attitudes regarding HIV/AIDS and substance use, as well as other socioeconomic predictive factors (e.g., perceived school performance, parental and peer influence)	Cannot be ascertained.	cannot be ascertained (no pre-testing).	Cannot be ascertained.
MacMaster et al., 2007	Measures of risky substance use, psychosocial functioning, and STI/HIV status.	Yes	Reductions in both substance use and HIV risk behaviors were observed.	Decreases in substance use of at least 63% depending on substance.
Baldwin et al., 2008	Knowledge was assessed through pre and post test.	Yes and no (depending on outcome definition).	Awareness of information significantly increased in adult-led group but not in peer-led group; perceived risk of STIs by participants in peer led group increased.	cannot be ascertained.
Griffith et al., 2010	Qualitative interviews.	cannot be ascertained.	Increased community awareness.	cannot be ascertained.
Whiters et al., 2010	Number of HIV tests provided.	cannot be ascertained.	Provided rapid HIV testing for 1,947 individuals.	cannot be ascertained.
Griffith et al., 2010	Qualitative interviews.	cannot be ascertained.	Increased community awareness.	cannot be ascertained.
Berkley-Patton et al., 2013	HIV stigma items, adapted from national surveys and based on pre-intervention focus group findings.	No	HIV stigma mean did not significantly differ between experimental groups regardless of follow-up.	cannot be ascertained.
Wingood et al., 2013	Consistent condom use (defined as self-reported condom use during every episode of vaginal intercourse in the 90 days prior to the 3- and 6-month follow-up visits).	Yes (although not necessarily compared with comparison group)	Decreased likelihood of condomless sex and increased abstinence.	45% less likely to report never using condoms in the past 30 days during follow-up than at baseline (adjusted odds ratio = 0.55; $p = 0.039$); increase in the mean number of weeks abstinent (mean difference = 7.37; $p = 0.002$).
Derose et al., 2016	HIV stigma 12-item scale; HIV mistrust 7 item scale (subjective; both scales developed by the researchers based on previous studies)	Yes and No (depending on churches sampled)	The Latino Catholic intervention church showed a significant decrease between baseline and follow-up in both HIV stigma and mistrust.	Catholic church: effect size change = -0.16 ; 95% CI -0.25 , -0.06 for HIV stigma, -0.15 for HIV mistrust; 95% CI -0.24 , -0.05 . Pentacostal church: effect size change = -0.38 for HIV stigma; 95% CI -0.71 , -0.05 ; -0.56 for HIV mistrust; 95% CI -0.86 , -0.27 .
Williams et al., 2016	Increased HIV testing; the number of cases of previously undetected HIV infection.	Not reported	The percentage of people who had ever been tested for HIV was lower among the church-based testing participants (45.7%) than among SPA 8 residents (56.5%).	Cannot be ascertained.

Table 3 (continued)

Study	Measures of primary outcome	Significant change in primary outcome (yes/no)	Direction of change among intervention group	Magnitude of change
Berkley-Patton et al., 2016	Increased HIV testing.	Yes (although not necessarily compared w comparison group)	HIV testing increased among participants.	Findings indicated intervention participants were 2.2 times more likely to receive an HIV test than comparisons at 6 months.
Payne-Foster et al., 2018	HIV-related stigma: stigmatizing attitudes towards PLWH were measured using Visser et al.s' HIV-Related Stigma parallel scales (Visser et al., 2008)	Yes	There was a significant reduction in individual-level stigma compared with the control group.	Mean difference: -0.70 intervention vs. -0.16 control, adjusted $p < 0.05$
Berkley-Patton et al., 2019	Self-reported receipt of HIV testing behaviors measured using items adapted from national surveys and our pilot studies	Yes	Participants reported higher rates of testing in both follow-ups and were more likely than control participants to have received an HIV test at their church at both follow-ups.	Higher rates of testing in the last 6 and 12 months than control participants at the respective study follow-ups (6 months: 47% vs. 28%, $p = 0.001$; 12 months: 59% vs. 42%, $p = 0.008$); more likely than control participants to have received an HIV test at their church at 6 months (41% vs. 9%, $p < 0.001$) and 12 months (54% vs. 15%, $p < 0.001$).
Lanzi et al., 2019	Increasing HIV-related knowledge as measured by HK-18 and HK-10 (Talwar & Abd Rahman, 2015)	Yes	Participants demonstrated increased knowledge of HIV risk, prevention.	The mean increase in the HK-18 scores was 2.3, SD = 3.4, $t(145) = 8.09$, $p < 0.001$. The mean increase in the HK-10 scores was 0.1, SD = 2.2, $t(145) = 0.565$, $p = 0.573$.
Wingood et al., 2019	The organizational-level outcome was the number of health fairs hosted; The leadership-level outcome was the number of social justice activities conducted by church leaders; The individual-level outcome was receipt of point-of-care testing.	Yes	Increased health fair frequency; increased social justice initiatives led by church leadership; increases in point-of-care testing.	Church leaders increased social justice activities (4.0 activities at baseline vs. 4.7 activities at follow-up); 193 church attendees received health services (56.6%, $n = 109$, received a rapid point-of-care HIV test, $p = 0.012$).

Maintenance

The Maintenance domain of the RE-AIM framework describes the long-term sustainability or durability of the intervention. Several studies ($n=7$, 43.8%) did not report maintenance data, typically because they did not collect follow-up data or more than single-time-point outcomes. Some studies measured knowledge or stigma in a pre-test and immediate post-test assessment ($n=2$, 12.5%) but did not collect data about how these scores changed over time. Other studies had follow-up assessments (typically at 3, 6, and/or 12 months increments) to observe variation in the observed effects from the intervention ($n=7$, 43.8%). See Table 6 for more information on maintenance characteristics of included interventions.

Of the studies included in this review, only one published after PrEP was approved for use in the US (Lanzi et al., 2019) gathered data related to PrEP knowledge or promotion. The study did not explicitly solicit perspectives about

PrEP but included information about PrEP in its trainings offered to faith community members prior to focus groups. Participants in their qualitative responses identified confusion about the difference between PrEP and a “vaccine” for HIV (which does not exist; an item related to vaccines for HIV was included as a pre-test question to assess existing knowledge prior to trainings). No data regarding the impact of stigma, faith tradition, or other factors were gathered. Lanzi et al. note that further education and research regarding PrEP-related knowledge is called for.

Discussion

The HIV epidemic in the US remains a serious public health concern, and the health disparities among racialized and minoritized groups are alarming. Tailored health promotion interventions, including HIV prevention interventions, tend to be more effective than one-size-fits-all approaches, in

Table 4 Data extracted related to the “Adoption” domain of the RE-AIM framework for reviewing health interventions

Author	State or region (urban or rural)	number of faith communities approached for involvement	number of faith communities participated	Was there community participation in design, implementation, evaluation? What was it?
Lightfoot et al., 2001	not reported	4	4	Not reported.
Marcus et al., 2004	Houston, Texas (urban)	2 (one for intervention, and one as comparison added later in project)	2	yes; design of the project, including curriculum and layout, was result of consultation with church ministries and stakeholders; evaluation of the project was determined by church involved; the church hosted the events
MacMaster et al., 2007	Nashville TN (urban)	1	1	Model was developed with governing body of the program, a faith organization.
Baldwin et al., 2008	Rural North Florida (rural)	Not reported.	43	Design of intervention was guided by pastors; two adolescent members of congregations implemented as peer educators.
Griffith et al., 2010	Flint, Michigan, and surrounding county (urban)	12	12	Selection and development of modules was carried out with faith organizations.
Whiters et al., 2010	Southwest Atlanta (urban)	Not reported.	6	Not reported.
Griffith et al., 2010	Flint, Michigan, and surrounding county (urban)	12	12	Selection and development of modules was carried out with faith organizations.
Berkley-Patton et al., 2013	Kansas City and surrounding urban areas (urban)	5	4	Broad faith organization assisted in the church recruitment process; churches were involved in determining the research agenda, intervention development, implementation, evaluation, interpretation, and dissemination of findings.
Wingood et al., 2013	Atlanta (urban)	1	1	Churches housed recruitment, The community advisory board (including faith organization members) members were given the authority to modify the study to avoid risks and adapt the study to church's belief systems
Derosé et al., 2016	Long Beach, CA (urban)	6	5	A Community Advisory Board (including faith leaders) provided input intervention design, design of data collection, intervention activities, and evaluation procedures. Churches housed the intervention.
Williams et al., 2016	Long Beach, California (Urban)	6 (selected of 11 meeting inclusion criteria)	5	Church based testing events hosted by local health departments.
Berkley-Patton et al., 2016	Kansas City and surrounding areas (urban)	5	4	Broad faith organization assisted in the church recruitment process; churches were involved in determining the research agenda, intervention development, implementation, evaluation, interpretation, and dissemination of findings.
Payne-Foster et al., 2018	Rural Alabama (rural)	14	12	Intervention was developed with anti-stigma curriculum from the Christian Council of Ghana (CCG) adapted for use based on feedback from African-American pastors and people living with HIV in Alabama, and the NAACP's “Black Church & HIV: A Social Justice Imperative” Activity Manual.
Berkley-Patton et al., 2019	Kansas City and surrounding areas (urban)	5	4	Broad faith organization assisted in the church recruitment process; churches were involved in determining the research agenda, intervention development, implementation, evaluation, interpretation, and dissemination of findings.
Lanzi et al., 2019	Alabama (urban and rural)	Not reported.	Not specified.	Community engagement team included local AME and other church leadership. The team jointly developed the training model.
Wingood et al., 2019	Atlanta, Georgia (Urban)	50	20	Community advisory board developed aspects of intervention and churches hosted events.

addition to being more sustainable and acceptable. Religiosity and/or spirituality is an important aspect of individual and social identity for many people at-risk for or living with HIV in the US, and faith-based communities play a strong role in providing social support, as well as in shaping norms

and values that are salient for health behaviors related to HIV prevention. This review adds to our understanding of the ways that communities of faith have implemented and adapted various HIV prevention interventions, including as partners, hosts, recruiters, or leaders of health intervention.

Table 5 Data extracted related to the “Implementation” domain of the RE-AIM framework for reviewing health interventions

Study	Dose of intervention	Frequency of intervention	Who implemented the intervention?	Components implemented in the faith community	Training of implementers	Barriers to implementation
Lightfoot et al., 2001	90 min	Two sessions	11 trainers, whose ethnic and linguistic background matched the congregations, who were experienced in cognitive-behavioral interventions for small groups and had worked in the field of HIV	recruitment	Trainers were experienced in cognitive-behavioral interventions for small groups and had worked in the field of HIV; 4 had graduate training.	Dissemination concerns, especially given that effect on community was not measured.
Marcus et al., 2004	Roughly hour long trainings on Wednesday nights after school.	adolescent participants participated for 3 years, meeting roughly weekly during the school year, concurrent with bible study.	Church members volunteered as implementers for the project.	Theory development, recruitment, implementation, decision-making regarding evaluatory processes	cultural sensitivity trainings; trainings regarding HIV/AIDS, substance use, and other topics through “Life Skills Training”	developed in specific community with specific partners’ needs identified; small and likely non-generalizable sample of church-going adolescents; declining participation throughout a long three-year intervention period, requiring changes to implementation design during course of program follow-up and attrition
MacMaster et al., 2007	Not specified.	Not specified.	Staff members of Metro CAN (an affiliate of a faith-based org)	N/A	Staff are trained to be deliberate in communicating to individuals their value and worth	
Baldwin et al., 2008	2.5 h training session.	One session.	peers (adolescents males and females from congregations)	N/A	implementers were adolescents who attended a 2.5 h abstinence only training	recruiting peers who will provide adequate fidelity;
Griffith et al., 2010	varied depending on church	varied depending on church	church members and faith leaders	Recruitment, implementation of some tasks of the intervention, behavioral modeling	minister’s wife taught to lead conversations with youth	Willingness by faith leaders may be a challenge if implementing broadly.
Whiters et al., 2010	Each initiative lasted approximately four hours	18 months of HIV testing	Health outreach workers	Rapid HIV testing and HIV counseling, education, and referral services	NA	Challenges linking HIV-infected individuals with medical care;
Griffith et al., 2010	varied depending on church	varied depending on church	church members and faith leaders	training, testing, community events	Training given to outreach volunteers	Willingness by faith leaders may be a challenge if implementing broadly.
Berkley-Patton et al., 2013	Varied based on “tools” used	3 “tools” from developed toolkit were administered monthly for 12 months	ministers, church health liaisons (CHLs)	encouragement of testing by pastors and CHLs, outreach to ministry teams; testing events at church; sermons on HIV; educational materials; intrachurch partnerships to raise HIV awareness	toolkit-based materials for CHL and faith leaders	existing church commitments; challenge retaining young male participants with less education; disparity in continuity between church member and community participants.
Wingood et al., 2013	Not specified	Not specified; based on SISTA intervention (Wingood et al., 2011) which had two sessions	Two Black women (one of whom was a church member)	Intervention and recruitment	Facilitators from the church received extensive training by study staff	participants’ responses regarding abstinence may have been influenced by social desirability. Limits to generalizability.

Table 5 (continued)

Study	Dose of intervention	Frequency of intervention	Who implemented the intervention?	Components implemented in the faith community	Training of implementers	Barriers to implementation
Derose et al., 2016	Varied by congregation	Varied by congregation	Pastor; members of health department; peer leaders (members of faith communities);	Sermon/homily about stigma; congregation based testing events	Training of pastors' spouses and other faith leaders by study staff	Willingness by faith leaders may be a challenge if implementing broadly.
Williams et al., 2016	Single testing episode and counseling offered to participants posttest, with roughly 20 tests administered per hour.	Once	Health department staff members	NA	NA	Resource barriers, concerns related to generalizability.
Berkley-Patton et al., 2016	Dose varied between liaisons based on exposure to materials.	Frequency of efforts not specified as they varied between liaisons; efforts occurred over 1-year period.	Liaisons (church members)	Intervention and assessment	liaisons trained deliver one to two culturally and religiously-tailored HIV Tool Kit materials/activities spanning several levels of interaction.	Recruitment of men; generalizability.
Payne-Foster et al., 2018	One module was about one hour	Eight modules, conducted over the course of a few days or one training.	Research team member cofacilitated anti-stigma sessions with a ministerial liaison For knowledge-based condition, sessions were co-facilitated by two members of the research team.	Recruitment of participants by church liaisons/leadership; FAITHH and knowledge-based intervention, as well as control intervention, housed in churches	The PI conducted a one-day training on the intervention content and session facilitation.	NA
Berkley-Patton et al., 2019	Varied based on "tools" used	3 "tools" from developed toolkit were administered monthly for 12 months	ministers, church health liaisons	encouragement of testing by pastors and CHLs, outreach to ministry teams within and outwardly facing; testing events at church; sermons on HIV; educational materials; intrachurch partnerships to raise HIV awareness	toolkit-based materials for CHL and faith leaders	existing church commitments; challenge retaining young, male, participants with less education; disparity in continuity between church member and community participants;
Lanzi et al., 2019	3 h	Single session	clergy leader led discussion of stigma during one hour of training	Intervention and assessment	Trainings of clergy leadership and people living with HIV to deliver messages about stigma	Limits in generalizability, challenges in assessing knowledge re: PrEP
Wingood et al., 2019	organization-level intervention: 4 years leadership-level intervention: 2 years individual-level intervention: 2 years	Varied depending on component of intervention	Health experts from our collaborating community-based HIV organization	Components of the intervention	NA	Concerns related to stigma and adaptation

Table 6 Data extracted related to the “Maintenance” domain of the RE-AIM framework for reviewing health interventions

Study	Schedule of post-intervention data collection
Lightfoot et al., 2001	1 week and 3 month follow ups
Marcus et al., 2004	Not reported.
MacMaster et al., 2007	6 and 12 months
Baldwin et al., 2008	post-test immediately following intervention
Griffith et al., 2010	Not reported.
Whiters et al., 2010	Not reported.
Griffith et al., 2010	Not reported.
Berkley-Patton et al., 2013	6 month and 12 month follow-up
Wingood et al., 2013	3 and 6 month follow up
Derosé et al., 2016	6 month follow up
Williams et al., 2016	Not reported.
Berkley-Patton et al., 2016	6 month follow-up.
Payne-Foster et al., 2018	Participants in the stigma-based and knowledge-based conditions completed a 15-minute survey before and after completing the intervention. Post-testing completed within 8 weeks of pretesting.
Berkley-Patton et al., 2019	6 month and 12 month follow-up
Lanzi et al., 2019	Not reported.
Wingood et al., 2019	Not reported.

Notable trends, including the features of the interventions themselves and the people that they aimed to serve, are discussed here.

Half of the studies included in this review were published during or after 2013. PrEP became widely available for US residents in 2012, and since that time, increasing awareness and uptake of PrEP has been a public health priority (Sullivan & Siegler, 2018). Only one study included in this review used PrEP knowledge as an outcome measured during the implementation and follow-up of intervention (Lanzi et al., 2019), and even this was an emergent qualitative theme that was not an initial goal of the study. Across the interventions included in the review, very few of the faith-based efforts since the advent of PrEP in the US included content related to increasing PrEP-related knowledge, decreasing PrEP stigma, or increasing the accessibility and use of PrEP for individuals at-risk for HIV. This is an interesting finding and may reflect cultural adaptations and biases present in the interventions co-developed or hosted by faith communities. Some interventions (especially those that focused on youth) tended to focus more on abstinence from sexual behavior rather than offering harm reduction strategies for those engaging in sexual behaviors or other HIV-related risk behaviors (e.g., injection drug use). This may, in part, be due to faith communities’ perspectives and attitudes toward sexual risk mitigation. Interventionists seeking to

partner with faith communities should bear this in mind as a potential consideration for adaptation or discussion with their collaborators. Considering the balance between the benefits of cultural tailoring (Minvielle, 2017) and need to ensure that HIV prevention education is comprehensive and expands beyond abstinence-based messaging (Adimora & Auerbach, 2010) is important for interventionists seeking to develop effective HIV prevention programming for faith-based communities.

Implementation Implications

The reach (one domain of the RE-AIM framework) of these studies is notable as they primarily targeted their prevention efforts at Black (or less frequently, Latine) communities, and many studies were situated in the Southeast and western Midwest where PrEP uptake is low compared to other regions of the US (Mouhanna et al., 2020). Given the racial/ethnic and geographic disparities that faced many of the participating communities in the included studies, it is promising that so many reported significant positive outcomes of their interventions. If faith-based interventions were to expand their focus to include education and de-stigmatization of PrEP, it is likely that this method of disseminating information may make a meaningful impact on the uptake of PrEP in these communities.

Related to reach, the faith communities in which all these studies were rooted were Christian organizations or churches, which is unsurprising given that this is the majority religion of the US (Public Religion Research Institute, 2021). However, it is important to note that members of minoritized religions in the US may also experience racialized health disparities, and other identities such as immigration, citizenship, and refugee status likely also have very important intersectional consequences for health outcomes (Taylor et al., 2014). For instance, Muslim Americans are very understudied in terms of their HIV knowledge, attitudes, and prevention behaviors (Hearld et al., 2021). Partnership with non-Christian faith communities is an area of opportunity for the field to increase prevention and health equity efforts.

Important, too, is noting how HIV prevention was defined and operationalized in these studies, as researchers took several broad approaches to understanding preventative measures and outcomes. Primary aims of studies included individual changes in behavior (e.g., testing, condom use, abstinence from sexual behavior or illicit substance use) and perception of risk or stigma but also included congregation- or community-focused interventions to reduce stigma and increase openness of discussion (Berkley-Patton et al., 2019; Griffith et al., 2010). Community-focused interventions tended to have increased faith leadership or

organizational input and tiered designs, which may suggest another strength of intervention partnership with faith communities: faith communities often have a community outreach focus from the start, leading to programs with less clear-cut timelines and a unique relationship to behavioral modeling. This appears to be an important aspect of the structure of implementation itself, with community involvement in recruitment and data collection and in supporting adoption within the work of faith-based HIV prevention. Partnership and adaptation to faith community structure and belief has been demonstrated to be an important consideration for interventions targeting a diversity of health concerns (Resnicow et al., 1999), including promotion of nutrition and physical activity for the prevention of chronic disease (Wilcox et al., 2010) and reduction of obesity, overweight, and risk factors for diabetes (Tucker et al., 2017). Interventionists would benefit from acknowledging the pre-existing strategies and outlooks within the communities with whom they forge relationships, while also working to adapt and integrate prevention practices with demonstrated effectiveness in previous literature – especially given that this review demonstrates generally effective interventions and maintained outcomes from several of these faith-based interventions.

Limitations

This review should be read in light of its limitations. A priori criteria for inclusion by nature limit the studies that might inform the conclusions drawn here, and studies that included samples from non-US populations were not included. The review process was not iterative, and importantly, as themes emerged from the articles included the search strategy and extraction process were not changed. This might have led to a missed opportunity to deepen knowledge into further patterns between and within studies included here, although the authors worked to include these themes in discussions and synthesis of the findings. Additionally, studies found came from databases and journals primarily focused on public health, psychology, nursing, or behavioral medicine. Research representing investigations about theological or spiritual underpinnings of faith-based HIV prevention interventions are not represented here, and researchers or congregations seeking to find religious underpinnings to the design of potential promotion efforts are encouraged to seek these resources or conversations based on their populations of interest. Finally, the distinction between religious community-based interventions and interventions that utilized individual spirituality and/or faith was an important one for the sake of clarity but also reinforces a somewhat false dichotomy between religiosity and spirituality and does not clarify which components of the religious involvement may

have contributed to behavioral or cultural changes observed. For parsimony's sake only those interventions that were connected to a faith community were included, but future research on the impacts of spiritual or religious individual practice on HIV prevention, including PrEP, is called for.

Recommendations

This study provides a review of diverse interventions for the prevention of HIV, which can serve as guidance for implementation scientists, health promotion interventionists, and faith leaders considering partnership. Partnerships that involve faith communities in many facets of the program's development appear to be well-represented and have demonstrated strengths in making changes in some important factors relevant to HIV prevention. This reflects literature in implementation science suggesting the imperative of incorporating community knowledge into change efforts (Stevens, 2021), including those of faith communities (Parra-Cardona et al., 2021). Program development and evaluation research has identified a paucity of evidence-based guidance on working with faith communities toward implementation efforts (Janzen & Wiebe, 2010), and thus more research, including foundational research and reviews such as this, are important to scaffolding evidence-based, community-guided and effective implementation.

Additional attention should be paid to the differentiation of surface-level and deep-level structures of cultural tailoring (Resnicow et al., 1999) as they relate to implementation. Surface-level tailoring refers to superficially adapted cultural aspects of an intervention (e.g., location, language), while deep-level tailoring involves an incorporation of a community's values into the intervention. The values of a community may also lend themselves to multilevel interventions in the case of faith-based partnerships, and interventionists and researchers should be prepared to develop complex and multifaceted interventions. Additionally, given the disparities that exist in PrEP uptake and access among racialized communities and in the "Bible Belt", a specific focus on destigmatization, education, and access to PrEP through faith-based health promotion is warranted. Researchers and faith leaders are advised that attitudes toward PrEP are informed by a variety of factors, including individual and cultural biases, that should be discussed as an intervention is jointly designed.

To advance faith-based HIV prevention efforts in the US, future research and practice need to incorporate more education about PrEP, reduce PrEP-related stigma, and increase the accessibility and uptake of PrEP. Additionally, efforts should broaden beyond the predominantly Black Christian populations in Southeastern or Midwestern settings that currently dominate the literature. Other racial/ethnic groups,

faith communities (e.g., Muslim), or settings with varying levels of PrEP uptake should be included. Furthermore, researchers need to apply implementation science frameworks to explore how contextual factors, such as organizational capacity and leadership engagement, impact the adoption and sustainability of faith-based HIV prevention programs.

Conclusion

Faith-based health promotion interventions have been a part of striving for health justice in the US for decades, and research partnerships with faith communities can do much to propel racial justice in health and well-being. Given the urgency of the HIV disparities facing racialized populations in the US, seeking sustainable and community-driven solutions to effective HIV prevention through implementation science is urgently needed. Faith-based health promotion, in the age of PrEP, has the potential to address the health disparities and prevent HIV among communities that are at increased risk.

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Data Availability No datasets were generated or analysed during the current study.

Declarations

Conflict of interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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