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ORIGINAL PAPER

# Health Promotion Needs in Faith-Based Organizations: Perceptions of Religious Leaders in Bamako

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**Abstract**
The purpose of this study was to explore imams' and pastors' perspectives of the health promotion needs of congregants in Bamako, Mali and to examine the physical environment for health promotion in faith-based organizations' (FBOs). In-depth one-on-one interviews were conducted with imams ($n$ = 10) and pastors ($n$ = 2) as well as observations of the physical environment in FBOs in Bamako, Mali. Data were analyzed using a content analysis approach guided by the social ecological model. Leaders frequently mentioned poverty and affordability as challenges perceived by congregants but congregants support each other with financial contributions. The main challenge mentioned was a lack of knowledge among leaders (primarily imams) about health and health programs.

**Keywords** Health promotion · Faith-based · Imams · Pastors · Needs assessment

## Introduction

Mali is a landlocked country located in West Africa with a total area of over one million square kilometers and a population of close to 17 million inhabitants [Central Intelligence Agency (CIA) 2017]. As a large country in Africa, it faces several public health concerns. Specifically, the life expectancy at birth is 57.8 years in Mali compared to 79.1 in the USA [US; World Health Organization (WHO) 2016]. Those who are ill may not have adequate access to medical personnel as there are only 8 physicians/100,000 persons in Mali compared to 245/100,000 in the US (CIA 2017). As far as funding for health, the total expenditure on health per capita in Mali has been as low as $122 compared to $9146 in the USA.

The public health situation is concerning as the rates of overweight and obesity in Mali have been increasing. From 2000 to 2016 the prevalence of adults who are overweight in Mali increased from 20.2 to 30.9% for females and 10.8 to 17.9% for males. Additionally, during the same time period, the prevalence of obesity increased from 5.7 to 12.4% for females and 1.6 to 4.5% in males (WHO 2018). Further, the crude estimate of raised blood

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pressure which is an indication of hypertension was 25.6 and 24.1% for adult females and males, respectively (WHO 2016). These estimates were higher than both the global estimates (20.9% for females and 23.7% for males) and the US estimates (15.9% for females and 18.0% for males). Thus, it is vital to dedicate resources to the prevention of obesity and related health issues. Unfortunately, there is limited information within Mali about behaviors that contribute to overweight/obesity, such as physical inactivity and unhealthy diets.

Currently, the common way of addressing health concerns in Mali is through treatment within either the public or private healthcare system. The public branch consists of a pyramidal system with community health centers at the base (first point of contact). This first level is comprised of centers that typically treat non-complicated cases such as fevers, malaria, health issues during pregnancy, and health issues for infants and mothers. The second level is the referral health centers (first referral) which primarily treats more serious health cases referred by the first level or community health centers. Those conditions treated include C-section surgeries or complicated bone fractures. At the third level are the public hospitals (second referral), they focus on complicated health problems that are beyond the competency of the referral health centers such as heart problems or eye surgery. Ultimately, the last level is the public hospital institutions which focuses on more complicated surgical interventions and academic training. Those who are able to afford it can also access the private health system which consists of private hospitals and private practices with new and more innovative equipment, advanced techniques, and typically better care. Although the public branch has limited treatment options, it is more affordable and serves more people than the private branch. Globally healthcare centers have been viewed as avenues for preventing chronic health conditions; however, it is also important to explore other avenues within communities that can serve as safe spaces for the delivery of prevention services.

In Mali, more than 97% of the population belongs to a faith community, 94.8% identify as Muslims, 2.4% identify as Christians, and 2% identify as animists (CIA 2017). Having such a large faith community implies the presence of many faith-based organizations (FBOs) such as mosques and churches. Within the US, the US Department of Health and Human Services (USDHHS) reported FBOs are valuable for health promotion initiatives (National Center for Health Statistics 2012). FBOs are an important advantage for public health as they are spread throughout the social landscape of communities, are typically trusted entities within communities, and have values and a commitment to the community that can greatly assist in public health goals (Emory University Interfaith Health Program 2016). Another advantage is that FBOs often reach neglected, underserved populations in a context where a healthy body, mind, and soul are equally valued (Peterson et al. 2002).

Within the US, a faith-based approach for health promotion has been deemed promising (DeHaven et al. 2004). Specifically, DeHaven et al. (2004) found that health programs in FBOs could increase health literacy, improve the willingness to screen for health conditions, and increase the readiness to change negative health behaviors such as smoking, inactivity, and unhealthy diets. Importantly, the high number of FBOs and their involvement in public health through issues related to social justice (e.g., health disparities among minorities) makes them ideal venues for improving the health of a community.

FBOs' leaders are key to the dissemination of health education programs to their congregations (Fallon et al. 2013). Fallon et al. (2013) found leaders were more likely to engage in health counseling if the church was bigger, if there was good organizational support, and if they were comfortable speaking to congregants about the health issue to be addressed (Fallon et al. 2013). However, not all health promotion topics are welcome for

all FBOs. For instance, although family planning has been shown to improve women's well-being and family health, the US Conference of Catholic Bishops was strongly against the use of contraceptives by women (Barot 2013). In spite of this, about 98% of Catholic women reported using modern contraceptive methods in their reproductive life. This suggests the existence of some incompatibility between the Catholic faith and family planning desires of Catholic women. Hence, there is a need to understand FBO leaders' perspectives in order to better understand how to target specific health issues that are important for their congregants.

Although, FBOs are key to reaching conservative religious and cultural populations, secular non-governmental organizations have had frequent success in collaborating with religious leaders in many African countries, including Mali (Barot 2013). For example, Marie Stop International, a London based non-governmental organization, has collaborated with FBOs in Mali in order to extend family planning and reproductive health services to unreached audiences. Yet, the health issues addressed in these interventions were not based on previous needs expressed by the target FBOs. In order to deliver an effective intervention, it is important to identify the health promotion needs of the community; however, to our knowledge, there have been no previous explorations of the health needs of congregants in any of the FBOs in Mali.

One theory that can be used to explore the health promotion needs of Mali is the Social Ecological Model (SEM; McLeroy et al. 1988). The model views behavior as being affected by, and affecting multiple levels of influence including individual, interpersonal, organizational, community, and policy levels. The first level, individual, is a participants' knowledge, beliefs, skills, self-concept and attitudes related to health promotion efforts, needs and interest. The second level, interpersonal, is formal and informal social networks and social supports that impact health. The third level, organizational, is the cooperation of different organizations in promoting health. The fourth level (community level) is about community-based organizations that could intervene to satisfy health promotion needs. The fifth level (policy level) is about government rules and regulations that may guide health promotion efforts. In order to determine any gaps in the promotion of health, as well as what FBOs may be interested in promoting regarding the health of their community, it is necessary to first understand FBOs leaders' perceptions of the health needs of their congregants.

Considering the deteriorating health status in Mali, the large faith community in Mali, and potential effectiveness of FBOs to promote health, it is of critical importance to explore religious leaders' perceptions of health promotion needs in Mali, specifically in Bamako. Bamako is ideal due to its urban setting, and its tendency to adopt westernized ways of life in terms of diet, transportation, TV viewing time, and video games. Therefore, the purpose of this study was to explore religious leaders' perspectives of the health promotion needs of their congregants in Bamako and to examine the physical environment for health promotion in FBOs.

## Methods

### Study Design

The methodological approach of this research was a case study. A case study is a research method that investigates a unit of human activity in the real world that can be studied or understood in context, and it seeks to answer a specific research question through a range

of evidence (Gillham 2010). A case can be an individual, a group, an institution, or a community.

The case of the present research is the health promotion needs of faith leaders and the FBOs environment in Bamako. In order to fully understand this case, semi-structured interviews with religious leaders (imams and pastors), and observations of FBOs' physical environments were conducted. The semi-structured interview guide was based on the SEM (McLeroy et al. 1988). The interview questions covered the five levels of the model (individual, interpersonal, organizational, community, and policy) in regard to existing and potential health promotion efforts of the FBOs. The observation covered the physical environment of the FBOs in order to determine existing health promotion efforts and the availability of space for future efforts. The Institutional Review Board of the lead researcher's university and the National Institute of Research in Science and Technology of Mali approved the study.

## Qualitative Study Sampling and Data Collection

Participants included twelve leaders of FBOs. A purposive sampling method was used, a technique in which participants are intentionally chosen to represent a predefined characteristic or trait (Cottrell and McKenzie 2011). Due to the large number of Muslims (94.8%) compared to Christians (2.4%) in Mali, more imams ($n = 10$) than pastors ($n = 2$) were sampled. Imams and pastors were chosen from large FBOs with different characteristics (residential areas and business areas) to ensure that a variety of perceived health promotion needs were captured.

To identify churches, the researcher contacted a popular church (a church known as a landmark for commuters of public transport) for a list of the four largest churches. The researcher then chose two of these churches: one located in a residential area and the other in a business area. Since there was not an available list of mosques, large mosques were defined as mosques that provide opportunities for congregants to have Friday prayers onsite at the mosque; an activity typically only held by large mosques. One mosque was selected in each of the six municipalities of Bamako ($n = 6$), as well as two mosques around each of the two main business areas ($n = 4$).

To identify mosques in the two main business areas of Bamako, the lead researcher asked local business owners or residents to show him the closest Friday prayer mosque. As far as residential area mosques, the researcher obtained information from the town halls of the municipalities about the location of the nearest Friday prayer mosque. Once a mosque or a church was identified, the lead researcher walked into the FBO and asked for the corresponding leader (imam or pastor).

The researcher contacted 12 imams in mosques in the interval between 2 pm prayer and 4 pm prayer (approximately between 2:15 pm and 3:45 pm). The pastors were contacted after the Sunday morning prayer, between approximately 11 am and 12 pm. The researcher gave a short verbal description (translated in Bambara or French) of the study to see if they were interested in participating. If an imam or pastor stated he was interested, that was considered verbal assent and then an interview was scheduled. Leaders who agreed to participate were asked to indicate the language (Bambara or French), the setting (mosque, church, home, or workplace) in which they felt comfortable for the interview, and the date and time they were available for the interview. Only 10 of the 12 imams contacted completed the interview. One imam declined to participate and the other canceled the

appointment because he was busy. Both pastors who were contacted completed the interview.

## Interviews

In-depth, one-on-one, semi-structured interviews using open-ended questions were conducted by the lead researcher. One interview was conducted in French with one of the pastors. The remaining 11 were conducted in Bambara. The objective of each interview was to explore religious leaders' perspectives of the health promotion needs of their congregants. The interview guide was developed based on the SEM and piloted with two imams outside the sample prior to the study in order to test and adjust for clarity. At the individual level, participants were asked questions about their own health-promoting activities, the health-promoting activities of their congregants, and common health problems of their congregants. At the interpersonal level, they were asked about ways their congregants support each other and what their congregants do if they have a health problem. For the organizational level, they were asked about challenges in their FBOs, health promotion activities and programs in their FBOs, and their health promotion programs of interest. At the community level, questions were asked about the relationship between their FBO and the community. Finally, for the policy level, questions about the internal health policies of their FBO and their country's health policies impact on FBOs were asked. The interviews were audio recorded, lasted no more than 1 h, and were conducted in a quiet place. In addition, field notes were taken after each interview in order to capture non-verbal expressions to complete the audio recording. Participants were informed that they could stop participating at any time.

## Observation

Observations were conducted by the lead researcher in order to assess the FBOs' physical environment for health-promoting assets. Such assets could be spaces that promote physical activity or materials that promote health (i.e., pamphlets, hand washing stations). Health promotion materials were defined as any material in the FBO's environment that could prevent disease and contamination, or that could enhance health and promote positive health behavior. The researcher visually scanned the physical environment of the FBOs, then confirmed with the imam or pastor what the researcher found before entering the data into the journal.

## Data Analysis

Each audio recording was transcribed verbatim into a Word document. Recordings were initially transcribed in the original language and translated into English by the lead researcher who was fluent in all three languages. Each interview was assigned a code, and no identifying information was associated with the transcripts. Observation data were also input into a Word document. Transcripts were analyzed in QSR International's NVivo 11 qualitative data analysis software (NVivo 2015). Data analysis followed a conventional content analysis approach in which an iterative process was used to understand the account expressed across all of the transcripts (Baxter 1991). Two trained researchers read through all of the transcripts and developed a codebook. The codebook defined categories and themes which were then grouped by level of the SEM. First, transcripts were coded into

Meaning Units (MUs). MUs are words, phrases, or complete statements that represent a single thought or concept. Next, MUs were coded into corresponding categories and categories were coded into corresponding themes. Ultimately themes were organized by SEM level. The lead researcher initially coded all of the data; the second coder then reviewed all coding and documented any disagreements in coding. The two researchers then met to discuss discrepancies and came to a consensus on all coding. Observation data from journal entries were manually transferred to a table in which health promotion assets and materials were analyzed for each FBO. Data were validated through triangulation, in which interview data, observation data, and field notes were discussed with the senior author.

## Results

### Interview

In total, 10 imams and 2 pastors (age range = 38–65, mean age = 52) were interviewed. Across the transcripts, 68 categories were placed under 16 themes. Those themes were organized by one of five levels of the SEM and included: eight themes in individual, two in interpersonal, four in organizational, one in community, and one in policy level (Table 1).

### Individual Factors

In this level, participants were first asked information about themselves and then about their congregants. Consequently, the most important themes were common health issues reported by their congregants, causes of health issues, perceived challenges of congregants, health-promoting activities by imams and pastors, and health-promoting activities by their congregants.

Participants noted the most reported health issue by their congregants were pain (knee, back, and muscle; 75%), malaria (41.6%), chronic disease (8.3%), and stomach issues (8.3%). For example, an imam said, "In my knowledge, hypertension, knee pain and diabetes are the most reported [health issues], also malaria and angina…" In the same aspect, a pastor commented, "… malaria is often reported, for older people, diabetes, hypertension and gastritis are frequent." However, when participants were asked about possible causes of these health issues, 58.3% of respondents attributed health issues to poor diet, while 33.3% believed it was God's will. For example, one imam said, "In the past these problems were not present, so we attributed them to the change in our diet such as an excess of oil consumption, seasoning, and so on." Another imam stated, "Malaria is caused by mosquito bites and by what we eat… As I said before, health problems are from God, however God also showed us the causes of the problem so we can avoid them sometimes."

Participants mentioned the primary challenge perceived by their congregants was poverty (75%). As an example, an imam said, "The people suffer a lot, whether they say it or not, everybody takes care of his health problem, but poverty is the big challenge." Another challenge mentioned by 50% of respondents was lack of good health care. For example, one imam stated, "Many of the public hospitals' physicians have a private hospital, and if you don't go there [private hospital] you won't get what you need. The country needs to do something about this. [The country must] provide a good healthcare system with competent health professionals."

As far as health-promoting activities, participants reported both the activities they take part in and activities their congregants take part in. In regard to their own participation in

**Table 1** Code organized in SEM

| Themes | Categories (MU)/frequency | Level of SEM |
|---|---|---|
| Imams and pastors' definitions of health | ✔ Physical ability (10)/3 | Individual |
| | ✔ Mental ability (6)/7 | |
| | ✔ Spiritual (5)/5 | |
| | ✔ Global wellbeing (2)/3 | |
| | ✔ Meeting the needs of the body (3)/3 | |
| | ✔ Psychological/social (2)/4 | |
| | ✔ Environmental wellbeing (1)/2 | |
| Common health issues reported | ✔ Malaria (5)/6 | |
| | ✔ Stomach issues (5)/5 | |
| | ✔ Pain (knee, back, muscle) (9)/9 | |
| | ✔ Chronic disease (5)/9 | |
| | ✔ Minor health problems (4)/4 | |
| | ✔ Not known (3)/4 | |
| Imams and pastors health | ✔ Good health (7)/7 | |
| | ✔ Health issues (6)/10 | |
| Challenges perceived by congregants | ✔ Poverty (9)/16 | |
| | ✔ Affordability (6)/8 | |
| | ✔ Lack of good health care (6)/12 | |
| | ✔ Bias in health centers (4)/5 | |
| | ✔ Negligence (1)/3 | |
| Causes of health issues | ✔ Lack of hygiene (2)/2 | |
| | ✔ Physical inactivity (2)/2 | |
| | ✔ Bad diet (7)/14 | |
| | ✔ God willing (4)/6 | |
| | ✔ Stress (2)/2 | |
| | ✔ Lack of education (2)/4 | |
| Health-promoting activities by imams and pastors | ✔ Hygiene (2)/3 | |
| | ✔ Diet (7)/16 | |
| | ✔ Physical activity (6)/7 | |
| | ✔ Other (3)/3 | |
| | ✔ Unknown (2)/2 | |
| Health-promoting activities by congregants | ✔ Hygiene (3)/6 | |
| | ✔ Physical activity (5)/6 | |
| | ✔ Unknown activities (1)/2 | |
| Negative health behaviors | ✔ Lack of hygiene (1)/2 | |
| | ✔ Physical inactivity (2)/2 | |
| | ✔ Smoking, drug, or alcohol (3)/4 | |
| | ✔ Unknown negative behaviors (4)/4 | |

**Table 1** continued

| Themes | Categories (MU)/frequency | Level of SEM |
|---|---|---|
| Ways for congregants to support each other | ✔ Visit to sick person (5)/5 | Interpersonal |
| | ✔ Financial contribution (9)/12 | |
| | ✔ Advice/education (6)/9 | |
| What congregant do in case of health problem | ✔ Go to health center (5)/5 | |
| | ✔ Seek help from FBO (5)/5 | |
| | ✔ Take care of own healthcare (9)/9 | |
| Ways imams pastors address health issues | ✔ Sermons (10)/16 | Organizational |
| | ✔ By example (3)/4 | |
| | ✔ Education awareness raising (7)/11 | |
| | ✔ Help seeking (2)/3 | |
| | ✔ Not addressing (2)/3 | |
| Health-promoting activities in FBOs | ✔ Charity (5)/6 | |
| | ✔ Education (2)/6 | |
| | ✔ Hygiene (9)/20 | |
| | ✔ Physical activity (4)/5 | |
| Challenges perceived by Mosques and Churches | ✔ Lack of knowledge on health/program (5)/8 | |
| | ✔ Lack of means (2)/2 | |
| | ✔ Government support (1)/1 | |
| | ✔ Difficulty to reach community (1)/1 | |
| | ✔ Lack of organization (2)/3 | |
| Health topic of interest | ✔ Any health topic (9)/10 | |
| | ✔ Education program (1)/1 | |
| | ✔ Health screening (1)/1 | |
| | ✔ Malaria prevention (1)/1 | |
| Involvement in the community | ✔ Serving local community (3)/5 | Community |
| | ✔ Ceremonies (4)/4 | |
| | ✔ FBO and community are the same (4)/4 | |
| Government involvement | ✔ Appreciation of healthcare system (2)/4 | Policy |
| | ✔ Government action is present (3/7) | |
| | ✔ Government action is needed (9)/21 | |

*MU* meaning unit

health-promoting activities, 58.3% of respondents reported that a nutritious diet was a health-promoting activity they took part in, while 50% mentioned physical activity. For example, one imam stated, "Thanks to God! I control my diet; I do not eat too much. At night, I never go to bed with a full stomach; I did not hear that from a health professional, I heard it from our elders." A pastor said, "I walk, [at least] 5 days of every week I do 10,000 steps, which corresponds to 50,000 steps/week, otherwise I would be KO (knocked out) by now. I also control my diet, not too much sugar, not too much salt, no meat, a little bit of fish, a lot of vegetables."

In regard to the health promotion activities their congregants participate in, 41.6% of the respondents mentioned that the main activity of their congregants was physical activity and

25% mentioned hygiene. For example, one pastor stated, "Some of them practice physical activity, others do hard physical labor, I think all of that is good." One imam said in respect to hygiene, "Our committee of management is working with two groups of young men to clean public places during the time of rain. They clean mosques and the community market place."

### Interpersonal Factors

At this level, participants (imams and pastors) discussed ways their congregants support each other, and about what their congregants do in case of a health problem. For ways in which congregants support each other respondents cited financial contribution (75%), advice/education (50%), and visiting a sick person (41.6%). For example, an imam said, "In case of sickness we help each other with money as Islam is a fraternity and mutual help is required." Another imam said, "Sometimes we give a microphone to health professionals who pray here to talk about health, because this is what they know. Our mosque is a place for worship, for health, and for advice." In addition, a pastor stated, "The support can be sharing experiences about diet, or the support could be helping somebody with financial mean for his disease."

As far as what congregants do in the case of a health problem, 75% of respondents said that their congregants take care of their own healthcare costs. For example, an imam stated, "Here everybody takes care of his [own] healthcare costs, from the imam to the rest of the congregants." However, 41.6% of respondents also reported that their congregants seek help from other FBO members; responses were often similar to how congregants support each other. An imam said in this respect:

> The implication of the mosque in the case of a health problem of an eminent member (somebody frequent at the mosque) is that the imam can say to other congregants that such person is sick and he needs your support. In such cases, people go to visit him during which some people may provide different kinds of help, from blessings to giving money.

### Organizational Factors

The themes within the organizational level were as follows: ways imams and pastors address health issues, health-promoting activities in FBOs, challenges perceived by mosques and churches, and health topics of interest of FBOs. For ways imams and pastors address health issues, sermons were the most common way reported (83.3%). For example, a pastor stated, "We train our pastors to address health before beginning the sermon, for example, for AIDS which is a disease among young men, they might say you contract HIV by fornication which God hates."

Another theme was discussion of health-promoting activities in FBOs. In this theme, cleaning (hygiene) was the most salient topic reported by 75% of respondents. For example, an imam said, "We don't have any other health-promoting activities than cleaning or making sure that healthy drinking water is provided." Likewise, 41.6% of respondents cited charity as a health-promoting activity in FBOs. For example, a pastor said, "We have a department named after a woman called Dorcas in the bible who used to do beneficence. This department collects funds from members to help individuals who are completely helpless."

As far as challenges perceived by FBOs as a whole, lack of knowledge about health and health programs was the most mentioned factor by 41.6% of respondents. For example, an imam said, "The challenges are the limitation of our [lack of] knowledge about healthy lifestyle programs." Other challenges mentioned were lack of means (i.e., resources, 16.6%) and lack of organization (16.6%). For example, an imam said, "We don't have the means. We know that there are ways to prevent many health problems, including malaria but we need to empower our mosque committee of organization in health aspects."

Most respondents (83.6%) reported that their FBOs were open to learning about any health topic. For example, an imam stated, "All topics are important. Any health topic that a health professionals brings us; we will do our best to raise awareness about that topic." It is important to note at this level that only the two churches had health programs. One church had three programs (smoking cessation, physical activity, and cooking); the other church had a farming program to fight hunger.

### Community Factors

At the community level, the unique coded theme was FBOs involvement in the community. In this aspect 33.3% of respondents reported that there was no distinction between people in the community and people of the FBO. For example, an imam said, "The mosque is the community. It is the same community that comes in the mosque; and the mosque was built by the community." Another 33.3% of respondents also reported that their FBOs participate in ceremonies in their respective communities. As an example, an imam said, "We collaborate with the community in other social and cultural matters such as weddings, baptisms, and funerals [taking place with families outside of their congregation]." In addition, 25% of respondents reported that they serve the community in different ways. For example, a pastor stated, "We have programs to teach the community how to cook healthy, how to take [your] pulse and blood pressure. When we invite people in the community, generally older people come and for other activities like sports young people come."

### Policy Factors

Within policy factors, the main theme was government involvement, specifically the need for government action in health matters (75%). As an example, an imam said, "We need the government to step in [to help with] health problems and the healthcare system of the country…we need competent medical professionals." Conversely, the two pastors believed that the healthcare system was good, one of them stated, "We thank the government of Mali as you have a health center [available] in every community and they are affordable. These centers do not have a specialized service, but they have good basic services, so we encourage our members to go to these community health centers." As far as FBOs' internal policies, only one church had a policy related to health, which was to train pastors to be healthy role models. That pastor said, "We have an internal program and an external program. Inside the church, we train our pastors to be health agents outside of the church walls because you cannot give what you do not have. Imagine somebody unhealthy talking about health, people would say look at this person talking about health and he is not healthy."

### Observation

Observations were conducted to visually assess the FBOs physical environments. The data (Table 2) revealed that only three FBOs had space for physical activity, a hygiene station, and clean drinking water. Three FBOs only had space that could serve for physical activity. However, five of the FBOs had no health-promoting assets whatsoever. The sole difference noted between residential area FBOs and business area FBOs was that business areas were less likely to have space that could serve for physical activities such as walking, running, or for soccer matches. This lack of space in business areas was essentially due to the illegal occupation of the space surrounding the FBO by some merchants.

## Discussion

The purpose of this study was to explore imams' and pastors' perspectives of the health promotion needs of their congregants in Bamako, Mali and to examine the physical environment for health promotion in FBOs. Major themes were categorized according to the SEM. There were more themes at the individual level than any other level due to more questions at this level in the interview guide. Key findings are discussed below.

At the individual level, the analysis of imams and pastors' definitions of health revealed their knowledge about health and a healthy lifestyle. The WHO defines health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (WHO 2016). Yet, respondents' definitions of health in general focused on the physical, mental, and spiritual well-being, which left out the important social well-being included in WHOs definition. On the other hand, the lack of discussion of important health factors such as inactivity and hygiene may indicate flaws in their knowledge about health. It is important to note that the lack of discussion of health topics was only among imams, pastors seemed more knowledgeable about health than imams did. This limited knowledge of imams was also found in a study conducted by Padela et al. (2011b) about the role of

**Table 2** Observation result

| FBO | Age of imam/pastor | Health-promoting materials in FBO physical environment |
|---|---|---|
| Mosque#1 | 52 | None |
| Mosque#2 | 55 | None |
| Mosque#3 | 49 | None |
| Mosque#4 | 41 | None |
| Mosque#5 | 38 | Hygiene station, clean drinking fountain, space that could serve for physical activity |
| Mosque#6 | 54 | Space for physical activity, hygiene station, drinking fountain |
| Mosque#7 | 52 | Drinking fountain, hygiene station, space for physical activity |
| Mosque#8 | 42 | None |
| Mosque#9 | 51 | Hygiene station |
| Mosque#10 | 65 | Space for physical activity |
| Church#1 | 62 | Space for physical activity |
| Church#2 | 64 | Space for physical activity |

imams in American Muslims health. Thus, future research or health promotion efforts could focus on educating FBOs leaders, especially imams, about health knowledge.

At the interpersonal level, respondents often mentioned that their congregants helped each other by offering financial contributions, visiting their sick colleagues, and/or advising their colleagues in health matters. These factors may indicate strong social cohesion within the FBOs and thus congregants may have adequate levels of social well-being which may not be recognized by FBO leaders. These findings are similar to other studies. For example, Allen et al. (2014) mentioned these same social values in a study among Catholic Latinos in Massachusetts. Furthermore, Padela and colleagues (2011a, b) found other values among Muslims, such values as imams advocacy for their congregants, their celebration of life event ceremonies, and their visit to sick congregants. It is important to note that these interpersonal activities may alleviate some of the difficulties pastors and imams' mentioned that their congregants face. For example, financial contributions could make it possible for some people to seek healthcare who could not otherwise do so, especially since many respondents mentioned that their congregants take care of their own healthcare cost and that poverty was the biggest challenge their congregants faced. Due to the level of collaboration and assistance among congregants, future research and health promotions efforts could examine how to best work within the existing social framework to reduce poverty and facilitate access to quality care.

As to the organizational level, ways the FBOs as organizations addressed health issues was mostly through education/awareness and sermons. However, the methods to address health issues were well structured and institutionalized in only one church because it was part of the training of the pastors. Therefore, future health efforts should focus on replicating the above example in other mosques and churches of the country.

The most prominent health activity in FBOs was hygiene, from cleaning to ensuring good drinking water was available. However, from the observation data, more than 60% of FBOs failed to provide good drinking fountains. Furthermore, it did not appear that many FBOs were consistent with cleaning; it was a voluntary act without rigorous control. Hence, efforts are needed to improve the hygiene and availability of clean drinking water.

In the aspect of having programs in FBOs, only the two churches had at least one health program. This is contrary to other research as mosques in other studies have had health programs (Bader et al. 2006; Bopp et al. 2012; Freedman-Doan et al. 2013). This difference between this study and other research might be due to the limited view of imams in Mali about their role in the health of society. The difference might also be due to the lack of knowledge about health and programs that imams in this study mentioned. Since 90% of imams said the health topic they wanted more information on was "any topic", this may indicate they are not familiar with any health programs or have a lack of knowledge about many health topics. Conversely, the response of "any" may also reflect their values of being humble. Although in this study, imams were interested in learning about any health topic, in a study in Senegal imams were less likely to see HIV/AIDS topic as a priority (Ansari and Allyn 2010). Furthermore, imams were less likely to attend educational programs related to HIV/AIDS compared to pastors in that study. Yet, both studies agreed in that pastors viewed health promotion as a priority, and were more knowledgeable about health programs than imams.

In addition, in the present study, pastors were more comfortable in addressing health issues; they had better organizational support; and they had bigger FBOs. This agrees with previous research that pastors were more likely to engage in health counseling if they had good organizational support, and if the churches were bigger (Fallon et al. 2013). The

mosques in this study, lacked similar organizational support and hierarchical structure, which could have further contributed to their lack of health promotion programming.

For the community level, imams and pastors expressed having a good relationship with local communities, and they were involved in various ceremonies in those communities. However, many imams did not see people of the communities as separate from people in the mosques. They thought that, the same people from the community were the worshipers within their mosques. This could be true do to the high percentage of Muslims within communities or this may indicate they do not interact with many people outside of their mosques. As far as churches, pastors also stated they had a good relationship with local communities. However, contrary to some imams' views, pastors did not view the people in their church and people in communities as indistinguishable. This may be because there are relatively few churches due to the high percentage of Muslims within the community. Nevertheless, imams and pastors' beliefs about their positive connection to the communities confirm research in other countries indicating FBOs are a promising avenue for health promotion efforts (DeHaven et al. 2004).

At the policy level, only one church had a clear health policy. It is not a surprise that mosques did not have any health policies because they did not have any health programs. Further, their major challenge was lack of knowledge about health and health programs. As far as the government's health policy impact on FBOs, imams did not see any impact, and expressed the need for government action. Although the two pastors recognized some strengths of the country's healthcare system, there is lack of good prevention efforts in government health policy. Future research on health promotion programs might focus on policies that provide FBOs a better platform to promote health.

### Strengths and Limitations

This study had several strengths. First, it used both interviews and observations to explore the health promotion efforts of FBOs. Second, it is the first study to explore the health promotion needs and efforts of FBOs in Bamako, Mali. Ultimately, the results could help to improve the health promotion efforts of FBOs in Mali. However, the study also presents several limitations. First, participants' low health literacy could have narrowed their view of health and healthy behaviors. Second, challenges related to tailoring the questions to the cultural understanding and education level of participants might have limited their understanding of some questions to an extent. In addition, respondents may have been stating what they thought the researcher wanted to hear. It is also important to note that some critics might view the differences between mosques and churches as unreliable because of the sample makeup (two churches vs. ten mosques). Future research could explore the similarities and differences of imams and pastors' perceptions of health promotion by FBOs in Bamako, Mali in a larger sample.

## Conclusion

In this study, the two churches in Bamako were well involved in health promotion efforts as both had at least one health promotion program. In addition, the two pastors seemed to be more knowledgeable than imams about health and health programs. This difference might be due to the churches organizational structure, and the continuing education pastors receive. Future studies should focus on how to empower FBOs of Bamako, Mali to address health and healthy lifestyle programs. However, priorities should first be made to develop

and implement health education programs for imams as they have limited health knowledge. Ultimately, the development of healthy lifestyle programs should be a priority within Mali.

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