

Faith-Based HIV Prevention and Counseling Programs: Findings from the Cincinnati Census of Religious Congregations

Magdalena Szaflarski · P. Neal Ritchey · C. Jeffrey Jacobson · Rhys H. Williams · Amy Baumann Grau · Karthikeyan Meganathan · Christopher G. Ellison · Joel Tsevat

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Abstract Congregations are well positioned to address HIV in their communities, but their response to HIV has been mixed. An emerging literature describes HIV programming in urban, predominantly black congregations, but population-based data remain limited. This study examined the levels of HIV prevention and counseling programs and associated factors (e.g., religious, organizational) by using data from a phone census of congregations in the Greater Cincinnati area ($N = 447$). Over 10 % of congregations (36 % of Black Protestant and 5–18 % of

other types of congregations) offered HIV education/prevention alone or in combination with counseling or with counseling and testing. Path analysis results showed notable significant ($p < 0.05$) total effects of theology-polity on HIV prevention/counseling programs, but these effects were fully mediated by other factors, including other community work and racial composition. The levels of HIV programming in this study were high by national standards, but further outreach is needed in high-risk African American communities.

C. Jeffrey Jacobson and Rhys H. Williams equal contribution to the study and manuscript preparation

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M. Szaflarski (✉)
Departments of Sociology and Health Behavior,
University of Alabama at Birmingham, HHB 460H,
1720 2nd Ave South, Birmingham, AL 35294-1152, USA
e-mail: szaflam@uab.edu

P. N. Ritchey · A. Baumann Grau
Department of Sociology, University of Cincinnati, Cincinnati,
OH, USA

C. J. Jacobson
Department of Anthropology, University of Cincinnati,
Cincinnati, OH, USA

C. J. Jacobson · K. Meganathan
Department of Family and Community Medicine,
University of Cincinnati, Cincinnati, OH, USA

R. H. Williams
Department of Sociology, Loyola University Chicago,
Chicago, IL, USA

Resumen Las congregaciones religiosas están bien ubicadas en sus comunidades para enfrentarse con la VIH, pero sus respuestas no han sido consistentes. Una literatura emergente describe la programación en contra del VIH en las congregaciones mayormente Afroamericano, pero hay limitados datos sobre programación de VIH a nivel

A. Baumann Grau
Department of History, Humanities and Social Sciences,
Eastern New Mexico University, Portales, NM, USA

C. G. Ellison
Department of Sociology, University of Texas at San Antonio,
San Antonio, TX, USA

J. Tsevat
Department of Internal Medicine, University of Cincinnati
College of Medicine, Cincinnati, OH, USA

J. Tsevat
Veterans Affairs Medical Center, Cincinnati, OH, USA

regional basados en muestras poblacionales. Esta investigación examinó niveles de programas de prevención y consejería y factores asociados (p.ej. organización, religión) con datos de un censo telefónico de congregaciones en la área metropolitana de Cincinnati, Ohio ($N = 477$). Más de 10 % de congregaciones (36 % de congregaciones protestantes Afroamericanas y 5–18 % de otros tipos de congregaciones) ofrecieron educación/prevención en si o en combinación con consejería o con consejería y pruebas de VIH. Resultados de análisis del camino (regresión múltiple) mostraron efectos notables y significados de organización/teología en la programación de VIH, pero estos efectos fueron mediados totalmente por otros factores, incluidos otros tipos de servicio a la comunidad y composición racial. Los niveles de programación de prevención/consejería en este estudio fueron altos por normas nacionales, pero hacen falta mayores esfuerzos de reclutamiento y participación en comunidades afroamericanos de alto riesgo.

Keywords Congregations · Religion · HIV · Prevention · Counseling

Introduction

Public health agencies are giving greater attention to the unique and important role that religious organizations can play in reducing the burden of HIV [1]. There are at least 331,000 congregations in the U.S. [2], and the country remains highly religious [3, 4]. Congregations have had a strong record of social service work [3, 5–8]: 82–94 % of American congregations report being involved in community service [9–11], including health-related work [12]. However, organized religion's response to HIV has been mixed. Congregations have provided much needed support and care for people dying of AIDS, especially in the early days of the epidemic [5, 13], but they also often reflected the social norms—characterized by stigma and denial—that contribute to the spread of and hinder efforts to prevent HIV [14].

Considering HIV funding initiatives for religious organizations [15, 16], it is essential to know to what extent American congregations are currently involved in HIV work and what factors facilitate or hinder congregational involvement. A recent study estimated that 5.6 % of U.S. congregations provide programs or activities to people living with HIV (PLWH), which were facilitated by presence of PLWH in the congregation, formal community needs assessment activities, religious tradition (e.g., Black Protestantism), and openness to gays/lesbians [17]. Additional exploratory and evaluation studies have examined the role of urban and African American churches in addressing HIV [16, 18–23]. HIV stigma and denial of the

problem are pervasive in many communities, and African American religious leaders have begun addressing these issues [1]. Some successful programs have been launched [24], harnessing the churches' potential for community mobilization [16, 25].

Past studies suggest factors (e.g., urban location and social service) that are associated with congregational HIV work [23, 26, 27], but little is known about how those factors operate together to shape specific levels of involvement in theologically diverse congregations. Also, research has emphasized high HIV-prevalence areas (the U.S. West and East Coasts and the South) [22, 27–29], but not so much areas of low-to-moderate prevalence (e.g., the Midwestern U.S.), where HIV risk factor rates can be high but prevention efforts are limited. To help close the research gap, we undertook a study to (1) quantitatively ascertain current levels of HIV prevention programs (education, testing) and counseling of PLWH and people at risk of HIV infection, in a large, diverse sample of congregations in a Midwestern city and (2) develop and test a conceptual model of associations between congregational HIV work and theological, organizational, and sociodemographic factors. In order to test our conceptual model, we advance the methodology for path analysis.

Conceptual Framework and Hypotheses

When considering congregations' responses to HIV, both cultural and organizational factors are paramount [17], but little has been written on how they are intertwined. To provide some background, national denominational structures and local congregations rely heavily, or entirely, upon the donations of time and money that come from members [30]. As a result, local religious congregations face a lot of pressure to deliver whatever it is that members want. Another important dimension is the extent to which congregations are connected to larger ecclesiastical polities [31]. Many religious congregations are quite autonomous—the so-called *congregational* organizations—while others are but one part of a larger national, and sometimes international, organizational structure—*episcopal* organizations. These two types of ecclesiastical *polity* vary in the designation of religious authority (e.g., local clergy versus a bishop), or who can speak in support of or against certain programming [32]. Denominational statements about HIV may further constrain or enable local programs. For example, many denominations have made official pronouncements about HIV [5], and in episcopal polities, that carries some weight. However, all formal doctrine is filtered through cultural interpretations, variations in religious practice, and practical realities. The impulse to serve the needy often runs up against moral attitudes about sexuality/homosexuality or injection drug use, but organizational factors mediate the relationship and push

congregations toward providing services or shunning them. Thus, it is hard to fully separate theology from organization because some organizational features have theological significance, including service and health-related work.

Considering the theory and literature, we tested assumptions regarding levels and types of congregational HIV prevention and counseling programs and associated factors. We hypothesized that congregations would be more likely to offer education than counseling because of a greater acceptance, greater need, and less expertise required for education activities (though they may actually require more resources). Also, because the need for testing has been concentrated in African American communities [33], and testing requires even more resources and expertise, we hypothesized that, overall, testing would be less commonplace in churches than education or counseling. In addition, we expected that, due to limited resources and need for prioritization, a congregation would offer counseling only if education were already available, and it would offer testing only if both education and counseling were already available. Our hypotheses rest on a general assumption that knowledge (generated by acquisition of information) would precede action or practice. We assumed that congregations would not open their doors to a service provider to conduct HIV testing unless there was a certain level of awareness of the problem and need to which a congregation wanted to respond. Thus, in the simplest form, congregational HIV education would consist of discussing HIV and disseminating knowledge at the congregational forum, in order to proceed with any action. We also assumed simultaneous (if not temporally incremental) presence of testing and education/counseling because testing has typically been offered in conjunction with education/counseling.

We also proposed a series of hypotheses about how various factors would be interrelated in their associations with congregational HIV prevention and counseling programs (Fig. 1). Factors known to be associated with congregational service work include the congregation's size, theological orientation, location, and sociodemographic composition (e.g., race/ethnicity, education) [3, 8, 34], while health-related programming is a function of non-health-related service [35]. We hypothesized that a combination of theology and polity would be the key factor associated with congregations' HIV programming, but this relationship would be mediated by the other factors. In particular, we hypothesized that Black Protestant congregations would be more likely than other types of congregations to offer HIV programming, mostly because of their urban location, predominantly African American membership (presumed high-risk for HIV [36]), and active engagement in social justice programs [3, 8, 17]. However, other factors were also expected to play a role, having positive and negative relationships with each other and/or with HIV programming. For example, the larger the

congregation, the more operational resources it would typically have, which, in turn, would allow for more programming. We also hypothesized associations between the sociodemographic structure and HIV programming; for example, the significance of large size would be diminished if members were generally older (lower perceived need for HIV programming among the elderly) or less educated (proxy for lower levels of knowledge or for conservative attitudes). Overall, we expected the relationship of theology-polity to HIV programming to be appreciable and most of it to be mediated by other factors (see Supplementary material 1, incl. Figure A1, for further elaboration).

Methods

This study was conducted in the Greater Cincinnati area including four counties in Ohio (Hamilton, Butler, Clermont and Warren) and three counties in Kentucky (Boone, Campbell, and Kenton). Cincinnati is Ohio's largest metropolitan area with more than 2.1 million people, about 40 % of whom reside in Hamilton County. As of January 2012, an estimated 274 per 100,000 people in Hamilton County were living with a diagnosis of HIV infection [37]. Most (68 %) HIV cases among men were transmitted through male-to-male sexual contact; fewer cases were due to heterosexual contact (6 %), injection drug use (IDU; 3 %), and combined heterosexual contact and IDU (4 %). The most common mode of HIV transmission among women was heterosexual contact (55 % of cases); 10 % of the cases were due to IDU. Greater Cincinnati is considered a low-to-moderate prevalence area and has been funded repeatedly under the expanded testing initiatives of the Centers for Disease Control and Prevention [38] to increase identification rates of undiagnosed HIV infection in neighborhoods disproportionately affected by HIV, particularly predominantly black neighborhoods. Most (57 %) HIV cases in Hamilton County are among non-Hispanic Black/African Americans, and 2 of 3 blacks with HIV in Ohio reside in Hamilton County [37]. Furthermore, Hamilton County's syphilis rate is nearly nine times the national rate, with 85 % of the cases occurring among blacks. Our study focused on the extent of faith-based HIV prevention and counseling efforts in Greater Cincinnati to reflect the current needs. There has been no systematic effort until now to document Greater Cincinnati churches' involvement in HIV work.

The Cincinnati Census of Religious Congregations

In 2008, we conducted a phone census of congregations in Greater Cincinnati to describe congregational social service and health programming as an extension of the

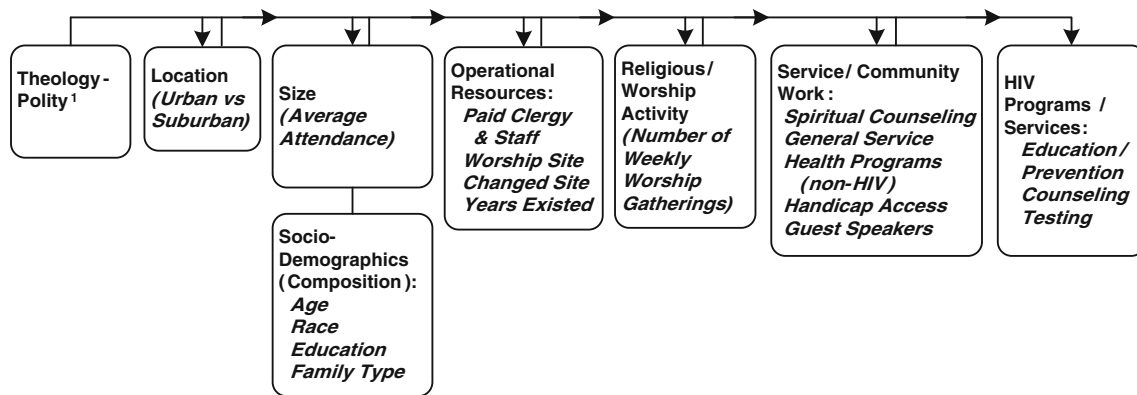


Fig. 1 Simple path diagram of relationships between congregational theology–polity and HIV prevention/counseling programs (also see Figure A1 in Supplementary material 1). ¹Roman Catholic (Episcopal); Mainline Protestant—Episcopal; Mainline Protestant—

Congregational; Conservative Protestant (Congregational); Black Protestant—Episcopal and Congregational; Other—Episcopal and Congregational

literature on the contribution of congregations to support quality of life in urban America [3, 8]. A panel of experts (e.g., sociologists, health researchers) developed a comprehensive list of census items tapping congregational programs/services and associated factors (e.g., resources) based on prior literature.

We identified and contacted a total of 509 congregations: 448 (88 %) completed the full census interview; 60 (11.8 %) refused to participate; and, 1 (0.2 %) completed the census but later asked to be withdrawn (see Supplementary material 1 for further information on recruitment). Of the 448 congregations, 1 congregation was excluded because its theology–polity type could not be determined. Thus, 447 congregations were included in our analysis. However, we started by compiling a list of congregations from several sources including Survey Sampling International, Inc. (a company that provides samples), online and paper directories (e.g., usachurch.com), and a mailing list from a local Christian association. We identified additional congregations through snowballing and an on-the-ground search. The initial list of congregations with name, address, and telephone number was four times as large as our 509 confirmed congregations. Interviewers were trained to make multiple call backs for various reasons including inconvenient time, a message was left, or the call was unanswered after 10 rings. Of our original list a large share were numbers that were no longer in service or verified businesses or personal residences. The remainder had calls that were unanswered or did not respond to left messages; it was unclear whether or not these were actual congregations.

The census interview (Supplementary material 2) was conducted by trained interviewers and consisted of 44 questions, mostly closed-ended. In each congregation, we identified and interviewed a key informant—a clergy or an administrative staff person with tenure of at least 3 months, preferably salaried—as key informants provide the most

valid assessments when asked about observable congregational characteristics [39]. The study was approved by the University of Cincinnati Institutional Review Board.

Measurement

Theology–polity was assessed by asking several questions: (1) “Is your congregation formally affiliated with a denomination, convention, or some other kind of association? (yes/no).” If the answer was “yes,” we ascertained the name of the denomination/association(s). (2) “Theologically speaking, would your congregation be considered clearly conservative, more on the conservative side, more on the liberal side, clearly liberal, or right in the middle?” (3) If a congregation’s denomination was *other* than Catholic, Jewish, Muslim, Hindu or Buddhist, we asked: “When it comes to the overall religious identity or culture of your congregation, would you say that your congregation tends to be fundamentalist, evangelical, mainline, liberal, charismatic, or do none of those terms describe your congregation well?” Polity was defined as congregational versus episcopal. We used the following categories for theology–polity: Roman Catholic (all episcopal), Mainline Protestant—Congregational, Mainline Protestant—Episcopal, Conservative Protestant (all congregational), Black Protestant (all but 2 congregational), and “other.” A combined theology–polity variable was suggested by preliminary analyses (Supplementary material 1). Note that “Black Protestant” is not just a racial category; it denotes a particular constellation of beliefs, practices, and traditions that are religiously relevant.

Location was classified as central city versus suburb by using a congregation’s street address and census tract.

Size was assessed by using average attendance at the primary worship services (“How many people usually attend your typical, regularly scheduled worship service?”). This

continuous variable was adjusted for skewness by recoding values greater than 3,000; specifically, 26 values that fell between 3,261 and 19,900 were assigned consecutive values from 3,001 to 3,026.

Sociodemographic composition was assessed by using congregation's age, race, education, and family composition ["Considering only adults who attend your regularly scheduled services, would you say they are ..."]; (see item response options in Supplementary material 2)]. The sociodemographic variables were dummy-coded, as follows: *age* as "predominantly ages 18–49," "predominantly ages 50 and higher," and "mix of different ages/other"; *race* as "most members are white," "most members are black," and "mix of different races/other"; education as "most members have high school or less education," "most members have more than high school education," and "mix of education levels/other"; and *family composition* as "predominantly families with children," "predominantly older couples and singles," and "mix of family types/other."

Resources were assessed by asking about the number of paid clergy and staff, worship site (whether the congregation conducts its primary worship service in a church/temple/mosque or in some other kind of building), how long the congregation had been in existence, and whether the congregation had changed location during that period. The continuous variables for clergy/staff and duration of existence were adjusted for skewness as follows: 6 values greater than 31 (ranging from 35 to 185) for clergy/staff were recoded as consecutive values between 32 and 37; and 9 values exceeding 200 years for duration of existence were recoded as consecutive values between 201 and 209. We used binary variables for the worship site as church/temple/mosque versus "some other kind of building" and for location change versus no location change.

Worship activity was assessed by asking: "How often does your congregation offer primary worship services?" and coded as: <1 day/week, 1 day/week, and >1 day/week.

To assess non-HIV *social service and health programs*, we asked if the congregation had offered the following in the past 2 years: spiritual counseling, service/community programs (homeless services, soup kitchen, used clothing store/distribution, recycling, prison outreach, and "other"), health programs/services (sick/elderly visitation, health fair, emergency medical care, substance abuse counseling/prevention, bereavement support, family/reproduction-related counseling, healing services, handicap access to facilities, and "other"), and presence of guest speakers during the previous year. We used binary variables for spiritual counseling, handicap access, and guest speakers with 1 indicating "yes." We used count variables for other service and health programs.

HIV prevention and counseling programs were ascertained by asking whether the congregation had offered an

HIV education/prevention, counseling, or testing program/services in the past 2 years. HIV counseling was defined as counseling (one-on-one with a pastor/elder/qualified professional or small group/support group-based) provided within a congregational context to PLWH and those at risk of HIV infection (e.g., sexual partners of HIV-positive individuals, or injection drug users). This item and definition had been derived from two sources: (1) a diverse expert panel that included clergy members, health care providers, and researchers, and (2) pilot, cognitive interviews with faith leaders in the community ($n = 10$) suggesting a common meaning of this item among respondents. An ordered 4-category variable was constructed to reflect the lowest (most prevalent) to the highest (least prevalent) level of HIV programming: none (= 0), education/prevention (alone; = 1), counseling (and education/prevention; = 2), and testing (and counseling and education/prevention; = 3).

Procedure of Analysis

We computed descriptive statistics using percentage distributions for categorical variables and medians and 25th and 75th percentiles for continuous variables. We analyzed the data by using path analysis (a structural equation modeling technique). As emphasized by Pedhazur [40], path analysis is "a method for studying direct and indirect effects of variables hypothesized as causes of variables treated as effects" and "is intended not to discover causes but to shed light on the tenability of the causal models a researcher formulates based on knowledge and theoretical considerations" (pp. 769–770). The "causal" effects described in this paper are based on correlational matrices, and, thus, represent associations.

We proceeded by (1) describing the proportion of congregations offering HIV programs/services, (2) testing our hypothesis regarding the association of theology–polity and HIV programming, which represents the total causal effects of theology–polity on HIV programming, (3) testing the direct effects of theology–polity on HIV programming (the effects controlling for all other predictors), and (4) testing the indirect effects that theology–polity had on HIV programming through each intervening (mediating) variable. In this last step, we examined the sum of the theology–polity effects through each intervening variable in turn, regardless of the many paths or antecedent intervening variables through which theology–polity affected the intervening variable of focus and the degree to which some paths might have offset others, and regardless of the many paths or subsequent intervening variables through which the intervening variable of focus might have influenced HIV programming. The set of equations representing the path model included those estimated via ordinary least

squares, binary logistic, ordered logistic, multinomial logistic, Poisson, and negative binomial regressions. We opted to use ordered logistic regression to model the theology–polity–HIV programming relationships because tests of the proportional odds assumption indicated that the assumption was reasonable or because in instances where it did not, predicted probabilities for HIV and the conclusions presented did not differ markedly between multinomial and ordered logistic models. To simplify interpretation of the combination of results, we present the predicted probabilities or rates of having (1) no program, (2) an education/prevention program only, (3) a counseling program along with an education/prevention program, and (4) a testing program along with a counseling and an education/prevention program—for each of the theology–polity types of congregation through each mediating variable.

The logic and steps to the analytic procedure were to: (1) measure the total causal effects, i.e., the sum of direct and indirect effects, of theology–polity on a mediating variable by regressing the mediating variable on theology–polity; (2) measure the direct causal effects of that mediating variable on HIV programming, independent of antecedent variables (those appearing earlier in the model) and variables at the same step in the causal chain by regressing HIV programming on the mediating variables and on all other variables at the same or earlier steps in the causal chain; (3) use Step 1’s equation(s) to estimate values for the mediating variable for each theology–polity category; (4) use Step 3’s predicted values in Step 2’s equation to predict HIV programming (for each theology–polity category in turn) where all variables other than the predictor of interest were set at their means. Using a congregation’s number of paid clergy/staff as an example, the predicted HIV values (Table 3) were calculated as follows: (1) the number of paid clergy/staff was regressed in a negative binomial regression on theology–polity; (2) HIV programming was regressed in an ordered logistic regression on number of paid clergy/staff, worship site, whether the church had changed location, years in existence, congregation size, age composition, race composition, education levels, family composition, location, and theology–polity; (3) Equation 1 was iterated six times to generate the predicted number of paid clergy/staff for each theology–polity type; (4) Equation 2 was iterated six times with the predicted values derived in step 3 from Equation 1, with 1 value of number of paid clergy/staff for each theology–polity type, yielding the six distributions of HIV programming shown (all other predictors in Equation 2 were held at their means).

In conducting significance tests for differences among groups, we used an alpha level of 0.05 (two-tailed test). However, in a few cases, where an effect could be hypothesized in either direction (e.g., location preceding

theology–polity in the causal chain versus vice versa; see Supplementary material 1), we relaxed the testing criterion and used an alpha of 0.1 (one-tailed test). That strategy could allow others, who have different ideas about the direction of an effect, to test their own hypotheses regarding specific effects. Note that indirect effects through a mediator are often small (because proportions [%] × proportions [%] × etc. produce small numbers), and many of our summary indirect effects reflected upward and downward pressures (positive/negative effects)—therefore, offsetting effects.

Findings

The congregations were overwhelmingly Christian, white, and suburban (Table 1). The largest theology–polity group was Conservative Protestant ($n = 187$ [42 %]), followed by Catholic ($n = 73$ [16 %]), Mainline Protestant—Episcopal ($n = 72$ [16 %]), and Mainline Protestant—Congregational ($n = 71$ [16 %]). A total of 33 (7 %) of the congregations were Black Protestant, and 11 (3 %) congregations (Jewish, other Christian, and unidentified theological types) were classified as “Other” (residual category).

Overall, few congregations offered HIV prevention/counseling programs: 90 % offered no HIV programs and 3–4 % offered 1, 2, or 3 types of programs (Table 2). Black Protestant congregations had relatively high while Conservative Protestant and Catholic churches had relatively low levels of HIV programming—64 versus 95 and 93 % of these congregations, respectively, had no HIV programs, compared with 87 and 90 % for Mainline Protestant congregational and episcopal churches, respectively. Additional differences were observed in the types of programming by theology–polity. For example, if offered, HIV programming among Catholic churches appeared to focus on education/prevention while Mainline Protestant churches, be they congregational or episcopal, appeared to be more evenly split between education/prevention and education/prevention combined with counseling. Next we examined statistical significance of these variations.

The path analysis results (Tables 3, 4, 5) showed that theology–polity had a significant total causal effect on HIV programming. Specifically, HIV programming was significantly more common among Black Protestant congregations versus all other theology–polity types (excluding “Other”). The adjusted probabilities for a Black Protestant congregation to have education/prevention, counseling, and testing programs were 13, 14, and 11 %, respectively. In contrast, the adjusted probabilities for a Catholic congregation to have education/prevention, counseling, and testing programs were 3, 2, and 2 %, respectively. Also, Conservative Protestant churches had lower levels of HIV

Table 1 Characteristics of Greater Cincinnati congregations ($N = 447$)

	<i>n</i>	%	Median	25th percentile	75th percentile
Theology–polity					
Roman Catholic (all episcopal)	73	16.3			
Mainline Protestant—Episcopal	72	16.1			
Mainline Protestant—Congregational	71	15.9			
Conservative Protestant (all congregational)	187	41.8			
Black Protestant (episcopal and congregational)	33	7.4			
Other (episcopal and congregational)	11	2.5			
Central city location	112	25.1			
Sociodemographic composition					
Age composition					
Predominantly 18–49 years old	83	18.6			
Predominantly 50 years old or older	104	23.3			
Mix of different ages/other	260	58.2			
Race composition					
Most members are white	369	82.6			
Most members are black	43	9.6			
Mix of different races/other	35	7.8			
Education composition					
Most members have high school or less education	82	18.3			
Most members have more than high school education	217	48.5			
Mix of education levels/other	148	33.1			
Family composition					
Predominantly families with children	53	11.9			
Predominantly older couples/singles	63	14.1			
Mix of family types/other	331	74.0			
Resources					
Years in existence			76.0	44.0	134.0
Worship site is a church/synagogue/mosque	434	97.1			
Changed worship site over time	268	60.0			
Size (regular attendance)			335.0	150.0	770.0
Number of paid clergy and staff			5.0	3.0	9.0
Number of weekly worship sessions			2.0	1.0	2.0
Programs/services (non-HIV/AIDS)					
Spiritual counseling (present)	231	51.7			
General social service/community work (# programs)			2.0	1.0	3.0
Health-related (# programs)			3.0	2.0	4.0
Guest speakers (yes)	415	92.8			

programming than did Mainline Protestant—Congregational churches. The adjusted probabilities for a Conservative Protestant church to have HIV education/prevention, counseling, and testing programs were 2, 2, and 1 %, respectively, versus 5, 5, and 3 % for Mainline Protestant—Congregational churches.

Furthermore, we found no direct effects of theology–polity on rates of HIV programming (Tables 3, 4, 1st tier, right). That is, the effect of theology–polity on HIV programming was fully mediated by several intervening variables. The significant indirect effects include (from

right to left in Fig. 1): service/community work and health-related programs/services; paid clergy/staff; racial composition of the congregation; and urban location. The other hypothesized paths (indirect effects on HIV programming) were not significant.

Service/Community Work

Our model explicated how theology–polity acts through service/community programming to affect HIV programming. For example, Catholic congregations differed

Table 2 Percentage distribution of HIV programming by theology–polity

	No programming (=0)	Education/prevention (alone = 1)	Counseling (and education/prevention = 2)	Testing (and counseling and education/prevention = 3)
Roman Catholic (all episcopal)	93.2	4.1	1.4	1.4
Mainline Protestant—Episcopal	90.3	4.2	5.6	0.0
Mainline Protestant—Congregational	87.3	5.6	4.2	2.8
Conservative Protestant (all congregational)	94.7	2.1	1.6	1.6
Black Protestant (episcopal and congregational)	63.6	12.1	9.1	15.2
Other (episcopal and congregational)	81.8	0.0	18.2	0.0
All	89.9	4.0	3.6	2.5

An ordinal variable (coded 0–3), reflecting level of programming from the lowest (none) to the highest (all). Data for most congregations corroborated this model, with a few exceptions (e.g., a congregation reported counseling, or counseling and testing, but not an education program)

significantly in their influence on service/community programming relative to each of the other theology–polity types (excluding “Other”), and service/community programming affected presence of HIV programming (Table 4, 3rd tier, left). The direction and magnitude of influence of this indirect effect revealed that Catholic congregations were more likely to have service/community programming than other theology–polity types, and having service/community programming increased the likelihood of having HIV programming (Table 3).

Conservative Protestant congregations also had significantly less social service programming than each of the other theology–polity types (Tables 3, 4). A total of 6 % of Conservative Protestant congregations offered social service programming versus 8–9 % of other denominations except Catholic congregations, of which 12 % offered social service programming. Thus, 3–4 % more Catholic congregations had HIV programming and 3–4 % fewer Conservative Protestant had HIV programming than the other theology–polity types. Notably, the effect of Catholic versus Black Protestant congregations on HIV programming through service/community programs was in the opposite direction of the total effect Black Protestant congregations had on HIV programming. Catholic, in comparison with Black Protestant, congregations more often provided HIV programming through service/community work. On the other hand, the opposite effect of Conservative Protestant versus other congregations, including Catholic, on HIV programming through service/community programming contributed to their observed total effect.

Health Programming

The indirect effects on HIV programming of theology–polity through health programming displayed 3 patterns, 2 of which contributed to the observed total effects.

Operating through health programming, Black Protestant congregations exerted a positive effect on HIV programming in comparison with Mainline Protestant—Congregational or Conservative Protestant congregations. That is, Black Protestant congregations more commonly offered health programming than did the other 2, and having more health programming led to more HIV programming. That finding was consistent with the pattern for the total effect of theology–polity.

Also, operating through health programming, Catholic denomination had a positive effect on HIV programming in comparison with Mainline Protestant—Congregational or Conservative Protestant congregations. Catholic congregations had more health programming than did the other 2, and having more health programming led to more HIV programming. This effect was somewhat weaker than that noted for Black Protestant congregations. This finding was not consistent with the pattern for the total effect of theology–polity, where Catholic congregations had statistically significantly lower rates of programming only in comparison with Black Protestant congregations.

The third effect of theology–polity on HIV programming through health programming was negative (less programming) for Mainline Protestant—Congregational versus Mainline Protestant—Episcopal congregations. This effect was about the same in magnitude as that between Catholic and each of the Protestant congregational types and was in the same direction as that found for the total effect of theology–polity on HIV programming.

Clergy/Staff

There were two patterns of significant indirect effects of theology–polity on HIV programming via clergy/staff. First, Catholic congregations offered slightly more HIV programming through clergy/staff than any of the non-Black Protestant congregations, although the effect was

Table 3 Predicted probabilities (%) of HIV programming reflecting theology–polity total causal effects and indirect effects via intervening variables (Fig. 1)

HIV programming (predicted)	Percent										Actual	
	Total effects					Direct effects					Black Protestant	Other
	Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other	Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other
None	93.22	90.41	87.37	94.63	62.55	81.31	95.19	94.74	92.52	95.87	93.75	85.58
Education/prevention	2.90	4.03	5.20	2.32	12.51	7.38	2.37	2.59	3.64	2.04	3.06	6.73
Counseling	2.38	3.39	4.49	1.88	13.81	6.72	1.66	1.82	2.61	1.42	2.17	5.16
Testing	1.50	2.17	2.93	1.17	11.13	4.59	0.77	0.85	1.23	0.66	1.01	2.53
Total (%)	100.00	16.33	15.88	41.83	7.38	2.46						2.46
Via handicap access												
HIV programming (predicted)	Percent										Actual	
	Effects via guest speakers					Via number of service programs					Black Protestant	Other
	Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other	Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other
None	91.55	91.68	91.62	91.45	91.32	91.59	92.05	91.62	91.79	91.42	91.47	91.66
Education/prevention	3.58	3.53	3.55	3.63	3.68	3.57	3.40	3.58	3.51	3.66	3.64	3.56
Counseling	2.98	2.93	2.95	3.01	3.06	2.96	2.81	2.96	2.90	3.04	2.95	2.95
Testing	1.89	1.86	1.87	1.91	1.95	1.88	1.74	1.84	1.80	1.89	1.88	1.83
Via number of health programs												
HIV programming (predicted)	Percent										Actual	
	Via number of faith worship programs					Via number of weekly worship programs					Black Protestant	Other
	Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other	Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other
None	91.95	92.09	93.26	93.49	90.51	90.51	88.37	91.04	91.67	94.47	92.27	91.76
Education/prevention	3.61	3.55	3.05	2.95	4.22	4.22	5.00	3.92	3.66	2.47	3.41	3.62
Counseling	2.80	2.76	2.34	2.26	3.32	3.32	4.12	3.15	2.93	1.93	2.71	2.90
Testing	1.63	1.60	1.35	1.30	1.95	1.95	2.51	1.89	1.75	1.13	1.61	1.73
Via number of faith worship programs												
HIV programming (predicted)	Percent										Actual	
	Via number of faith worship programs					Via number of weekly worship programs					Black Protestant	Other
	Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other	Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other
None	91.44	91.56	92.11	91.55	91.50	90.48	91.47	91.65	91.29	91.48	91.45	91.18
Education/prevention	3.63	3.58	3.36	3.59	3.61	4.01	3.63	3.54	3.68	3.60	3.62	3.72
Counseling	3.02	2.98	2.78	2.98	3.00	3.36	3.01	2.94	3.07	3.00	3.01	3.11
Testing	1.91	1.88	1.75	1.88	1.90	2.14	1.92	1.87	1.96	1.91	1.92	1.99

Table 3 continued

HIV programming (predicted)	Percent	Via number of paid clergy and staff										Via worship site									
		Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other	Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other								
None	91.04	91.47	91.71	91.82	90.91	91.77	91.47	91.29	91.48	91.45	91.18	91.04	91.47	91.29	91.48	91.45	91.18				
Education/prevention	3.82	3.64	3.54	3.50	3.87	3.52	3.61	3.68	3.60	3.62	3.72	3.82	3.54	3.68	3.60	3.62	3.72				
Counseling	3.15	2.99	2.91	2.87	3.19	2.88	3.01	3.07	3.00	3.01	3.11	3.15	2.94	3.07	3.00	3.01	3.11				
Testing	2.00	1.89	1.84	1.81	2.03	1.82	1.92	1.96	1.91	1.92	1.99	2.00	1.87	1.96	1.91	1.92	1.99				
Via change in worship site																					
HIV programming (predicted)	Percent	Via family composition					Via age composition					Via education composition									
		Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other	Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other	Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other		
None	92.91	92.03	91.93	91.16	90.74	90.57	91.48	91.49	91.49	91.44	91.44	91.46	92.62	91.99	91.79	92.56	92.91	92.31			
Education/prevention	3.05	3.41	3.45	3.76	3.93	4.00	3.61	3.60	3.60	3.62	3.62	3.61	3.23	3.50	3.58	3.26	3.11	3.36			
Counseling	2.49	2.80	2.84	3.11	3.27	3.33	3.00	3.00	3.00	3.02	3.02	3.01	2.58	2.81	2.87	2.60	2.48	2.69			
Testing	1.55	1.75	1.78	1.96	2.06	2.10	1.91	1.91	1.91	1.92	1.92	1.92	1.57	1.71	1.76	1.58	1.50	1.64			
Via race composition																					
HIV programming (predicted)	Percent	Via family composition					Via age composition					Via education composition									
		Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other	Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other	Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other		
None	92.94	92.38	93.09	92.35	92.11	92.19	92.62	91.99	91.79	92.56	92.91	92.31	92.62	91.99	91.79	92.56	92.91	92.31			
Education/prevention	3.10	3.33	3.04	3.34	3.45	3.41	3.23	3.50	3.58	3.26	3.11	3.36	3.23	3.50	3.58	3.26	3.11	3.36			
Counseling	2.47	2.67	2.41	2.68	2.76	2.73	2.58	2.81	2.87	2.60	2.48	2.69	2.58	2.81	2.87	2.60	2.48	2.69			
Testing	1.50	1.62	1.46	1.63	1.68	1.67	1.57	1.71	1.76	1.58	1.50	1.64	1.57	1.71	1.76	1.58	1.50	1.64			
Via race composition																					
HIV programming (predicted)	Percent	Via family composition					Via age composition					Via education composition									
		Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other	Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other	Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other		
None	92.79	92.95	93.07	93.05	84.88	92.58	92.53	92.56	92.34	92.64	92.73	91.96	92.53	92.56	92.34	92.64	92.73	91.96			
Education/prevention	3.16	3.09	3.04	3.05	6.30	3.25	3.27	3.26	3.35	3.22	3.19	3.50	3.27	3.26	3.35	3.22	3.19	3.50			
Counseling	2.52	2.46	2.42	2.43	5.38	2.59	2.61	2.60	2.68	2.57	2.54	2.81	2.61	2.60	2.68	2.57	2.54	2.81			
Testing	1.53	1.49	1.47	1.47	3.44	1.58	1.59	1.58	1.63	1.56	1.54	1.72	1.59	1.58	1.63	1.56	1.54	1.72			

Table 3 continued

HIV programming (predicted)	Percent	Via central city versus suburb											
		Via size (attendance)					Via central city versus suburb						
		Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other	Roman Catholic (all episcopal)	Mainline Protestant—Episcopal	Mainline Protestant—Congregational	Conservative Protestant (all congregational)	Black Protestant	Other
None		93.48	95.13	90.89	91.04	91.41	92.58	91.39	91.98	91.64	92.79	88.05	93.07
Education/prevention	2.79	2.10	3.84	3.78	3.63	3.36	3.69	3.45	3.59	3.12	3.12	5.01	3.00
Counseling	2.29	1.70	3.22	3.16	3.03	2.79	3.04	2.82	2.95	2.53	2.53	4.24	2.44
Testing	1.44	1.06	2.05	2.02	1.93	1.77	1.89	1.75	1.83	1.56	1.56	2.69	1.50

<1 % in each comparison. This indirect effect of Catholic versus non-Black Protestant congregations was not consistent with the total effect of theology–polity on HIV programming. Second, Mainline Protestant—Episcopal congregation type showed an indirect (positive or negative) effect through clergy/staff on HIV programming compared with Conservative Protestant and Black Protestant types. In the former instance, the effect was small and positive, 0.5 % more Mainline Protestant—Episcopal congregations had HIV programming than Conservative Protestant congregations via this indirect effect. In contrast, the Mainline Protestant—Episcopal effect on HIV programming was roughly of equal magnitude, but in a negative direction, compared with Black Protestant congregations through the paths operating indirectly through clergy/staff. This indirect path contributed a small amount to the total effects of theology–polity on HIV programming in that Black Protestant congregations offered more HIV programming via clergy/staff.

Racial Composition

Among the sociodemographic variables, only racial composition mediated the effects of theology–polity on HIV programming (Table 5). Furthermore, the difference between Black Protestant congregations and the other theology–polity types was the only notable indirect effect of theology–polity on HIV programming (Table 3). Not surprisingly, 85 % of Black Protestant congregations had a predominately African American membership, versus less than 10 % of the other congregations (Table 5). A substantial share of the effect of theology–polity on HIV programming resulted from the racial composition of its congregation (Table 3). The indirect effect through racial composition resulted in a substantial positive association of Black Protestant congregations having HIV programming compared with the other theology–polity types. In each comparison, the indirect effect resulted in very notable 8 % higher rate of Black Protestant congregations having HIV programming. Additionally, the indirect effect clearly accounted for the differences in programming—3 % more education/prevention programs/services, 2 % more counseling programs/services, and 2 % more HIV testing programs/services. These findings were consistent with the direction and magnitude of the total causal effects of theology–polity on HIV programming.

Central City Versus Suburbs

Location of place of worship was also a major mediating mechanism. There were 2 patterns of significant indirect effects. First, Conservative Protestant congregations had lower rates (negative effect) of HIV programming than

Table 4 Significant effects between theology-polity groups on intervening variables and of intervening variables on HIV programming, except for sociodemographic variables (see Table 5)

Total effects of theology-polity ^a						Direct effects of theology-polity ^b							
	1	2	3	4	5	6		1	2	3	4	5	6
Roman Catholic (all episcopal)							1						
Mainline Protestant—Episcopal							2						
Mainline Protestant—Congregational							3						
Conservative Protestant (all congregational)			X				4						
Black Protestant (episcopal and congregational)	x	x	x	x			5						
Other (episcopal and congregational)				X			6	NONE					
Guest speakers ^b						Handicap access ^a							
Roman Catholic (all episcopal) (1)							1						
Mainline Protestant—Episcopal (2)							2						
Mainline Protestant—Congregational (3)							3						
Conservative Protestant (all congregational) (4)							4	x					
Black Protestant (episcopal and congregational) (5)							5	X					
Other (episcopal and congregational) (6)	NONE						6						
Health programming ^a						Service programming ^a							
Roman Catholic (all episcopal) (1)							1						
Mainline Protestant—Episcopal (2)							2	x					
Mainline Protestant—Congregational (3)	x						3	x					
Conservative Protestant (all congregational) (4)	x	x					4	x	x	x			
Black Protestant (episcopal and congregational) (5)			x	x			5	x			x		
Other (episcopal and congregational) (6)							6				x		
Faith worship programming ^b						Number weekly worships ^b							
Roman Catholic (all episcopal) (1)							1						
Mainline Protestant—Episcopal (2)							2	x					
Mainline Protestant—Congregational (3)	x	x					3	x	x				
Conservative Protestant (all congregational) (4)			x				4		x	x			
Black Protestant (episcopal and congregational) (5)			X				5		x	X			
Other (episcopal and congregational) (6)		x	x	X			6	x	x		x	X	
Number of paid clergy & staff ^a						Worship site ^b							
Roman Catholic (all episcopal) (1)							1						
Mainline Protestant—Episcopal (2)	x						2						
Mainline Protestant—Congregational (3)	x						3						
Conservative Protestant (all congregational) (4)	x	x					4						
Black Protestant (episcopal and congregational) (5)			X				5						
Other (episcopal and congregational) (6)	X				X		6						
Change in site ^b						Number of years existed ^b							
Roman Catholic (all episcopal) (1)							1						
Mainline Protestant—Episcopal (2)	x						2						
Mainline Protestant—Congregational (3)	x						3						
Conservative Protestant (all congregational) (4)	x	x	x				4	x	x	x			
Black Protestant (episcopal and congregational) (5)	x	x	x				5	x	x	x			
Other (episcopal and congregational) (6)	x	X					6		X	X			
Size (attendance) ^b						Location in central city ^a							
Roman Catholic (all episcopal) (1)							1						
Mainline Protestant—Episcopal (2)	x						2						
Mainline Protestant—Congregational (3)	x	X					3						
Conservative Protestant (all congregational) (4)	x						4	x	x	x			
Black Protestant (episcopal and congregational) (5)	x		X				5	x	x	x	x		
Other (episcopal and congregational) (6)	x	X	x	x			6					x	

^aTotal effects are differences that result from direct effect (if any) and all indirect effects (indirect effects can counter balance each other)

^bNo significant effect(s) on HIV programming at $p < 0.05$

*Significant effect on HIV programming at $p < 0.05$

x $p < 0.05$ (2 tail)

X $p < 0.05$ (1 tail)

Catholic or Mainline Protestant congregations as a result of differences in locations. The indirect effect of Conservative Protestant versus Mainline Protestant—Congregational was consistent with the total effect of theology-polity on HIV programming. Second, Black Protestant congregations had 4–5 % greater rates (marked upward pressure) of HIV programming than Catholic or the other Protestant congregations as a result of differences in location. This indirect effect of Black Protestant versus the other theology-polity types was consistent with the total effect of theology-polity on HIV programming.

Discussion

This study examined the current levels of HIV programming among diverse religious congregations in Greater

Cincinnati, with a particular focus on theology-polity type. The results showed that the overwhelming majority of congregations, fully 90 %, did not offer any HIV programs/services. We observed the greatest levels of involvement in Black Protestant churches, which constituted a relatively small proportion of churches in our survey; in contrast, Conservative Protestant congregations, the largest group, had the lowest levels of HIV involvement. In addition, as hypothesized, the results showed that HIV education/prevention activities were generally more prevalent in congregations than were counseling or HIV testing programs. However, congregations that offered counseling programs typically also offered education/prevention programs and congregations that offered testing programs typically also offered counseling and education/prevention programs. Finally, the findings indicated that the significant associations between congregation’s theology-polity and HIV

Table 5 Predicted distribution on sociodemographic composition of congregations by theology–polity from multinomial logistic regressions, all other predictors at their means

Theology–polity	Family composition ^a			
	Predominantly older singles and couples (%)	Mixed/other (%)	Predominantly families with children (%)	Total (%)
Roman Catholic (all episcopal)	20.8	68.1	11.1	100.0
Mainline Protestant—Episcopal	11.0	78.1	11.0	100.0
Mainline Protestant—Congregational	22.5	71.8	5.6	100.0
Conservative Protestant (all congregational)	11.2	73.8	15.0	100.0
Black Protestant (episcopal and congregational)	6.1	84.8	9.1	100.0
Other (episcopal and congregational)	9.1	72.7	18.2	100.0
	Age composition ^a			
	Predominantly 50+ (%)	Predominately 18–49 (%)	Mixed/other (%)	Total (%)
Roman Catholic (all episcopal)	16.4	12.3	71.2	100.0
Mainline Protestant—Episcopal	37.5	8.3	54.2	100.0
Mainline Protestant—Congregational	43.7	7.0	49.3	100.0
Conservative Protestant (all congregational)	16.0	27.3	56.7	100.0
Black Protestant (episcopal and congregational)	3.0	33.3	63.6	100.0
Other (episcopal and congregational)	27.3	9.1	63.6	100.0
	Race composition ^{b*}			
	Predominantly black (%)	Mixed/other (%)	Predominantly white (%)	Total (%)
Roman Catholic (all episcopal)	6.8	4.1	89.0	100.0
Mainline Protestant—Episcopal	4.2	6.9	88.9	100.0
Mainline Protestant—Congregational	2.8	4.2	93.0	100.0
Conservative Protestant (all congregational)	2.1	11.2	86.6	100.0
Black Protestant (episcopal and congregational)	84.8	6.1	9.1	100.0
Other (episcopal and congregational)	9.1	9.1	81.8	100.0
	Education composition ^a			
	Mixed/other (%)	Predominantly less than high school (%)	Predominantly high school or more (%)	Total (%)
Roman Catholic (all episcopal)	35.6	17.8	46.6	100.0
Mainline Protestant—Episcopal	22.2	18.1	59.7	100.0
Mainline Protestant—Congregational	19.7	11.3	69.0	100.0
Conservative Protestant (all congregational)	40.6	21.4	38.0	100.0
Black Protestant (all episcopal and congregational)	45.5	24.2	30.3	100.0
Other (episcopal and congregational)	9.1	0.0	90.9	100.0

^a No significant effect on HIV programming at $p < 0.05$

^b Race composition affects HIV programming, but only predominately white versus predominately black congregations for contrast of Black Protestant congregations versus all remaining theology/polity groupings

* Significant effect on HIV programming at $p < 0.05$

programming were fully mediated by several intervening variables, including general service and health programs, number of paid clergy/staff, location, and racial/ethnic composition of the congregation. Some other hypothesized

mediating mechanisms in HIV programming, for example, congregational size, were refuted.

Our study expands on previous research and is generalizable in several ways. It is representative of the southern

Midwest's religious landscape, sociodemographics, and HIV epidemiology; it is representative of metropolitan areas in that it includes central city and suburban locations (except for low immigrant numbers); and, it includes diverse theological orientations and religious organization types (except for more Catholics among the whites). Our findings could be applied and guide interventions in various southern Midwest, metropolitan, and theological contexts. At the same time, the study provides more detail about congregational HIV programming specifically in the southern Midwest, and in one metropolitan area, and enables comparing and contrasting with other locations. Previous research has focused primarily on high HIV prevalence areas [22, 28, 29] and has neglected lower prevalence areas that are experiencing increasing rates of HIV risk factors, shrinking resources, and persistent stigma [37].

The levels of congregational HIV programming found in this study are similar or greater than recent national estimates, which showed that 5.6 % of U.S. congregations provide programs to PLWHs [33] and, according to congregation members, 8 % conduct AIDS education activities [34]. Also, the levels of HIV programming in some of our study's congregations, especially Black Protestant, are high relative to the national rate of 10–18 % of congregations sponsoring any health programming [35]. However, it should be noted that our estimates differ somewhat from older reports. In 1997, 6 % of Philadelphia congregations offered care for PLWHs [3], 17 % of church members nationally belonged to a congregation that sponsored an AIDS ministry [8], and 17 % of congregations in New York State provided/facilitated HIV prevention services (in that study, Protestant and Catholic congregations were reported to be more likely than Jewish congregations to be involved) [29]. The most extensive level of involvement has been reported for Chicago Latino congregations: 52 % of those congregations reported some and 14 % reported a high degree of HIV involvement, predominately education activities; 14–33 % of the congregations had specific education programs and 6 % had AIDS care-volunteer groups [41].

There are several differences between our study and the earlier studies, including varying geographic/population contexts and research methodologies. The levels of programming in our study could be greater than in national reports because our study focused on a single metropolitan area and did not include rural areas, which are typically covered in national studies, but which may have lower rates of HIV programming. Our programming rates could also be greater than in some other studies because of differences in data collection methods and identification of HIV programming. We used multiple and detailed items to ascertain information on programming, which may have

yielded higher rates. Also, some studies may have focused on providing support services to PLWH by congregations while the need for such services has decreased because PLWH tend to live more in the mainstream and often do not disclose their HIV status [42]. The role of religious organizations in Western societies such as the U.S. has shifted from caring for people dying of AIDS to supporting efforts aiming to prevent/reduce infections and improve quality of life for PLWH. We think that our measure of HIV programming that focuses on prevention and counseling may capture better the current congregational HIV involvement vis-à-vis other studies.

In addition, some of the earlier studies offer limited comparisons of theology-polity groupings. Our study supports the previous literature describing the role of religious tradition (Black Protestant) and other community work [17, 26]. Our study also clarifies other research that reported no significant denominational differences (net of other factors) in congregational health programming and the key role of non-health service work [35]. Specifically, our findings elucidate that theology-polity plays an important role, but its relationship to HIV programming is mediated by other factors, in particular, other health and service programming.

The current study suggests that, aside from religious doctrine (culture), organizational factors such as polity and resources determine congregation-based HIV programming. Among resources, we found that non-HIV service work and the presence of paid personnel are associated with HIV programming, though variably by theology-polity type. This finding is partly consistent with a national study [35] that showed a strong association between non-health-related service and health-related programming, and the presence of general programs being a bigger factor for some congregations compared with others; however, the presence of paid staff was not a significant factor in health-related programming in that study. Differences in analytic procedures (path analysis versus regression analysis) or a varying importance of personnel in HIV programming versus non-HIV programming may explain this difference in findings between the two studies. A limitation of our study was lack of information about volunteer support; the earlier study found that volunteers play a large role in congregational health-related work [35].

Our results also point to the important role of location in congregational HIV programming. Congregations in inner-city neighborhoods are most likely to aim their programming at their own neighborhoods and communities, partly because of the acute needs and partly because their economic situation prevents additional outreach. Therefore, enhancing HIV programming through interfaith and community-based alliances is recommended [24, 43]. Other researchers have also advocated assessing the number of

PLWH in congregations and the relationship between congregations that have PLWH and their surrounding communities to better understand the need and opportunities for HIV-related outreach [17, 44].

Our study makes a key contribution to the literature by (1) testing a model of interrelated factors in congregation-based HIV prevention/counseling programs and (2) proposing a new structural equation modeling procedure incorporating variables of different measurement types. This effort was extensive for a single study and involved a compromise in terms of testing alternative hypotheses about relationships implied in our model (see Supplementary material 1 for further discussion). This limitation can be addressed in future studies. In addition, this study could have been affected by selection and response bias. We used multiple approaches to identify and reach as many congregations as possible, but we probably missed some small, less active congregations, and those with few resources and less established religions/theologies. Also, while key informants tend to report accurately on most measures, they are less accurate in reporting a congregation's social composition [39]. Furthermore, this study did not account for religious leaders' characteristics, especially their educational credentials, and ability to mobilize volunteers to influence health programming [35]. Also, this analysis is limited to information about whether a program or services were offered, and it does not consider programming content, program-specific resources, referrals to other organizations/agencies, or informal care/services, or whether a program was being developed. Such data will be examined in future analyses. Finally, the findings are limited to a certain geographic context and may not be generalizable at the national level. However, this study is likely representative of the southern Midwest and complements research conducted in other parts of the country [22, 27–29].

Conclusion

Those limitations notwithstanding, we conclude that the vast majority of religious congregations still do not offer HIV-related services. Those located in the inner city, that have solid organizational structures, and that are already invested in community work are most likely to offer HIV programs. Future research should identify the HIV-related needs in specific communities, role of contextual factors, and types of congregations that are strategically positioned to effectively carry out HIV work. Those congregations should be targeted both for furthering programs and providing models for other congregations that are not, but could be, more engaged in the local and national campaign against HIV. Also, the effectiveness of such programs—in terms of education/prevention program delivery to

populations at risk, reducing HIV risks and rates, and meeting needs of individuals affected by HIV, needs to be examined. Overall, the potential of congregations to influence the HIV epidemic is great and should be supported by policy and funding opportunities.

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References

1. Eke AN, Wilkes AL, Gaiter J. Organized religion and the fight against HIV/AIDS in the black community: the role of the Black Church. In: McCree DH, editor. *African Americans and HIV/AIDS*. New York: Springer; 2010. p. 53–68.
2. Hadaway CK, Marler PL. How many Americans attend worship each week? An alternative approach to measurement. *J Sci Study Relig*. 2005;44(3):307–22.
3. Cnaan RA. *The other Philadelphia story: How local congregations support quality of life in Urban America*. Philadelphia: University of Pennsylvania Press; 2006.
4. McAneny C, Saad L. Strong ties between religion commitment and abortion views. *Gallup Poll Monthly*. 1993;331:35–43.
5. Beckley RE, Koch JR. *The continuing challenge of AIDS: clergy responses to patients, friends, and families*. Westport, Conn.: Auburn House; 2002.
6. Chaves M. *The decline of American religion? (ARDA Guiding Paper Series)*. State College: The Association of Religion Data Archives at The Pennsylvania State University. <http://www.thearda.com/trh/papers/guidingpapers.asp>. 2011.
7. Chaves M, Tsitsos W. Congregations and social services: what they do, how they do it, and with whom. *Nonprofit Volunt Sector Q*. 2001;30(4):660–83.
8. Wuthnow R. *Saving America? faith-based services and the future of civil society*. Princeton: Princeton University Press; 2004.
9. Chaves M, Anderson S, Byassee J. *American congregations at the beginning of the 21st Century: National Congregation Survey*. 2009. Available at http://www.soc.duke.edu/natcong/Docs/NCSII_report_final.pdf. Accessed Feb 25, 2012.
10. Chaves M, Anderson SL. Continuity and change in American congregations: introducing the second wave of the National Congregations Study. *Sociol Relig*. 2008;69(4):415–40.
11. Roozen DA. *American congregations 2008*. Hartford: Hartford Institute for Religion Research; 2009.
12. Campbell MK, Hudson MA, Resnicow K, Blakeney N, Paxton A, Baskin M. Church-based health promotion interventions: evidence and lessons learned. *Ann Rev Public Health*. 2007;28: 213–34.

13. Kowalewski MR. All things to all people: The Catholic church confronts the AIDS crisis. Albany: State University of New York Press; 1994.
14. Keough L, Marshall K. Faith communities engage the HIV/AIDS crisis: lessons learned and paths forward. Washington, DC: Georgetown University; 2007.
15. Centers for Disease Control and Prevention. Racial/ethnic disparities in diagnoses of HIV/AIDS—33 states, 2001–2004. *Morb Mortal Wkly Rep.* 2006;55(5):121–5.
16. Harris AC. AIDS, sexuality, and the Black Church: making the wounded whole. New York: P. Lang; 2010.
17. Frenk SM, Trinitapoli J. U.S. congregations' provision of programs or activities for people living with HIV/AIDS. *AIDS Behav.* Published online Feb 4, 2012. Doi:10.1007/S10461-012-0145-x.
18. Agate LL, Cato-Watson D, Mullins JM, Scott GS, Rolle V, Markland D, et al. Churches United to Stop HIV (CUSH): a faith-based HIV prevention initiative. *J Natl Med Assoc.* 2005; 97(7 Suppl):60S–3S.
19. Aholou TM, Gale JE, Slater LM. African American clergy share perspectives on addressing sexual health and HIV prevention in premarital counseling: a pilot study. *J Relig Health.* 2011;50(2):330–47.
20. Baker S. HIV/AIDS, nurses, and the Black Church: a case study. *J Assoc Nurses AIDS Care.* 1999;10(5):71–9.
21. Coyne-Beasley T, Schoenbach VJ. The African-American church: a potential forum for adolescent comprehensive sexuality education. *J Adolesc Health.* 2000;26(4):289–94.
22. Derose KP, Mendel PJ, Kanouse DE, Bluthenthal RN, Castaneda LW, Hawes-Dawson J, et al. Learning about urban congregations and HIV/AIDS: community-based foundations for developing congregational health interventions. *J Urban Health.* 2010;87(4): 617–30.
23. Derose KP, Mendel PJ, Palar K, Kanouse DE, Bluthenthal RN, Castaneda LW, et al. Religious congregations' involvement in HIV: a case study approach. *AIDS Behav.* 2011;15:1220–32.
24. Williams MV, Palar K, Derose KP. Congregation-based programs to address HIV/AIDS: elements of successful implementation. *J Urban Health.* 2011;88(3):517–32.
25. Gilbert DJ. Focus on solutions: Black churches respond to AIDS: interview with Pernessia C. Seele, Founder and CEO of the Balm in Gilead. In: Gilbert DJ, Wright EM, eds. *African American Women and HIV/AIDS: Critical Responses.* Westport, Conn.: Praeger Publishers; 2003:153–8.
26. Fulton BR. Black churches and HIV/AIDS: factors influencing congregations' responsiveness to social issues. *J Sci Study Relig.* 2011;50(3):617–30.
27. Nunn A, Cornwall A, Chute N, Sanders J, Thomas G, James G, et al. Keeping the faith: African American faith leaders' perspectives and recommendations for reducing racial disparities in HIV/AIDS infection. *PLoS ONE.* 2012;7(5):e36172.
28. Coleman JD, Lindley LL, Annang L, Saunders RP, Gaddist B. Development of a framework for HIV/AIDS prevention programs in African American churches. *AIDS Patient Care STDs.* 2012;26(2):116–24.
29. Tesoriero JM, Parisi DM, Sampson S, Foster J, Klein S, Ellemberg C. Faith communities and HIV/AIDS prevention in New York State: results of a statewide survey. *Public Health Rep.* 2000;115(6):544–56.
30. Wood JR. Leadership in voluntary organizations: the controversy over social action in protestant churches. New Brunswick: Rutgers University Press; 1981.
31. Scherer R, editor. *American denominational organization: a sociological view.* William Carey: Pasedena; 1980.
32. Beckford JA. *Religious organizations.* The Hague: Mouton; 1975.
33. Nunn A, Eng W, Cornwall A, Beckwith C, Dickman S, Flanigan T, et al. African American patient experiences with a rapid HIV testing program in an urban public clinic. *J Natl Med Assoc.* 2012;104(1–2):5–13.
34. Lindner EW, Welty MA. *Congregational Health Ministry Survey Report.* National Council of Churches USA, 2007. Available at <http://www.nccusa.org/pdfs/healthsurveyfinal.pdf>. Accessed on Feb 25, 2012.
35. Trinitapoli J, Ellison CG, Boardman JD. U.S. religious congregations and the sponsorship of health-related programs. *Soc Sci Med.* 2009;68(12):2231–9.
36. Centers for Disease Control and Prevention. HIV in the United States: at a glance. http://www.cdc.gov/hiv/resources/factsheets/PDF/stats_basics_factsheet.pdf 2013 Feb. Accessed 23 March 2013.
37. Ohio Department of Health. *HIV/AIDS integrated epidemiological profile for Ohio: 2011 Edition.* Columbus: Ohio Department of Health; 2012.
38. Centers for Disease Control and Prevention. Results of the expanded HIV testing initiative –25 jurisdictions, United States, 2007–2010. *Morb Mortal Wkly Rep.* 2011;60(24):805–10.
39. Frenk SM, Anderson S, Chaves M, Martin N. Assessing the validity of key informant reports about congregations' social composition. *Sociol Relig.* 2011;72(1):78–90.
40. Pedhazur EJ. *Multiple regression in behavioral research: explanation and prediction.* 3rd ed. Fort Worth: Harcourt Brace College Publishers; 1997.
41. Hernandez EI, Burwell R, Smith J. *Answering the Call: How Latino churches can respond to the HIV/AIDS Epidemic. A study of Latino congregations in Chicago.* Chicago: University of Notre Dame Institute for Latino Studies; 2007.
42. Nokes KM. Symptom disclosure by older HIV-infected persons. *J Assoc Nurses AIDS Care.* 2011;22(3):186–92.
43. Griffith DM, Campbell B, Allen JO, Robinson KJ, Stewart SK. *YOUR Blessed Health: an HIV-prevention program bridging faith and public health communities.* *Public Health Rep.* 2010;125(Suppl 1):4–11.
44. Frenk SM, Chaves M. Proportion of US congregations that have people living with HIV. *J Relig Health.* 2012;51(2):371–80.