THE INFLUENCE OF ISLAM ON AIDS PREVENTION AMONG SENEGALESE UNIVERSITY STUDENTS

Sarah S. Gilbert

Few studies have attempted to quantify Islam’s contributions to HIV/AIDS prevention. Senegal has involved Muslim leaders in its prevention campaign for over a decade. Senegal also has the lowest HIV/AIDS prevalence rate in sub-Saharan Africa. This study examines how Islam influences AIDS prevention by testing whether Senegalese participants’ religiosity scores explain their risky decisions associated with sex, condom use, and drug use. Participants with higher religiosity scores were more likely to abstain from sex. However, participants high in religiosity were not more likely to report that they did not use condoms when sexually active.

Senegal’s 0.9% HIV/AIDS prevalence rate is the lowest in sub-Saharan Africa (Joint United Nations Program on HIV-AIDS, 2006). Senegal’s success in containing the virus is owing in part to aggressive awareness campaigns and proactive policies concerning prostitutes and condoms. However, this success might also be explained by cultural norms established before the arrival of the virus. In particular, Senegal might have benefited from cultural norms derived from their syncretic blend of Islam and local animist traditions. Currently 96% of the Senegalese population is Muslim and Islam remains a powerful force in politics, society, and family dynamics (Coulou, 1980). This study examines the relationship between Islam and behaviors conducive to AIDS prevention among Muslim university students in Senegal. Understanding Islam’s relationship to HIV/AIDS prevention could help future AIDS prevention and education efforts among Muslims.

Religion can influence decisionmaking by contributing to someone’s concept of their own identity and also by normalizing certain values and beliefs (Koenig, 1998). An individual’s religiosity describes their cognitive, affective, and behavioral relationship to their respective religion. Higher religiosity involves stronger consistency between religious values and behavior but also a stronger resistance to changing existing values and behaviors. Increased levels of circumcision, reduced frequency of intoxication, and high valuation of premarital abstinence and marital fidelity are all examples
of how Muslim values can result in lower risk behaviors (Biaya, 2001; Gray, 2004; Meda et al., 1999). However, some studies claim that high–risk behavior is promoted by interpretations of Muslim values that result in stigmatization against men who had sex with men, hostility toward prostitution, polygamous relationships that aren’t necessarily self–contained, and the subjugation of women within marriage (Gray, 2004; Meda et al., 1999). However, many of these attitudes and practices are the consequences of popularized interpretations of Islam rather than directly derived from Islamic doctrine. This distinction between Islamic sanctions and the sanctions promoted by a popularized interpretation becomes important when evaluating religiosity, because the differences in popularized interpretations reduce the range of universal Muslim principles. Thus a Senegalese individual’s religiosity does not encompass stigmatization or women’s equality, because the opinions concerning these issues vary between Senegalese Muslims.

Most Senegalese citizens belong to one of four Sufi brotherhoods or a fundamentalist movement. Although beliefs vary across and even within these affiliations, certain key principles involving AIDS prevention remain constant. Intoxication from drugs or alcohol is forbidden by the Koran and this prohibition is consistent across all Muslim movements in Senegal (Gray, 2004; Koran 2:219). This prohibition decreases the likelihood of casual, unprotected sexual encounters that might occur during intoxication. In addition, Islam forbids premarital and extramarital sex, thereby banning casual sexual encounters (Gray, 2004; Koran 5: 90. 2:219). Gray (2004) conducted a comprehensive study on HIV/AIDS populations in sub–Saharan Africa, concluding that a lower percentage of the population in Muslim–majority nations has the virus. His results suggest that Islam’s ban on intoxication and its regulation of the sexual sphere influence behavior on a large scale among Muslims in sub–Saharan Africa. In the capitals of Guinea–Bissau and the Ivory Coast, non–Muslim neighbors to Senegal, three to four times as many men reported having multiple casual sex partners compared to men in Dakar, Senegal’s capital (Meda et al., 1999). Also, the age of first intercourse is also much lower in the non–Muslim capitals (Meda et al., 1999).

In addition to Islamic practices, other preestablished factors in the political, social and economic environment continue to contribute to Senegal’s low HIV/AIDS rate today. Prostitution is legal (since 1969) and is regulated by the government, which enforces obligatory registration and screenings for sexually transmitted diseases (STDs) every two months. Legalization facilitates the distribution of prevention and awareness campaigns for sex workers. Bimonthly screenings make sex workers more reluctant to engage in high–risk behaviors because infected individuals lose their prostitution license. As in many other countries, prostitutes are heavily concentrated in towns with migrant laborers and in tourist areas. Although sexual tourism may increasingly pose a health threat, Senegal’s lack of natural resources and large–scale industries reduces labor migration, thereby also reducing HIV/AIDS transmission.

In addition to passive environmental factors, both the government and local nongovernmental organizations (NGOs) have taken important steps to contain the spread of the HIV virus. In the early 1980s, before HIV/AIDS appeared in Senegal, the government officially prioritized five preventive actions and budgeted resources to ensure their implementation, including blood screening in all hospitals, sexual awareness campaigns, STD testing, condom distribution, and targeting high–risk populations with educational materials (Meda et al., 1999). Media outlets like television, music, film, and community theater are frequently used to send prevention messages. The majority of journalists, religious leaders, and politicians attend AIDS
Awareness conferences, which impacts their presentation of news, religious and political stances. Furthermore, target populations are informed about STD prevention and testing in AIDS causeries, informal discussions facilitated by a trained health care professional. Three condoms cost only 150 Central African francs, the equivalent of 23 euros or .29 U.S. cents, and they are easy to obtain because of efforts made by the National Program of Family Planning, the Program for the Fight against AIDS, and other NGOs. Finally, the school system has integrated a course on sexual health, with a focus on HIV/AIDS, for students in junior high school (Meda et al., 1999).

Religious involvement is an understated but pivotal cornerstone to the government’s HIV/AIDS prevention campaign (NDoye, 1995). In 1995, to address religion’s role in AIDS prevention, the government convened two AIDS and Religion symposiums, one for Muslims and another for Christians. These were the first symposiums joining religion and AIDS issues “in Senegal, Africa and the entire world,” and they attracted more than 250 Muslim leaders from throughout the nation (Anis, Program for the Fight Against AIDS, & United States Aid for International Development, 1995). The Islam–AIDS symposium resulted in unanimous agreement among participants concerning their approach to prevention. They committed themselves to emphasizing the religious values of abstinence, fidelity, family, and respecting women (Gueye, 1995). Muslim leaders also promised to no longer support the practice of heritage, where the brother of the deceased “inherits” all widowed wives (Anis et al., 1995; M. Diallo, personal communication, April 10, 2006). The results of this promise are most pronounced in immigrant–heavy regions such as Matam where AIDS testing is now a cultural norm before wedding a widow or a widower (M. Diallo, personal communication, April 10, 2006; J. Diatta, personal communication, March 7, 2006; Seck, personal communication, March 7, 2006). All Muslim leaders agreed to endorse condoms within a marriage if they were used for health reasons. This is called the préservatif moral, or moral condom (Diof, 1995; Gueye, 1995). However, an uneasy truce remains between religious leaders and AIDS policymakers in which religious leaders are not asked to endorse condoms outside of a marital context and policy makers keep condom promotion campaigns secular and unobtrusive.

Using a culture– and age–specific religiosity scale, this article attempts to describe how the Islam in Senegal may function maintaining a low HIV/AIDS transmission rate. The study describes how religiosity correlates with low– and high–risk decisionmaking. I predicted that individuals with higher religiosity would be more likely to abstain from sexual relations. Similarly, a higher religiosity would predict less experimentation and/or use of drugs or alcohol. Strong condom promotion nationwide likely made condom usage more of a norm; thus I predicted religiosity would have no relationship to condom use. Because Senegal is a polygamous society, premarital relationships are probably modeled on polygamy more frequently than in monogamous societies. Thus I predicted that religiosity would not predict levels of promiscuity (defined as more than one sexual partner in the previous 12 months).

The success of Senegal’s prevention campaign has tangible evidence measured by the low seroprevalence and mortality rates, but its effect on individual decisionmaking is difficult to infer. Because Islam continues to be used as a channel for prevention messages, evaluating how religiosity correlates to low–risk decisions among university students is a first step toward developing an understanding for how this population makes risky decisions, why they make them, how risky behavior can be prevented and the most cost–effective way to prevent it.
METHOD

Participants were 234 undergraduate and graduate students from Gaston–Berger University with a mean (SD) age = 23.56 (2.50), range: 18-33. Participants were 73% male, 22% female, and 5% did not report their sex (this sex ratio is consistent with that found in the general student body). Fewer than 5% of participants reported being married.

Gaston–Berger University has approximately 3,860 students and is one of two national universities in Senegal. Although the majority of students come from urban centers, all Senegalese regions and ethnicities are represented. Admittance to the university is purely based on high school grades.

Participants were excluded from analysis if (a) they did not return the questionnaire, (b) they were not both Muslim and Senegalese, (c) they returned incomplete questionnaires, and (d) they did not confirm that they responded honestly to all questions. On these criteria, I excluded 36 individuals yielding a final sample of 186 participants. Because almost 100% of the student body lives on campus, a random selection of rooms was used to generate the sample.

MATERIALS

Participants answered a 15–minute questionnaire that included a Senegalese Muslim Youth religiosity scale and behavioral questions relating to AIDS prevention. Behavioral questions relating to AIDS prevention were taken from the Questionnaire for Young, Unmarried Youth of Both Sexes and “Evaluation of the Impact of STD/AIDS Prevention Strategies on the Behaviors of Female University Students in the Ivory Coast” (Family Health International, Department for International Development, & United States Aids for International Development, 2001; Sidibe, 2002). To reduce dishonest responses, participants could decline to answer any question. As stated above, students who did not confirm (on the final survey question) that they responded honestly to all questions (n = 12) were excluded from analysis.

The religiosity scale, developed for this experiment, asked six questions regarding behaviors concerning Islamic religious practice (see Appendix A). The religiosity scale was based on Katz’s (1999) Student Religiosity Questionnaire and was developed in consultation with a Senegalese sociologist Dr. Gorom MBodj, an anthropologist, Dr. Ellen Foley who has done significant fieldwork with sexually active women in Senegal, psychologist Dr. Adam Cohen, a professor with a doctorate in Islamic Studies and multiple Muslim, graduate sociology students. Participants answered each religiosity question along a 5–point scale, measuring frequency of practice. The score was the sum of the responses, yielding a maximum possible score of 30 and a minimum possible score of 6.

Finally, a second religious scale measured judgments about six behaviors and beliefs related to Islam. Each item was presented twice—once positively and once negatively to avoid response biases. In terms of behavior, participants judged on a scale of 1 (completely disagree) to 5 (completely agree) whether a “good Muslim” can consume alcohol, eat pork, use condoms or engage in extramarital sex. In terms of beliefs, participants judged their level of agreement with statements about (a) creationism versus evolution and (b) the Koran versus the grandeur of the world being the greatest proof of the existence of God.
PROCEDURE

The experimenter approached a randomly selected student’s door. If a student answered, the experimenter introduced herself and, following a prewritten script, explained that she was conducting an anonymous survey on Islam and behavior. After obtaining informal consent, the experimenter left participants in their rooms for approximately one hour to fill out the questionnaire in private. After the hour finished, the experimenter returned with a folder in which participants put their completed questionnaires. All contingencies, such as students unwilling to fill out the survey or students hosting multiple people in their rooms, were treated consistently according to a preplanned script. For instance, if more than four people were in one room, the experimenter only distributed the questionnaire to the host. If a student was unavailable or unwilling to participate, the experimenter continued to the door on the left.

RESULTS

Table 1 reports the distribution of scores for individual items and the composite religiosity score. The religiosity score had a mean (SD) = 25.03 (4.04) with a minimum of 9 and a maximum score of 30. The item with the lowest mean and greatest variance was mosque attendance with a mean (SD) = 3.63 (1.47), and the highest mean and smallest variance was for observing Ramadan with a mean (SD) = 4.84 (0.61).

With the exception of the “proof of God” belief, a linear regression model reveals that religiosity significantly predicted all judgments about beliefs and behaviors (p < .05). The coefficient between religiosity and judgments about alcohol consumption and extramarital sex was greatest: with each unit increase in religiosity (on a scale of 6 to 30), the model predicts judgments against alcohol consumption and extramarital sex to increase by .07 and .69 units (on a scale of 1 to 5), respectively. Religiosity did not significantly predict levels of agreement with the statement that the Koran is the greatest proof of the existence of God (p < .18).

To analyze religiosity’s predictive value for high– and low–risk behaviors, logistic regressions determined the change in probability of a response given a certain religiosity score. For example, the regression measured how much more likely an individual was to abstain, given that the individual had a higher religiosity score. For the question pertaining to abstinence, married individuals were excluded. For all subsequent questions about sexual practices, abstaining individuals were excluded. The following behavioral variables were collapsed into following binary variables.
Alcohol Consumption. Individuals who reported not consuming alcohol at all in the past month were categorized as “not drinking.” Individuals who consumed alcohol less than or more than once a week were categorized as “drinking.”

Promiscuity. Only nonabstaining, unmarried individuals were analyzed. Individuals who reported engaging in sexual relations with more than one person in the past year were considered “promiscuous,” individuals who engaged in sexual relations with one person or no one in the past year were considered “not promiscuous.”

Condom Use. Only nonabstaining, unmarried individuals were analyzed. Individuals who “always” or “sometimes” used condoms were categorized as “using condoms.” Individuals who “never” used condoms were categorized as “not using condoms.”

A greater proportion of participants with high religiosity scores abstained than those with low religiosity scores (Table 2). For every one unit increase in religiosity score, a student’s likelihood of abstaining significantly increases (odds ratio = 1.13, \( p < .01 \)). Religiosity scores did not significantly predict whether students use drugs, nor did it predict condom usage. Only two participants reported consuming alcohol in the past month, not enough to determine whether religiosity could predict regular alcohol consumption.

Although the inaccuracy of self-report may distort the results of this experiment, it is important to note that only two participants refused to respond to questions about alcohol use and two for drug use. The large amount of participants that did not respond to the question concerning abstinence (\( n = 30 \)) indicates that participants understood that they did not have to respond. Thus although most participants claiming that they had never used intoxicating substances were probably responding honestly, the lack of responses to the sexual questions, which has similar numbers of blanks to abstinence, suggest that our results for condom use might be distorted.

In terms of demographic variables, religious affiliation significantly predicted religiosity scores. I compared means between nonpracticing (\( M = 18.4, SD = 5.1 \)) and fundamentalist Muslims (\( M = 27.2, SD = 2.77 \)). This demonstrated that self-reported religious affiliation accounted for just under half of the variance in religiosity scores (\( R^2 = .49 \)), which was highly significant, \( F (1, 13) = 12.65, p < .01 \).

Although religious affiliation was nearly the only demographic variable that produced significant differences in religiosity, gender and academic status predicted significant differences in sexual behavior. Unmarried women (79%) were more likely than unmarried men (51%) to have abstained from sexual relations, \( \chi^2 (1, N = 142) = 7.01, p < .01 \), and no female reported ever having used drugs. Only one woman reported having more than one sexual partner in the last 12 months, compared to 17

<table>
<thead>
<tr>
<th>Behavior</th>
<th>( n^a )</th>
<th>( \beta )</th>
<th>( SE )</th>
<th>Chi-Square</th>
<th>( p )-value</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstinence from sex</td>
<td>156</td>
<td>.12</td>
<td>.04</td>
<td>7.85</td>
<td>&lt;.01</td>
<td>1.13</td>
</tr>
<tr>
<td>Sometimes/Always use condoms</td>
<td>76(^b)</td>
<td>-.14</td>
<td>.10</td>
<td>1.81</td>
<td>.17</td>
<td>.87</td>
</tr>
<tr>
<td>Condoms used during last sexual act</td>
<td>62(^b)</td>
<td>.00</td>
<td>.08</td>
<td>0</td>
<td>.99</td>
<td>1</td>
</tr>
<tr>
<td>Drug use</td>
<td>175</td>
<td>-.05</td>
<td>.08</td>
<td>.44</td>
<td>.51</td>
<td>.95</td>
</tr>
</tbody>
</table>

\(^a\)N values vary owing to blank responses. \(^b\)N values also restricted because abstaining individuals excluded from analysis.
(36%) of the sexually active men. In terms of academic status, 62% of unmarried undergraduates practiced premarital abstinence compared to only 42% of unmarried graduate students, $\chi^2(1, N = 148) = 4.98, p = 0.02$.

**DISCUSSION**

This study supports the hypothesis that high Muslim religiosity increases sexual abstinence and fails to predict condom use. Religiosity also failed to predict likelihood of sex with multiple partners in the past year. In terms of drug use, only one participant in the entire sample reported using needles, and less than 5% reported any drug use at all. While the use of non-injection drugs could reduce inhibitions and subsequently increase high-risk behavior, the risk is indirect and only relevant to a small proportion of the student body.

Participants’ religiosity did not explain condom use, despite continued sanctions against condoms by some religious leaders (Fall & M'Bengue, 2006). Even running a logistic regression with “frequency of listening to counsels of spiritual guide” as the independent variable and condom use as the dependent variable fails to reject the null hypothesis ($p = .40$). There are many possible explanations; perhaps religious leaders do not actively preach against condom use, perhaps they are more nuanced when addressing their followers due to the AIDS education the majority have received. Perhaps the secular condom promotion campaign is in part responsible. The lack of correlation between religiosity and either promiscuity or condom use implies that for unmarried Muslim students, religiosity’s most significant impact in terms of preventive behavior lies in its ability to promote abstinence.

Though religiosity’s inability to predict promiscuity suggests that this high-risk behavior may fall outside the bounds of Islam’s influence, the high percentage of unmarried, sexually active male students (36%) engaging in promiscuous sexual behavior merits attention. While traveling, interviewing, and socializing with Senegalese youth, I noticed that they frequently made an amalgam between Islam’s permission to be polygamous and the “natural” need for men to have multiple women. This amalgam could explain why premarital promiscuity has no correlation with religiosity. If polygamy is “natural,” then nonabstaining youth can easily conclude that men “naturally” prefer multiple relationships. This conclusion can be reached without increasing cognitive dissonance beyond the already-existing inconsistency between Islam’s valuation of abstinence and premarital sexual behavior.

*Mbaran* is the Wolof word for dating two or more people simultaneously. For male university students, *mbaran* is usually a combination of female students, working women and high school girls (NDiaye, 2003). Sex workers also frequent the campus, especially after the national student stipends are distributed. For men, the motivation behind practicing *mbaran* is physical and cultural; promiscuity is culturally more acceptable, and even expected, among men and the lack of social consequences in the university environment makes it a very tempting choice.

**LIMITATIONS**

This study’s method suffers most from the lack of consistency in the participants’ environment as they filled out the questionnaire. Though neither the experimenter nor the questionnaire changed, each dorm room had a different physical and social reality that could have impacted responses to behavioral questions or even religious ones.

As a young, female Caucasian American, my identity external to the experimenter role may have impacted the results as well. Young women are at the bottom of
the social hierarchy in Senegal, which favors older men. Ninety-seven percent of the students surveyed were older than myself and 73% were men; thus my social position undermined my academic credibility and the esteem participants had for the study. Because of widely held cultural beliefs, my American nationality provoked many participants to suspect me of having harmful intentions toward Muslims. Debriefing sessions revealed that I inspired opportunism, sexual desire and/or jealousy among participants, which could have seriously complicated their responses to the questions concerning sexuality in particular. Yet although these factors may have reduced the validity of participant responses, my identity may have also produced more candid responses because as an outsider without any social authority, I was better able to guarantee anonymity.

FUTURE DIRECTIONS

The obvious direction in which to take this study is to administer the questionnaire in other Muslim nations in sub-Saharan, and possibly northern, Africa. However, the accuracy of self-report may vary between countries, and using other forms of questions may allow the experimenter to extract more information. Developing questions that ask participants to make decisions in hypothetical, high-risk situations could yield different results and may be more accurate. It may reduce the amount of unanswered questions as well, because disclosing hypothetical decisions is less personal than disclosing decisions a participant made in the past.

Another direction would be to analyze differences between religious affiliations within Islam. The majority of Muslims in Senegal are Sufi, but few other nations have a Sufi majority. A Sunni or Shiite affiliation may significantly alter the relationship between Muslim religiosity and HIV/AIDS prevention. Future studies could explore how different concepts of Islam transform the religion’s relationship to HIV/AIDS prevention. A lack of variance would be even more interesting because it would demonstrate a widespread religious consistency regarding highly personal, private decisions and in spite of significant cultural variance. Unfortunately, it would be hard to measure the religiosity of multiple Muslim affiliations on a universal scale. Questionnaire consistency would be difficult to contain across multiple religious affiliations, cultures and languages.

CONCLUSIONS

In Senegal, Islam’s taboos and traditions play into traditional African hierarchies to produce powerful effects on youth’s behavior. The promising results of low drug and alcohol use, as well as the effect of religiosity on abstinence, suggests that Islam continues to play an important role in promoting low-risk behaviors among the Muslim university student population. However, the growing number of infections among the married population suggests that in Senegal, engaging in sexual activity may provoke conflicted feelings about adhering to prevention measures when making decisions about sexual behavior. Both AIDS prevention and the Muslim community would benefit from reducing this internal conflict and finding a way for sexually active students to practice safe sex without compromising religious beliefs.
APPENDIX A.
THE RELIGIOSITY SCALE* (TRANSLATED FROM FRENCH)

The following questions address actions that are related to Islam.

Q101 Directions: Place an “X” in the box that corresponds with how often you . . .

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
</table>
1. Read or recite the Koran.
2. Fast during Ramadan.
3. Frequent the Mosque.
4. Do the five daily prayers.
5. Participate in tithing.
6. Respect the counsels of your spiritual guide.

*Some questions on this scale reflect Islam as it is understood and practiced in Senegal, and many questions are not generalizable to Islam outside of Senegal.

REFERENCES


