

Religious Teachings and Influences on the ABCs of HIV Prevention

Abstain. Be faithful. Use condoms. The ABCs of HIV prevention are now well-known world-wide. However debates regarding the relative importance of each of these and the obstacles to their effective implementation abound, especially with regard to policy-making in areas of high HIV prevalence such as the “AIDS belt” of sub-Saharan Africa (SSA). The role of Faith Based Organizations (FBOs) in AIDS mitigation has been front and center in these debates -- anecdotal evidence suggests that although religious leaders in this region may effectively promote A & B, many consider one other key approach of international HIV prevention programs - condom use - to be illicit. Given the magnitude of the epidemic in SSA, the widespread participation of Africans in religious organizations, the highly politicized nature of international sexual politics, and the large amounts of money flowing from donor organizations through plans like the UN Millennium Project and the President's Emergency Plan For AIDS Relief (PEPFAR), it is surprising that there has been little systematic assessment of the extent to which, and the mechanisms by which, FBOs in SSA facilitate or impede effective responses to the epidemic.

This study examines the relationship between religion and HIV-risk behaviors in rural Malawi, giving special attention to the role of religious congregations (RCs), the FBOs with which rural Africans have most immediate contact. The first aim is descriptive – to identify overall patterns and variations in what religious leaders in rural Malawi teach about HIV and about sexual behavior in light of the epidemic. Variation by religious tradition and region will be of particular interest here. The second aim is to assess how (if at all) religious organizations impact the behavior of individual members. I examine three outcomes that correspond with the ABCs of HIV prevention: abstinence (for unmarried individuals), fidelity (for married persons),

and condom use, and directly test the relationship between the characteristics of religious organizations (doctrines, strictness) and the reported behavior of individuals using multi-level models. I also examine the relationship between both religious involvement and risk behaviors (A, B, and C) and actual HIV status. Finally, based on the analysis of in-depth interviews with religious leaders, I propose adding “D” for “divorce” – more accurately the regulation of marriage - to understanding how religious leaders and the climate of religious congregations may contribute to or hinder HIV prevention in sub-Saharan Africa.

BACKGROUND

A growing amount of evidence suggests that the associations between religion and HIV risk behaviors in SSA are strong enough to be taken seriously. At least three studies have reported a negative association between global measures of religiosity (such as attendance or religious commitment) and reports of sexual risk behaviors. A recent analysis of married men in rural Malawi reports that attendance at religious services was associated with lower odds of reporting several risk factors including a recent extramarital partner, perceived likelihood of HIV infection, and ever having had an sexually transmitted infection (STI) (Trinitapoli and Regnerus 2006). A study of first-year college students in South Africa finds that religious students had a lower propensity to engage in sexual intercourse and a later age of sexual debut (Nicholas and Durrheim 1995). More recent research on adolescents in Zambia reports that young women affiliated with conservative religious groups are more likely to delay sexual initiation (Agha, Hutchinson, and Kusanthan 2006). Both of these studies did reveal, however, a flipside to the protective observed association between religion and risky sexual behaviors: religious individuals who are sexually active are less likely to report “safe sex” practices like condom use.

Another handful of studies has investigated the association between religious denominational membership and HIV-related risk behaviors using broad denominational categories. Evidence from South Africa (Garner 2000), Zimbabwe (Gregson et al. 1999), Brazil (Hill, Cleland, and Ali 2004), and Malawi (Trinitapoli and Regnerus 2006) suggests that individuals belonging to certain behaviorally strict denominations, like Pentecostalism and certain African Independent Churches (AICs), may exhibit reduced risk of HIV infection, due in part to their reduced likelihood of having extramarital partners when compared with members of other religious groups. Other research, however, suggests that due to restrictions on sexual behavior and the consumption of alcohol and the practice of circumcision, Muslims in Africa may experience reduced levels of risk for contracting HIV (Gray 2004; Gray et al. 2000). Though specific denominational differences vary by region, these studies suggest that a) differences in religious teaching on sexual behavior and b) differences in church regulation might explain much of the observed differences reported sexual behavior as well as demographic patterns like early adult mortality (a possible indicator of AIDS) and non-marital fertility.

Why Religion Matters

The assertion that religion influences the behavior of individuals can be traced back to the foundations of sociological thought and is becoming more widely accepted as the level of rigor and theoretical soundness of this body of evidence has increased. Few would argue that religion does not matter, but a number of culturally specific factors suggest that religion may be a particularly important force in certain contexts, such as in rural SSA.

Aside from religious organizations, the rural African setting offers limited opportunities to participate in other formal organizations. In Malawi, some individuals belong to farmers'

cooperatives (32%), drama clubs (9%), village health committees (7%), or microcredit groups (5%), but involvement in such groups is limited and the frequency with which these groups meet is comparatively low. Regular participation in a church-based women's group or choir, on the other hand, is common. In Uganda, 92 percent of the population attends Roman Catholic or Anglican religious services regularly (Green 2003); similarly high levels of religious participation have also been observed in Nigeria, Ghana, Mozambique, Zambia, and Zimbabwe. Nearly two thirds of a sample of rural Malawians reports attending religious services at least every week, while only ten percent reports attending only once a month or less (Trinitapoli and Regnerus 2006). Furthermore, though many Malawians engage in traditional practices, this is almost always in addition to – and not instead of - the formalized religion with which they identify. When asked about their religious affiliation, few Malawians report “no religion,” and a large number of those who do also go on to name a religious congregation that they regularly attend.

Messages about AIDS might be effectively disseminated through the educational and health systems, but a limited number of individuals participate in these. Many rural Malawians rely on traditional healers when they encounter health problems and rarely (if ever) visit a doctor or nurse in a clinic or hospital setting. In contrast to the near-universal participation in religious congregations, levels of education in rural Malawi are very low. According to the 2004 MDICP, nearly 20 percent of rural Malawians have *never* attended school and only 11 percent report having finished secondary school. Furthermore, due to missionary influences, most educational and health institutions in this part of the world have religious foundations (Woodberry 2004). In Uganda, for example, approximately 60 percent of all health facilities are private and are

affiliated with a RO, and a similarly high proportion of Ugandan schools are run by ROs (Green 2001).

In short, as the most common formal organizations in rural SSA, religious organizations could play a key role in disseminating information about and mitigating the consequences of AIDS. Leaders at the congregational level have frequent contact with members; they are also highly esteemed and are among the most influential members of their communities (Pfeiffer 2004). Yet congregations and their leaders may vary in important ways on a set of key characteristics that may influence responses to the epidemic. These are: (1) the sermons and informal lessons through which religious norms are established and adapted; (2) the institutional practices of the religious organization itself, such as mechanisms of social support and social control.

Doctrines and teachings

Consistent with a longstanding suspicion of religion among social scientists (Stark and Finke 2000; McGuire 2002), religious beliefs have been considered barriers to HIV prevention (Caldwell et al 1999; Rankin et al. 2005), and the opposition of many ROs to condom use has been featured in international discussions of HIV prevention programs. Yet this opposition to condom use is likely to vary both across denominations and across individual congregations; in fact, a growing body of evidence suggests that religious opposition to condom use is not monolithic at all – even among leaders of the traditions that take a rather doctrinaire stance against contraception.

A recent editorial in *The Lancet*, for example, reported that 65 out of 100 Catholic priests polled in the UK agreed that it was morally acceptable to promote condom use in order to curb

the spread of HIV ((Editorial) 2006). Highly-publicized statements by Anglican bishop Tilewa of The Gambia and by Reverend Japhet Ndhlovu, the general secretary of the Council of Churches in Zambia (CCZ) also demonstrate deviation from the commonly-held notion that religious leaders in SSA unilaterally oppose condom use. According to Bishop Tilewa, “We are aware that we live in a world where not everybody is holy and for some people abstinence or one partner is not a viable proposition, therefore, the only sensible and responsible line of action is a use of condoms” (Colombant 2005). While Ugandan president Museveni is being accused of pushing to drop the “C” from ABC at the urging of American religious conservatives (Wakabi 2006), a study of religious services in two districts of rural Malawi found evidence that although condoms were often explicitly prohibited, some religious leaders have relaxed prohibitions on condom use and encourage members (especially youth) who “cannot abstain” to use a condom in order to avoid contracting “this disease with no cure” (Trinitapoli 2006).

Differing opinions on the acceptability of condom use are certainly not the only religious doctrine of importance to individual efforts to prevent HIV. Numerous studies have confirmed that messages of abstinence and fidelity are commonplace in religious services throughout SSA (Jenkins 2006), including: South Africa (Garner 2000), Mozambique (Pfeiffer 2002), Nigeria (Orubuloye, Caldwell, and Caldwell 1993), and Malawi (Trinitapoli 2006); however the frequency and intensity of these messages varies substantially. Garner (2000) notes that while none of the four churches, representing four denominations, that he studied in South Africa condoned extramarital sex, they varied considerably in their emphasis on sexual matters and marital fidelity, as well as their tolerance for deviation from the denomination’s sexual norms. Though the frequency of religious messages on sexual morality in the context of AIDS can be quite easily observed and documented, directly measuring the impact of exposure to such

messages on sexual behavior at the individual level has proven more difficult. Scholars like Green (2003) have argued that the successful reduction of HIV prevalence in Uganda between 1990 and 2000 may be due, in part, by the effective promotion of primary behavior change (abstinence and fidelity) by the country's religious organizations and leaders. Though convincing, such arguments are based on suggestive evidence, as there have been no empirical assessments of whether or not religious organizations have changed behavior – or how.

Institutional practices

Institutional practices range from tithing to the provision of services, such as organized care of the sick or “funeral committees” to help the families of the deceased, and from individual activities of confession and penance (in Catholic churches) to public expressions of solidarity such as healing ceremonies. Mechanisms for social support and social control may be particularly important in shaping responses to the epidemic (Trinitapoli 2006; Trinitapoli and Regnerus 2006). Social control mechanisms include such practices as sanctioning members who have deviated from the RO's doctrines; social support mechanisms include both group prayers for those attempting to resist temptation as well as activities to support those affected by AIDS. The effectiveness of these mechanisms of social support and social control is likely to vary depending on the extent to which members of a congregation are “channeled” into more—or less— exclusive and overlapping sets of relationships within the congregation, relationships that may augment or replace social networks based on extended family, clan, or ethnicity (Mkandawire 2000; Stark and Finke 2000).

In the African context, the practice of “visiting” is a key aspect of social control. By channeling members into congregational activities (e.g. Bible Study, committees to care for

orphans) congregations also increase the density of personal networks and, in turn, the social support (and social control) of its members (Ellison and George 1994). According to the moral communities thesis, without the support of a tight-knit congregation, the influence of individuals' own religious commitments or moral proscriptions on their personal behavior becomes weak.

In rural areas of SSA, the common practice of “visiting” absent members serves several purposes. When an absent member is found not to be sick, visiting members encourage the “lazy Christian” to return and resume “praying with them.” Absence from weekly religious services that is not due to illness is almost always attributed one of two vices: laziness or greed. Individuals often walk long distances to get to their places of worship, and need to be encouraged to do so – especially if a night of heavy drinking has prevented their willingness or ability to make the trek. Those who prefer to work in their own gardens during the time they “should” spend worshipping at their church or mosque are encouraged to give their time and energy to God instead of focusing exclusively on their own prosperity.

Under other circumstances, visiting takes on a more disciplinary role. Reporting on the role of FBOs in Uganda, Green (2003) describes support groups and workshops in which people living with HIV/AIDS (PLWHAs) confess their (sexual) misconduct and publicly commit to changing their behavior and living a new life. He likens the approach to Alcoholics Anonymous (AA), emphasizing that while this approach may not work for everyone, it does have a better record of changing behavior than any other.¹ While lay members usually organize visits to the sick and the “lazy”, in rural Malawi, some religious leaders conduct home visits themselves – either at the urging of their members or on their own volition. Many clergy make home visits to confront individuals about suspected sexual misconduct, in particular when a suspicious spouse

¹ Some recent evidence disputes that AA is, actually, more effective, but the addiction literature has generally held this assertion to be true.

or a concerned friend requests such an intervention. Other clergy take up the responsibility of sexual surveillance themselves – hanging out at the trading centers or near bars, and just keeping a watchful eye generally speaking to make sure that members are not tempted to engage in extramarital sex (Trinitapoli 2006). Again, the frequency and intensity of this practice varies widely among congregations, and though anecdotal evidence from religious leaders and members alike suggests that it is indeed an effective form of social control, an empirical assessment of its efficacy has never been conducted.

METHODS

Data

Data for this paper come from several different sources. First, in order to document general patterns in what religious leaders from different traditions teach about health and sexual behavior in context of high HIV prevalence, I utilize survey data from the Malawi Religion Project (MRP). The identification of broad patterns is further supplemented by 175 in-depth interviews with religious leaders that were collected by the Malawi Religion Project (MRP) in 2005. The systematic analysis of these data focuses on identifying patterns in teachings about the three components of the now-infamous ABCs of HIV prevention, as well as the ways in which religious leaders contribute to D – the regulation of marriage. In order to assess the degree to which these messages influence behavior at the individual level, the quantitative analyses utilize the linked MRP-MDICP dataset.

The Malawi Diffusion and Ideational Change Project Wave 3 of the Malawi Diffusion and Ideational Change Project (MDICP-3), collected during the summer of 2004, provides the foundation for the quantitative analyses in this study. The MDICP is a longitudinal household survey conducted in three distinctive districts of Malawi, one in each of the three regions of the country: Rumphi District, located in the Northern region; Mchinji District, located in the Central region; and Balaka District, located in the Southern region. The sampling strategy for the MDICP was not designed to be representative of the national population of rural Malawi, although the sample characteristics closely match the characteristics of the rural population of the Malawi Demographic and Health Survey. The target sample for the first MDICP wave (fielded in 1999) was 500 ever married women age 15-49 in each district, plus their husbands. The third survey wave added a sample of approximately 400 adolescents age 15-29 in each district.²

The first two waves of the MDICP (carried out in 1998 and 2001) focused on two key empirical questions: the roles of social interactions in (1) the acceptance (or rejection) of modern contraceptive methods and of smaller ideal family size; and (2) the diffusion of knowledge of AIDS symptoms and transmission mechanisms and the evaluation of acceptable strategies of protection against AIDS. Beginning with the third wave in 2004, the MDICP expanded in several directions: (1) A sample of adolescents (age 15-24, married and unmarried) was added to the base sample of ever-married women and their husbands; (2) Biomarkers for HIV and other sexually transmitted infections were collected from all respondents who consented, and the results were provided to those who requested them; (3) GPS coordinates were collected for all sampled households. In addition, Wave 3 of the MDICP contains an expanded religion

² Detailed information on the sampling strategies employed in the MDICP is available from the Social Networks Homepage. (Networks 2001; 2004)

component, which includes more refined measures of religious affiliation than is available in any other comparable dataset, as well as detailed information on religious beliefs and practices. The unique availability of detailed information on religious beliefs and practices, as well as biomarker data indicating HIV status, makes the MDICP-3 the ideal data source for exploring the research questions guiding this study.

Malawi Religion Project The Malawi Religion Project (MRP) is a multi-method sister project to the MDICP, designed to collect data on religious organizations in order to examine how these organizations and their “moral communities” influence responses to AIDS in a sub-Saharan African country with a major epidemic. The sample for this study is based on a strategy known as hypernetwork or multiplicity sampling (Chaves et al. 1999; McPherson 1982). The justification for this technique is based on the argument that a sample of organizations derived from a random sample of individuals constitutes a random sample of organizations. The procedure involves asking a random sample of individuals to name the organizations with which they are involved; this list of named organizations produces a random sample of organizations. Hypernetwork sampling is particularly appropriate in situations where no comprehensive list of organizations exists and the enumeration of such organizations is impossible. Generating a hypernetwork sample of organizations requires starting with a random sample of individuals. The MRP was conducted in conjunction with the Malawi Diffusion and Ideational Change Project (MDICP-3), described above. The 2004 MDICP survey included a set of items asking respondents to report the name and location of their religious congregation and the name of their religious leader.

Defining the sample of congregations for the MRP proved complicated, as congregations in rural Malawi are frequently hard to identify. Virtually none have a sign bearing the congregation's name, and many do not meet in their own building at all. It is common, for example, for congregations to share a building with other congregations or to not have a building at all (e.g., in one of the sites three of the congregations met under a tree). Often times a single congregation is known by several different names (including, but not limited to, the name of the village, the name of the current leader, or the name of the founding leader or mission). As such the process for refining the congregation list is a multi-stage approach. 1789 of the 1834 female respondents in the 2004 MDICP reported attending religious services and were subsequently asked to name their religious congregation. Very few MDICP respondents (8 total) refused to name a congregation when asked to do so. These respondents provided a total of 1039 different congregation names. To create the sample of congregations, I identified all different spellings and similar names within the initial list of congregations (N=1039), reducing the list to approximately 240 potential unique congregations. Discussions in the field daily by the research team, interview supervisors and interview scouts served to further clarify additional multiple namings or difficult to identify congregations. After removing multiple namings, the 169 congregations in the final sample represent interviews with all but approximately 15 of those in the list of 240. Of those 15, approximately five congregations disbanded from 2004-2005. This means that the number of non-responding congregations is no more than ten (out of almost 190).

Once the congregational sample was generated, the leaders of nominated congregations were located and approached. The MDICP is a face-to-face interview conducted by experienced and well-trained local interviewers with intimate knowledge of the villages in which the survey was conducted. In 2005, the MRP data was collected using many of the same interviewers who

collected data for the 2004 MDICP respondents. This means that, when turning to collection of the congregational data, the interviewers were more equipped to locate the congregations named by MDICP respondents, identify an informed leader to interview, and follow up with an in-person visit. Using the same field staff also permitted re-contacting MDICP respondents in cases where additional locational information about congregations was needed. In the end, the MRP attempted to collect data from a total of 185 congregations, and successfully collected data from 174 different leaders representing 169 congregations.³ Figure 1 provides a graphic representation of the construction of the MRP sample.

FIGURE 1 ABOUT HERE

In 2005, the MRP successfully surveyed 98% of the leaders of all the congregations respondents interviewed by the third wave of the MDICP reported attending. A 12-page questionnaire focused on the three characteristics the literature review suggests are key to shaping the responses of congregational members to the AIDS epidemic, such as what the leader thinks the Bible (or Koran) has to say—if anything—about the HIV/AIDS crisis and the number and type of venues for interaction among congregation members, such as prayer meetings, Bible Study and committees for mitigating the effects of AIDS. The survey allows us to provide a basic numerical description of rural congregations. It includes data on the *characteristics of the organization* (e.g. number, gender and age composition of the membership, the governance of the congregation, sources of income), as well as questions about the *impact of AIDS* on the congregation (e.g. estimates of AIDS-related deaths among members, estimates of the burdens of care for orphans and the sick by congregation members).

In addition to the survey, the MRP conducted in-depth interviews with all of the congregational leaders who respond to the leadership survey. These interviews were digitally

³ In five congregations, two leaders were interviewed – a mistake, but not really a problem.

recorded and transcribed. These were semi-structured interviews, designed to get the congregational leader to talk at length, providing material from which to interpret his theological orientation and his views about AIDS. For example, the sample interview guide asked the leader to talk about views of AIDS in several contexts (sermons, private advice to congregation members): responses will be used to discern whether he considers AIDS a punishment on the community or a punishment on individuals.

Such data are necessary for a richer description of variation across congregations and denominations than is possible on a survey. The interview data provide more in-depth information about the leader's basic theological orientation, for example whether his responsibility is to save souls for the hereafter or to guide members of his flock to cope with the vicissitudes of life today. Does the leader consider the epidemic to be God's punishment on entire community or only on individuals who have strayed from religious teaching? If s/he believes that AIDS can be avoided, what does s/he advise the members of his congregation to do—can AIDS be avoided only by prayer, or only by fidelity to one's spouse, or only by using condoms? Or does this depend on the circumstances? Has s/he attended district or national denominational meetings, and, if so, what, if anything, was said about HIV prevention and AIDS mitigation?

Linked Data Several pieces of data given by each MDICP-3 respondent were used to assign the respondent to an MRP congregation: congregation name, leader's name, congregation village/location, respondent's village, and religious tradition. In a majority of cases, the identity of the named congregation was abundantly clear. Given the low rates of literacy in our research sites, variations in spelling was the most common problem. The following verbatim responses,

for example, represent some of the answers given by respondents who attend Namonde Mosque, the largest religious congregation in our sample: Namonde Mosque, Naclonde Mosque, Namond Prayers (Muslim), Abidi prayers Friday (Namonde village). In other cases, however, it was more difficult to discern the congregation to which congregation the respondent was referring. A dummy variable indicating relative difficulty in assigning the respondent to the named congregation was created and implemented in ancillary analyses (not shown). There were a total of 31 cases in which a respondent who named a congregation could not be assigned to one of the MRP congregations.

Measures

Dependent Variables.

Nonmarital Partner All survey respondents were asked about their sexual history. Adult respondents were asked to give an initial or fictional name of the last three sexual partners they had in the past 12 months, including their spouse. They were then asked a series of questions about the named partners. Adolescent respondents were asked to do the same for their past two sexual partners; there was no time frame specified for adolescents. Respondents were asked to characterize the type of relationship they had with each partner. The possible responses for adults were: HUSBAND/WIFE/LIVE-IN PARTNER; STEADY BOYFRIEND/GIRLFRIEND/ FIANCE; INFREQUENT PARTNER; AFISI (HYENA); ONE-NIGHT STAND/HIT-RUN; CLIENT; and OTHER. For adolescents, the response categories were: STEADY BOYFRIEND/ GIRLFRIEND; EXPECTED SPOUSE; INFREQUENT PARTNER; OTHER FRIEND; ONE-NIGHT STAND/HIT-RUN; CLIENT; and OTHER. For both adolescent and adult respondents alike, sexual partners who were not identified as a spouse were coded as a nonmarital partner.

Respondents reporting having at least one nonmarital sexual partner were coded as 1 on this variable, while respondents who listed only spouses as sexual partners, or no sexual partners at all were coded 0.

Condom Use A series of questions about condom use are included among the questions asked about each of the sexual partners a respondent reported. Respondents were asked 1) did you ever use a condom with this partner? 2) why did you use a condom with this partner? and 3) with what frequency did you use a condom with this partner? Two measures of condom use were constructed and considered for use in this study: *ever* use and *consistent* use. Respondents who report ever using a condom with any of their sexual partners are coded 1 for ever using condoms; respondents who have not used a condom in the past year are coded 0. Respondents who report *always* using a condom with *all* of their sexual partners are coded 1 for consistent condom use. Because reports of consistent condom use were too low to analyze (4 cases), this study focuses on ever use.

HIV Status Unlike previous studies that focus exclusively on risk behaviors as the primary outcome of interest, this study uses an objective measure of actual HIV status, obtained through the biomarker data collected by the MDICP-3. The testing method used by MDICP for HIV was not anonymous, since identifying individuals who were tested was necessary to inform them of their test results. However, the MDICP ensured confidentiality of the respondents who agreed to be tested. The respondents' unique biomarker ID was kept on every specimen collected from them, and it was linked to the respondent's computerized data. No personal identifier (such as the name of the respondent or the village where he or she lives) was kept on the specimens. The

HIV tests were done with oral swabs. ORASURE saliva test was used for HIV; positive results were confirmed through Western Blot on the same specimen. These tests were selected according to guidelines of the Malawian Ministry of Health and in conjunction with specialists at Lilongwe Central Hospital. The MDICP STI/HIV testing protocol was approved by the IRB in Malawi and the United States. Respondents who tested positive for the HIV-1 virus are coded 1 for this variable.

Independent Variables.

The key independent variables of interest are the respondent's report of religious affiliation, their report of religious service attendance, and several additional measures of religious beliefs and practices. Religious service attendance is a reliable and traditional measure of the public and collective expression of religion that captures involvement in an adult-child moral community across cultures and in many religions. Our attendance measure is ordinal, and was derived from the question "When was the last time you went to church (or mosque)?" Respondents could answer "in the last week," "in the last month," "last 2-6 months," "more than 6 months ago," or "never." The attendance variable has been reverse coded, so larger values correspond with a more frequent pattern of attendance. Overall, levels of religious participation in rural Malawi are high, with only 10 percent of the sample reporting that they attend once a month or less frequently. The attendance measure employed in these analyses ranges from 1-3, with the high value representing those who attend most frequently.

Respondents were asked about their religion; based on their response, the interviewer assigned them to one of the following categories: No Religion, Catholic, Quadriya Muslim, Sukuti Muslim, Church of Central Africa Presbyterian (CCAP), Baptist, Anglican, Pentecostal,

Seventh Day Adventist, Jehovah's Witness, Indigenous Christian, Indigenous Non-Christian, and Other. Respondents who answered "Other" were asked to further specify, and their answers were recorded verbatim and were subsequently grouped into the appropriate category. All respondents were also asked to name the church or mosque to which they belong. Respondents who were missing data on the denomination question were categorized based on information gathered about the church or mosque they most frequently attend. After careful consideration, several denomination categories were collapsed to a total of 6 categories used here in this analysis: Catholic, Muslims, Pentecostal, AIC, traditional mission Protestant (i.e., Presbyterian, Anglican, Baptist), new Mission Protestant (Seventh Day Adventist, Church of Christ, Jehovah's Witness).

The analyses presented here include a series of control variables, including sex, age, a dichotomous indicator that the respondent was previously married, a dichotomous measure of the respondent's successful completion of secondary education, a continuous measure of the value of the animals their household owns as an indicator of respondent's socio-economic status, and a dichotomous indicator of their region or survey site (i.e., Balaka, Mchinji, or Rumphu).⁴ Because condom use, in particular, is sensitive to the respondent's perceived level of risk, this model includes several measures of baseline risk behavior, including the respondent's total number of sexual partners⁵ and reporting a transactional sex partner in the past 12 months. Additionally, we use the second outcome variable (recent nonmarital sexual partner) as an additional predictor of

⁴ Because the dependent variables are self-reports of sensitive behaviors, ancillary analyses (not shown) included an indicator of the likelihood that the respondent would give socially desirable survey answers, which was insignificant in all of the estimated models and, therefore, was excluded from the analyses presented here. Additional information about the construction of the social desirability scale used here is available from the author upon request.

⁵ Survey respondents were also asked the question, "How many people overall you have ever had sex with?" Because the distribution of this variable was skewed, outliers were recoded to the 99th percentile, which resulted in a range of 0-20. Close to nine percent of the total sample did not answer this question, either because they refused or reported that they did not know how many sexual partners they have had. Rather than excluding all these cases from our analyses, I performed mean substitution for these cases and created a dummy variable indicating missing data for this variable that will be included in all analyses using the total number of sexual partners measure.

respondents' self-reported condom use. In order to control for social desirability issues that are present when relying on self reports of sensitive sexual behaviors, a carefully constructed measure of social desirability bias is included (as a control) in all the multi-level models presented here. Means and ranges of all individual-level variables for each of the selected samples are not discussed here, but are displayed in Table 4.

In order to estimate the associations between religious messages and sexual behavior at the individual level, this study utilizes self reports from religious leaders of the congregations MDICP respondents attend. I evaluate the relative impact of formal religious messages (those given in weekly religious services), informal advice from the congregational leader, and the leader's assessment of the sexual behavior of his congregants. First, the frequency with which the leader discusses AIDS and sexual morality in weekly religious services ranges from 0-4 (Never, Seldom, About Monthly, Almost Every Week, Every Week). Second, leaders were asked if they ever privately advise congregation members on a number of AIDS-related subjects; affirmative responses were followed-up with questions about the frequency of such advice. While only 37 percent reported ever advising members to use condoms, a full 95 percent reported privately advising members on an individual basis to cease promiscuous behavior. Of these, approximately 51 percent of leaders report conducting such "sexual surveillance" on a weekly basis. Two dummy variables indicating informal practices are included in these analyses: a) privately advising condom use and b) sexual surveillance: privately advising congregants to stop promiscuity on a weekly basis. Third, leaders were also asked their level of agreement with the following statements: "Promiscuity is rampant among adolescents in your congregation" and "Marital infidelity is rampant among members of your congregation." The responses ranged from 1-4, with categories: strongly disagree, disagree, agree, strongly agree. Dummy variables

indicating “strong agreement” with each of these statements are employed in the quantitative analyses, to indicate the most extreme assessment of the sexual climate of the congregation.

Analytic Strategy

Because this paper examines the role of religious context (e.g., congregations) as it relates to the relationship between religion and HIV-related behaviors, multi-level models will be used to estimate the associations. The idea behind this approach is that individuals are embedded in groups and contexts such as social networks, churches, schools, and villages. Researchers have frequently, but erroneously, included both individual and contextual variables in regression models with data from individuals in clustered sources like schools or neighborhoods. Maximum likelihood and ordinary least squares estimators are produced under the assumption that individual observations are independent of each other – that, for example, the level of religiosity in a village stands independent from the religiosity of an individual residing there. Persons in groups and contexts experience similar influences from those contexts, but the models assume independence of observations. I estimate random effects models that correspond to the three components of the ABCs of HIV prevention in Stata 9 using the *xtlogit* command for multi-level models of a binary outcome variable. Note that these models utilize different samples – the adolescent sample for the “abstinence” model, the married adult sample for the “faithfulness” model; all sexually active individuals in the sample are included in the “condom use” model. The HIV status model includes all respondents who participated in the voluntary testing and counseling (VCT) portion of the MDICP-3 and have ever been sexually active.

Unfortunately, the cross-sectional nature of these analysis, do not prevent us from avoiding the time ordering problem that often plagues studies of sexual behavior. That is, our

primary predictor variables are measured at the time of the survey interview (e.g., when did you last attend religious services), yet the outcomes were measured over a longer period of the past. Thus religious affiliation and religiosity *may* have changed in response to their sexual behavior and not vice-versa. I thus make no claims concerning the causal effects of religion based on the cross-sectional analyses conducted here.

This study employs several mechanisms to address the concerns about selectivity – none of which give cause to believe that selection effects are driving the results presented here. First, in 2004, just under 12 percent of the MIDCP sample reported having switched churches in the five years prior to the interview. Assuming that this reported switching was evenly distributed over the five year period and stayed constant in the year between MDICP-3 and MRP fieldwork, I estimate that no more than 2 percent switched congregation in the period between the two data collection projects.⁶ Second, data on religious switching from the MDICP-3 shows that the most common reason individuals give for switching is marriage; over 30 percent of those who switched reported this reason (see Appendix A). Conflict in the congregation and excessive strictness were the second most common explanations given, however these were much less common.⁷ To be sure, some individuals in rural Malawi are driven to leave their congregations because they find them too strict – perhaps on the very issues of sexuality examined here. The qualitative evidence, however, shows that although congregational discipline is common place, excommunication almost never happens. In fact, most leaders report that few of the individuals confronted about their behavior actually leave their congregations. Most repent, change their behavior, and remain within their same congregation. Finally, all of the analyses include a

⁶ Ancillary analyses relevant to this type of selectivity are presented in Appendix A.

⁷ Of the 13 percent of MDICP-3 respondents who have changed their religion since birth, 11 percent reported switching because their old church was too strict. In other words, this aspect of selectivity applies to approximately 1.4 percent of the sample.

variable to indicate religious switching, intending to capture if such selectivity could be responsible for the associations between congregational characteristics and self-reports of sexual behavior at the individual level.⁸

Another potential time-ordering problem involves the sample itself; the MRP was designed in such a way that the congregational-level data collected from religious leaders was collected at least one full year after the MDICP-3 individual level data was fielded. Although this is less than ideal, there are several factors that lend confidence to the fact that this approach is, indeed, a valid one. First of all, none of the key informants reported less than 2 years in residence as congregation leader. Second, this paper considers “congregational” associations, not merely religious leader associations. Although messages are important and the role of the religious leader is a key to understanding the dynamics of a congregation, the leader does not unilaterally determine congregational culture. In this way, grouping co-religionists together in their congregations is an appropriate analytic approach for the goals of this paper.

RESULTS & DISCUSSION

Congregational Overview

Table 1 provides a descriptive overview of the religious congregations comprising the MRP sample. Traditional Mission Protestant and African Independent Churches are the most numerous, followed by New Mission Protestant and Pentecostal congregations. Muslim mosques exist primarily in the Southern Region (Balaka). Catholic congregations comprise only 12 percent of the MRP sample, however these congregations are relatively large, containing

⁸ The switching variable intended to capture the possible problem of religious selection effects is not significant in all the models presented here.

between 19-22 percent of the MDICP respondents (see Table 4); Catholic parishes are also relatively evenly distributed throughout all three research sites.

Congregations in this part of the world vary greatly on a number of characteristics, including size, age, network ties, and leadership characteristics. Close to 30 percent of the leaders report having completed high school and over 60 percent have received some form of religious training (e.g., Bible training, leadership workshops, madrassa.) Seventeen percent of leaders perceive marital infidelity to be rampant in their congregation, and a similar proportion perceive adolescent promiscuity as a very serious problem. Close to half report having ever participated in a HIV workshop or some other sort of AIDS training. Overall, these leaders also perceive AIDS as a problem in their congregation, with only 10 percent saying that AIDS is not a problem at all, and over 35 percent reporting that AIDS is the single biggest problem their congregation faces.

One other feature to note about these congregations is how isolated they are. Only 64 percent have ever been visited by leaders of their denomination, and less than 40 percent have ever been visited by missionaries (generally presumed to be white – American or European, though occasionally from South Africa or Zambia.) A full 23 percent of MRP congregations could be considered “completely isolated” congregations – having never been visited by any denominational leader, missionary, NGO functionary, or government official. Though some of the leaders of these congregations have met individually with other religious leaders in the area or with local NGO personnel, the congregation itself has never been visited by such “outsiders.”

Table 2 presents an overview of the topics religious leaders in rural Malawi formally address in their weekly religious services most frequently, listed in the order of descending frequency. Over 85 percent of religious leaders report preaching about morality (generally) on a

weekly basis, and over 70 percent report addressing AIDS, illness (generally), and sexual morality on a weekly basis as well. Religious leaders in this region are much less likely to discuss political issues from the pulpit, though they do address issues regarding death and the afterlife with frequency. The bivariate cells reveal surprisingly few denominational differences in overall messages about these topics. Leaders of Pentecostal churches are significantly less likely than Mission Protestant and AIC leaders to discuss AIDS frequently from the pulpit. Catholic leaders are substantially less likely than leaders in other denominations to report frequently addressing death and the afterlife, but are the most likely to report discussing political issues with frequency.

Denominational differences are somewhat more evident in the types of private advice religious leaders give to their members. A full 95 percent of these leaders report that they privately advise individual members suspected of infidelity to stop promiscuous behavior. In fact, all of the Catholic leaders interviewed and all the leaders of New Mission Protestant congregations report this practice. Only approximately half of the leaders, however, report doing this on a weekly basis. AIC leaders are least likely (36%) to frequently police their congregation on sexual matters, while over 60 percent of Pentecostal leaders report doing so. Sixty-five percent of the leaders interviewed reported ever advising a member to get tested for HIV. Catholic and mission Protestant leaders are most likely to have given such advice, while only half of new mission Protestant leaders have.

Although the doctrines of some religious traditions forbid condom use and divorce, evidence from the MRP suggests that a sizable minority of leaders deviate from these official doctrines when they privately advise members to avoid contracting HIV. Over one third of religious leaders have encouraged a member to leave a spouse so as to avoid contracting HIV.

This message is most prevalent among Muslim leaders, over half of whom report ever giving such advice. Muslim leaders also report advising members to use condoms more frequently than the leaders of any other tradition. Aside from this “Muslim exception”, however, deviation from teachings on the acceptability of condoms does not vary significantly by tradition. Overall, close to 30 percent of leaders report having given member such advice; in no tradition do leaders categorically object to the use of condoms among their members.

Descriptive Statistics for Three Analytic Samples

Table 4 departs from describing the congregations themselves to present descriptive statistics for each of the analytic samples employed here. The frequency of the risk behaviors examined here as varies substantially. Among unmarried adolescent respondents, 43 percent reports having a sexual partner in the past year, while only 6 percent of married respondents report an extramarital partner during the past year. Condom use is low among sexually active respondents; less than one quarter of MDICP respondents report ever using a condom, and only 33 respondents reported consistent condom use during the past year – 8 women and 25 men (frequencies not shown).

Among the adolescent sample, sixty percent are male,⁹ and twenty five percent have completed secondary school. Among married and sexually active respondents, however, only 40 percent are male and a much lower proportion have completed secondary school. Somewhat surprisingly, the sample of respondents who participated in the VCT portion of MDICP-3 does not differ significantly on any of the key characteristics examined here. Attendance at religious services is high for all four groups. For all the analytic samples, approximately 75 percent

⁹ Because age at first marriage is lower for women than for men, most adolescent aged women are married and subsequently in the married respondents sample

reports attending a congregation in which the leader reports discussing sexual morality on a near-weekly basis, while merely 30 percent reports attending a congregation in which the leader reports privately advising members to use condoms.

Congregational Associations with the ABCs

Table 5 presents logistic regression coefficients for random effects models that account for the assumptions involved with including congregational-level characteristics in models of individual-level outcomes. Model 1 shows that sex and education are associated with sexual activity among adolescents in the ways we would expect. Attendance at religious services, however, is negatively associated with premarital sexual activity. This model employs four measures of congregational characteristics, and reveals that while informal practices do not predict adolescent sexual activity, exposure to formal messages, particularly frequent messages about AIDS in weekly religious services, are negatively associated with self reports of sexual activity.

Some very distinct patterns become evident, however, when we examine “B” among married respondents by estimating associations between individual and congregational factors and a self-reported extra-martial partner. Attendance at religious services is not associated with this risk behavior at all, but there is some evidence of denominational differences, with Muslims reporting extramarital partners with more frequency than Catholics (the reference category), though this variable is only marginally significant ($p=.097$). Individuals who attend congregations in which the leader perceives marital infidelity to be a serious problem are more likely to report such behavior themselves, lending credence to the accuracy of leaders’ perceptions of the sexual climate of their congregations. Unlike with adolescents, exposure to

formal religious messages about AIDS or about sexual behavior is unrelated to reports of a non-marital partner; however individuals who attend congregations in which the leader functions as the “sex police” have reduced odds for reporting such a partner ($p=.058$).

The third model estimates the likelihood of condom use for all sexually active respondents. The demographic variables predict condom use in the expected directions: condom use is higher among men than among women, and respondents who have completed secondary school use condoms more often than their less-educated counterparts. Although condom use declines with age, this relationship is slightly curvilinear. Condom use is more prevalent in Rumphi, where condoms are more accessible, than in Balaka (confirmed by t-test) or in Mchinji. Attendance at religious services is negatively associated with condom use, which could suggest one of two possibilities: a) consistent with speculation, religion may impede condom use or b) since condom use is largely motivated by an individual’s perception of risk, those who are attending services regularly are not engaging in sexual behaviors they consider risky. Condom use is lower among Muslims than among members of any other religious group. Formal messages have no bearing on self-reported condom use, however respondents who attend congregations in which the leader reports privately advising members to use condoms are significantly more likely to report doing so, as are those who are “policed” by their congregation leader.

HIV Status

Finally, Model 4 provides estimates the likelihood of actual HIV infection – a measure which is not subject to the type of reporting bias the previous three outcomes likely are. As expected, respondents in the northern district (far from the major cities and trade routes) are less

likely than those in the central district to be infected, and men are less likely than women to test positive for HIV. Respondents who have been previously married (i.e., divorced or widowed), however, are more likely to be infected. As with all the other outcomes examined here, attendance at religious services is negatively associated with HIV infection. Muslims and members of New Mission Protestant groups have lower odds of infection, as are respondents who score higher on the socially desirability index. Interestingly, none of the measures of risk behavior employed here predict HIV status. However some congregational characteristics do emerge as significant. Exposure to religious messages about AIDS and messages of sexual morality is associated with reduced odds for testing positive for HIV.

Predicting AIDS Activism among Religious Leaders

These findings introduce important questions about the predictors of those religious messages that are most likely to shape individual behavior – delivering formal messages about HIV on a regular basis, policing the sexual behavior of individual members, providing private counsel to use condoms, and encouraging a member to leave an unfaithful spouse. In other words, in what ways are leaders who send these particular messages different from those who do not? Table 7 provides exponentiated logistic regression estimates (odds-ratios), treating the key independent variables from the preceding multi-level analyses as dependent variables at the congregational level. Because denominational differences were not of primary import in predicting individual-level risk behavior, these congregation-level analyses focus on the characteristics of the leaders themselves that may influence their approach to AIDS in their

congregations. Because the small Ns lend less statistical power to these analyses, variables significant at the $p < .10$ level are reported and discussed; however interpreted cautiously.

None of the leader or congregational characteristics examined here predict preaching about sexual morality on a weekly basis, however the leader's perception of the seriousness of the AIDS problem in their congregation have increased odds for preaching about AIDS regularly – this association is both large and significant, with over a 60 percent increase for each additional level of agreement. Having attended an AIDS workshop is positively associated with the most proactive form of sexual surveillance observed in this study (O.R.=2.09, $p < .01$) and with privately encouraging members to get tested for HIV (O.R.=2.15, $p < .01$). Belief that AIDS is a serious problem in the congregation, however, is actually negatively associated with sexual surveillance, which begs the question of whether or not religious leaders police the sexual behavior of their members in response to a growing AIDS problem, or if certain congregations have a more serious AIDS problem than others specifically *because* the leader does not police his members. Interestingly, having attended an AIDS workshop is mildly associated with increased odds of encouraging members to use a condom (OR=1.88, $p < .10$); however, leaders who perceive AIDS as a very serious problem are more likely to privately advise members on this matter. This suggest that AIDS education initiatives may not be very effective in changing the minds of religious leaders who resist condom use, but that in villages where the AIDS problem has reached a perceived critical mass (i.e., gotten “bad enough”), leaders express more permissive attitudes towards the acceptability of condoms to stop the spread of HIV. Finally, religious leaders who have attended an AIDS workshop area actually less likely than those who have not to advise a member to get a divorce if their spouse has been unfaithful.

Nearly half of the religious leaders in the MPR sample have attended an AIDS workshop; those who have done so are more likely to report encouraging members to seek an HIV test and use condoms and are more likely to report that they police the sexual behavior of their members. Self reports from religious leaders, however, may also be subject to social desirability bias. For example, it is possible that having participated in an AIDS workshop does not actually influence the way religious leaders teach, preach, or advise but has taught them the “correct” answers to give when outsiders inquire about AIDS-related issues. Though this is a valid criticism, the self-reports of religious messages and the on policing the sexual behavior of members are consistent with participant observation data collected in this same region 2004. Unfortunately, I do not have other data sources from which to triangulate reported informal messages about condom use or encouraging members to get a HIV test.

Perhaps a more pressing concern is the possibility that religious leaders conform to the sexual culture of their congregation. They may give messages and advice that affirm what members are already doing and serve more as a reflection of the state of the congregation than as a force of influence within it. This possibility brings us to one of the perennial critiques of research on religion and human behavior – the problem of selection effects. In a congregations led by clergy who confront sexual sin on a regular basis and teach against sexual morality, the individuals who are engaging in such behaviors might simply leave – either switch to another congregation where such behaviors are tolerated or become apostates in the traditional sense of the word. Although the indicator of religious switching included in the multi-level models was insignificant throughout the analyses, religious affiliation and practice in SSA is a dynamic phenomenon that deserves attention in and of itself – as well as how it relates to AIDS related issues like behavior change.

CONCLUSIONS

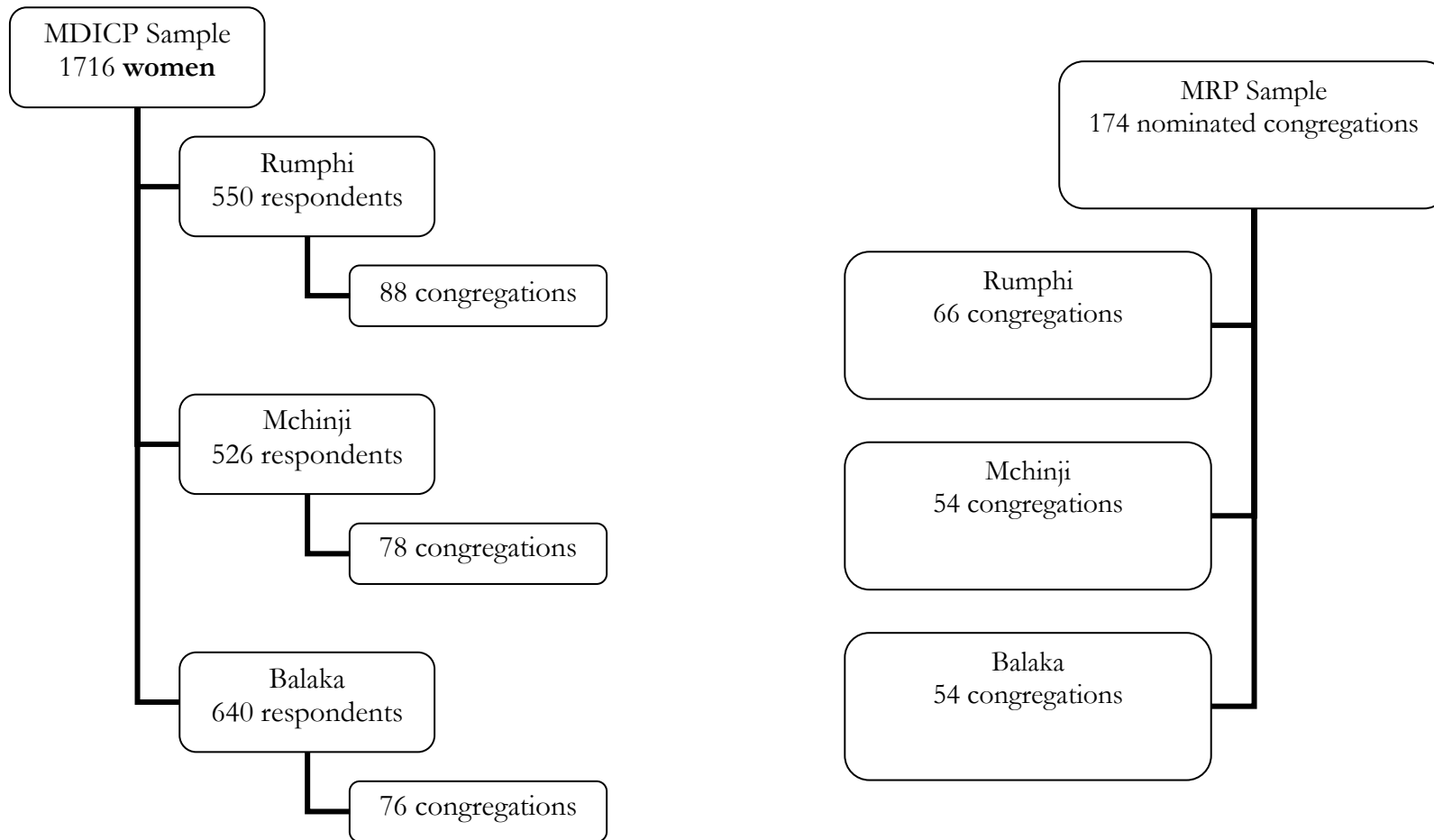
The role of FBOs in the fight against AIDS in SSA has been the subject of intense controversy; much of this controversy has centered on the role of religious leaders in promoting or opposing condoms as a method of HIV prevention. However not until recently has the role of religious congregations actually been the subject of any rigorous empirical analysis. The evidence presented here suggests that religious congregations are, indeed, an important force motivating AIDS-related behavior change. Adolescents who regularly hear messages about AIDS from the pulpit are less likely to engage in extramarital sex. Married adults who belong to congregations where the leader acts as the “sex police” are less likely to report an extramarital partner. Furthermore, the correspondence between self-reports of extramarital sex among congregants and the religious leaders’ assessment of the sexual climate of their congregations instills some confidence that these leaders do, indeed, have an accurate sense of what is going on around them and are likely to respond to it. Religious opposition to condom use is far from monolithic. A sizable portion of religious leaders report privately advising members to use a condom, and members of these congregations are more likely to report doing so.

Although these analyses emphasize the important role of religious congregations and their leaders as they contribute to AIDS-related messages and behaviors, it is critical to point out some of the limitations on their influence. If, for example, religious leaders encourage HIV testing while provision of VCT in rural areas remains poor, does that message matter? If religious leaders encourage a faithful female member to leave her unfaithful spouse, but her poverty impedes her ability to do so, what difference does their encouragement make? Do messages about condom use really make a difference for an individual who does not want to use

a condom in the first place? Do individuals really resist condom use on religious grounds or merely employ religious explanations when describing their general opposition to condom use? With consistent condom use being so low in this area to start with (30 individuals out of 3300 in our sample report using a condom *consistently* with *all* their sexual partners during the past *year*), should condom use be a key focus of HIV prevention efforts?

In the context of SSA, religious involvement is not only an important force for the regulation of sexual behavior; it is also a strong predictor of HIV status. The lack of association, however, between sexual risk behaviors and HIV status highlights the need for scholars to think beyond the ABCs in terms of how HIV transmission is being both facilitated and prevented and the role religious factors play to this end. The ABCs of HIV prevention have provided a simple and factually accurate framework that guides both how individuals in AIDS ridden parts of the world approach sexual behavior *and* how health scholars evaluate disease prevention efforts. Though useful to a certain degree, the ABCs have become so ubiquitous, that they have begun to act as blinders. In highlighting the role religious leaders may play in the HIV vis-à-vis the regulation of marriage, this study cautions against reducing studies of HIV to the mere ABCs. Studies of local responses to the AIDS epidemic in SSA suggest that rural Africans employ creative and feasible strategies to protect themselves against HIV. Western scholars concerned with health practices and social change in this part of the world should seek to apply equally creative approaches to understanding the AIDS problem – both in terms of its causes and its consequences.

FIGURE 1: Construction of the Malawi Religion Project Sample



**Table 1: Descriptive Statistics for
Select Congregational Characteristics, MRP**

	Mean	Std. Dev.	Min	Max
Denomination				
Catholic	0.12	0.33	0	1
Pentecostal	0.18	0.38	0	1
African Independent	0.20	0.40	0	1
Muslim	0.12	0.33	0	1
Traditional Mission Protestant	0.20	0.40	0	1
New Mission Protestant	0.17	0.38	0	1
Congregational Demographics				
Congregation Size	39.26	55.26	0	370
Congregation Age (in years)	23.30	20.50	1	91
Leader Has at least Some Secondary Education	0.29	0.46	0	1
Leader Some Religious Training	0.63	0.48	0	1
Network Ties				
Helped by NGO	0.13	0.34	0	1
Ever visited by missionaries	0.38	0.49	0	1
Helped by mission work	0.25	0.43	0	1
Ever visited by denominational leaders	0.64	0.48	0	1
Sexual Culture				
Rampant Unfaithfulness in Congregation	0.17	0.3729	0	1
Rampant Teenage Promiscuity	0.16	0.36748	0	1
AIDS				
Leader attended AIDS workshop	0.49	0.50	0	1
In this congregation, AIDS is:	1.81	0.95	0	3
Not a problem	9.58			
Somewhat of a problem	26.95			
A big problem	35.93			
Single biggest problem	27.54			

N=169

Table 2: Percent of Religious Leaders Who Report Addressing Select Issues Every Week or Almost Every Week in Regular Religious Services, MRP

	Morality, Generally	Illness, Generally	AIDS	Sexual Morality	Death/Afterlife	Political Issues
Catholic	86.37	59.09	63.63	52.38	38.09 ^{bcef}	19.05 ^{bf}
Muslim	76.19	61.91 ^c	71.42	71.43	71.43 ^a	4.76
Mission Protestant	88.24	85.29 ^b	88.24 ^e	76.47	73.53 ^a	8.82 ^f
AIC	90.91	75.76	81.82 ^e	75.76	63.63 ^e	12.12
Pentecostal	86.66	68.96	50.00 ^{cd}	70.00	83.33 ^a	13.34 ^f
New Mission Protestant	87.51	75.01	71.88	75.00	72.42 ^a	0 ^{ace}
Total	86.63	72.52	72.09	71.34	68.45	9.52

N=174

Significantly different at the $p < .05$ level from:

^a Catholics

^b Muslims

^c Mission Protestants

^d AICs

^e Pentecostal

^f New Mission Protestants

Table 3: Percent of Religious Leaders Who Report Privately Advising Members to Do One of the Following, MRP

	Stop promiscuity	Addresses promiscuity on a <i>weekly</i> basis	Get an HIV test	Leave a Spouse Due to HIV Suspicion	Use a Condom
Catholic	100.00 ^d	45.45	77.27 ^f	28.57	22.73
Muslim	90.48	47.62	61.90	57.14 ^e	61.90 ^{acef}
Mission	97.06	58.82	82.35 ^f	35.29	11.76
AIC	87.5 ^{af}	36.36 ^e	59.38	34.38	34.38
Pentecostal	96.67	64.52 ^d	63.33	23.33	30.00
New MP	100.00 ^d	53.13	50.00 ^{ac}	31.25	15.63
Total	95.32	51.45	65.00	34.12	27.00

N=174

Significantly different at the p<.05 level from:

^a Catholics

^b Muslims

^c Mission Protestants

^d AICs

^e Pentecostal

^f New Mission Protestants

Table 4: Descriptive Statistics for Distinct Analytic Samples, MDICP-3

	Unmarried Adolescent Respondents	Married Respondents	Sexually Active Respondents	Sexually Active Tested Respondents
Dependent Variables				
Sexually Active	0.43			
Nonmarital partner		0.06	0.17	0.17
Condom Use			0.22	0.23
HIV Positive				0.07
Demographic				
Rumphi	0.38	0.06	0.31	0.34
Balaka	0.32	0.32	0.35	0.37
Mchinji	0.29	0.35	0.33	0.29
Male	0.61	0.33	0.44	0.44
Age (15-80)	18.40	0.41	35.20	35.28
Completed Secondary School	0.24	0.09	0.11	0.11
Value of Livestock (logged, 0-13.22)	7.83	6.84	6.96	7.02
Previously Married	NA	0.40	0.35	0.34
Religion				
Attendance at Religious Services (1-3)	2.65	2.50	2.52	2.52
Pentecostal	0.08	0.08	0.09	0.09
Traditional Mission Protestant	0.28	0.20	0.20	0.21
African Independent	0.10	0.17	0.16	0.15
New Mission Protestant	0.08	0.11	0.10	0.10
Muslim	0.24	0.25	0.26	0.27
Catholic	0.22	0.18	0.18	0.17
No Church	0.01	0.01	0.01	0.01
Born Again / Made Tauba	0.22	0.26	0.26	0.26
Switched	0.11	0.13	0.13	0.12
Additional Risk Factors				
Total Number of Partners (0-20)			3.41	3.44
Transactional Sex Partner			0.10	0.10
Attends Congregation Where:				
Leader preaches almost weekly on sexual morality	0.74	0.75	0.75	0.76
Leader preaches almost weekly about AIDS	0.66	0.70	0.70	0.70
Leader privately advises fidelity	0.95	0.95	0.95	0.95
Leader privately advises fidelity weekly	0.49	0.49	0.30	0.30
Leader privately advises condom use	0.29	0.29	0.49	0.49
N	599	2427	2813	2294

Table 5: Predicting the ABCs of HIV Prevention and Infection, MRP-MDICP3 linked dataset

Background Characteristics	Nonmarital Partner^a	Nonrelational Partner^b	Used Condom^c	HIV Status
Rumphi	-0.60 *	-0.58 *	0.66 ***	-0.58 *
Balaka	0.04	0.23 †	-0.14	0.29
Male	1.08 ***	1.05 ***	0.52 ***	-0.51 *
Age	0.03	-0.10 **	-0.06 ***	0.00
Age Squared	NA	0.00 *	0.00 †	0.00
Age Missing	-0.60 †	0.43 †	0.20	0.34
Secondary Education	0.57 **	0.54 *	0.27 †	-0.05
Value of Livestock (Logged)	0.02	0.00	0.00	-0.03
Previously Married	NA	0.16	-0.04	1.13 ***
Individual Religiosity				
Attendance at Religious Services	-0.48 ***	-0.13	-0.19 **	-0.45 ***
Pentecostal	0.24	-0.52	-0.11	-0.22
Mission Protestant	0.01	0.24	0.06	0.07
African Independent Church	-0.44	0.14	0.09	0.01
New Mission Protestant	0.16	0.14	0.14	-0.72 *
Muslim	0.44	0.53 †	-0.36 †	-0.87 **
No Church	-0.15	-1.39	0.27	-1.40
Born Again/Made Tauba	0.19	-0.20	0.27 *	0.35 †
Switched		0.10	0.19	-0.10
Other Risk Behaviors				
Nonmarital Partner			0.89 ***	-0.34
Total Number of Partners			0.04 *	0.00
Total Number of Partners Missing			-0.61 **	-0.05
Transactional Sex Partner			0.56 **	0.12
Condom Use				0.22
Religious Leader				
Discusses AIDS	-0.23 *	0.07	0.03	-0.20 *
Discusses Sexual Morality	0.12	-0.06	-0.09 †	-0.15 †
Rampant in Congregation	0.10			NA
Believes Infidelity Rampant in Congregation		0.55 **		NA
Confronts Promiscuity <i>Weekly</i>	-0.10	-0.37 †	0.17	0.06
Privately Advises Condom Use			0.31 *	NA
Log Likelihood	-367.31	-661.05	-1310.99	-576.60
Chi Squared	75.63	670.58	706.70	731.25
Rho	0.01	0.04	0.01	0.03
N	599	2413	2795	2475

Coefficients from logistic regression procedure

Two tailed tests: †p<.10, *p<.05, **p<.01, ***p<.001

Table 6: Proportion of respondents who agree with statements that it is acceptable for a person to leave their spouse under the following circumstances

	<u>MRP</u> <u>Respondents</u>	<u>MDICP</u> <u>Respondents</u>
He is sexually unfaithful	0.62	0.85
He beats her frequently	0.33	0.74
He doesn't sexually satisfy her	0.19	0.41
She thinks he might have an STI	0.14	0.34
He does not allow her to use family planning	0.12	0.28
He cannot support her financially	0.11	0.49
He cannot provide her with children	0.09	0.42
She thinks he is infected with AIDS	0.07	0.30
N	164	3094

Table 7: Predicting the AIDS-Related Activities of Religious Leaders, MRP

	<u>Weekly Messages on Sexual Morality</u>	<u>Weekly Messages on HIV/AIDS</u>	<u>Police Members on Sexual Morality</u>	<u>Advise Condom Use</u>	<u>Advise HIV Test</u>	<u>Advise Divorce because of Unfaithfulness</u>
Age (18-81)	1.00	1.00	1.00	1.00	0.99	1.00
Some Secondary Ed.	1.13	0.85	0.65	0.53	1.18	1.08
Isolated Congregation	0.54	0.55	0.92	0.92	1.23	1.37
Has Attended AIDS Workshop	1.38	1.80	2.09 **	1.88 †	2.15 **	0.53 †
AIDS problem in congregation (0-4)	1.16	1.61 **	0.75 †	1.53 *	1.31	1.16
N	181	181	181	180	180	178
Pseudo R2	0.03	0.06	0.03	0.06	0.08	0.03
Log Likelihood	-102.87	-100.77	-121.06	-98.32	-105.61	-113.25

Two tailed tests: †p<.10, *p<.05, **p<.01, ***p<.001

Variables are dichotomous unless otherwise noted

Odds ratios from logistic regression procedure

Appendix A: Selectivity Analysis
Raw Frequencies of Reasons Given for Religious Switching^a

Reason	<u>Frequency</u>	<u>Percent</u>
Marriage	119	22.88
No reason given	68	13.08
Conflict	47	9.04
Too strict	46	8.85
Other	43	8.27
Better lessons	39	7.5
Family convinced	36	6.92
Too far	32	6.15
Too liberal	31	5.96
Friends convinced	24	4.62
Miracles	14	2.69
Spirit filled	11	2.12
Don't Know	5	0.96
Wanted healing	4	0.77
AIDS	1	0.19
Total	520	100

N=470 switches, 392 switchers, 452 valid reasons

^amore than one answer possible

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