Exploring church members' perceptions towards physical activity, fruits and vegetables consumption, and church's role in health promotion: implications for the development of church-based health interventions

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Abstract

Background: The study explored the perceptions of church members towards physical activity (PA), the consumption of fruits and vegetables (FV), and the church's role in health promotion prior to the development of a church-based intervention for physical activity and fruit and vegetable consumption in Lagos, Nigeria.

Method: Sixteen focus group discussions (FGD) and eleven key Informant Interviews (KII) were conducted. Eight FGDs among adults and four among the youth and the elderly church members. Key informant interviews were held among church leaders and members of the church medical advisory. Study findings were categorized under thematic headings. Based on the data analysis, several key themes were identified: the knowledge of the concept of health and common health problems, opinions of physical activity, opinions of healthy eating and fruit and vegetable consumption, types and attitudes towards existing church-based health programs and the role of the church in health promotion and church-based health programs. Within each theme, several child-themes were noted such as the challenges with fruit and vegetable consumption, biblical support for physical activity and fruit & vegetable consumption, the role of the church leaders, program sustainability and barriers to participation.

Results: The participants perceived health not only as the absence of disease but as general well-being of the body and soul. Health was also related to the ability to perform religious activities. Common health problems included a mix of communicable and non-communicable diseases. They are aware that physical activity, fruits and vegetables are essential for healthy living. The youth saw it as a means of improving their physical appearance however the elderly expressed concerns about the possibility of associated trips and falls. Overall, they viewed fruits and vegetables as healthy foods while processed western foods were perceived as unhealthy. Fruits and vegetables were seen as beneficial primarily to aid food digestion, boost immunity, improve youthfulness, aid weight control and to prevent chronic disease. The study participants agreed that the church, as an institution, has a significant role to play in promoting the health of her members. Instituted health committees embedded within existing church structures often lead church-based health-promoting activities and are imperative for sustainability. Types of health programs included health talks, screening programs for common NCDs, sport competitions, distributions of FV during church ceremonies such as harvests, Lenten seasons, Love feasts and church bazaars. Health outreaches were seen as a means of evangelism, and it was unanimously agreed that the Bible supports PA and healthy eating. Generally, the respondents had positive attitudes towards church-based health programs and they advised that future programs include the use of technology and should be integrated into existing church activities to improve participation. The participants also noted that the opinion of the church leaders influences the behaviours of church members and their support is critical in the development and implementation of church-based health programs.

Conclusion: Church members are aware that physical activity and the consumption of fruits and vegetables are important for healthy living and expressed support for church-based health pro-

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Key words: Fruits, Vegetables, Physical Activity, Bible, Health Promotion, Focus Groups.

Conflict of interest: The authors declared no conflict of interest.

Funding: The protected time of Oluwakemi Odukoya for this research was supported by the Fogarty International Center of the National Institutes of Health under Award Number K43TW010704. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Acknowledgements: We acknowledge all the church leaders who assisted with participant recruitment and the participants of the study. We also acknowledge the efforts of the following people who participated in data collection, Abiodun Makay, Ajoke Adewole, Florence Chieme, Brenda Isikekpei, Austin Ajogwu and Lucky Ogidan.

Ethical considerations: Ethical approval was obtained from the Research Ethics Committee of CMUL/HREC/05/18/347. The purpose of the research was clearly explained to participants and their right to withdraw. Names were changed to pseudonyms. All recordings were stored in a password-protected database.

Received for publication: 24 December 2021.
Accepted for publication: 16 May 2022.

Journal of Public Health in Africa 2023; 14:2112
doi:10.4081/jphia.2023.2112

grams. They believe that the Bible supports the promotion of PA and FV consumption as healthy behaviours. Program integration, the use of technology and support of church leaders and existing church medical advisory groups are imperative for developing and sustaining church-based health programs.

Introduction

Physical inactivity and low consumption of fruits and vegetables (F &V) are significant risk factors for non-communicable diseases (NCD).[1,2] Individuals with insufficient physical activity levels are at increased risk of cancers, hypertension, stroke, obesity, diabetes, cardiovascular disease and early mortality.[3] According to the World Health Organization (WHO), at least 60 minutes of moderate to intensive physical activity and dietary consumption of at least 400 grams of fruits and vegetables each day (roughly equivalent to five servings of fruit and vegetables) is recommended for healthy living.[2] However, in several African countries, physical activity and F & V consumption levels are below the

This should be a continuation and not a separate paragraph between the recommended and actual practice in many regions in Africa.[2,4] Religion is central in the lives of people around the world.[5] Africans, in particular consider religion a significant part of their lives and tend to have high levels of religious involvement.[6] Most world religions prescribe healthy behaviours such as physical activity and healthy eating for spiritual advancement. Almost all major religious traditions have rules and regulations concerning diet and other health-related behaviours, even though they may vary in the extent to which such guidelines are applied.[7] Religious beliefs and involvement could influence behavioural health pathways for NCD prevention via physical activity, healthy diet, and weight control.[8,9]

Faith-based institutions such as churches provide a unique opportunity to promote healthy behaviours and improve the health of members.[10] However, to maximize this opportunity, it is imperative to understand the opinions of the church leaders and members regarding these health behaviours, and the role of the church in health promotion for the successful implementation and sustainability of such programs.

The aim of this study was two-fold. First, we sought to explore the perceptions of health, physical activity and fruit and vegetable consumption among members of an orthodox church in Lagos, Nigeria. Then, we explored the opinions of the church members on the role of the church in health promotion and the design of health-related church programs prior to the development of a church-based intervention for physical activity and fruits and vegetable consumption.

Materials and methods

Study design and participant recruitment

This study was conducted as part of a larger study that aimed to design and pilot-test the efficacy of a church-based intervention to promote fruit and vegetable intake and physical inactivity. A cross-sectional descriptive qualitative study was carried out among church leaders and members of a large group of orthodox churches in Lagos, Nigeria, using focus groups and key informant interviews. Focus group participants (n=163) were recruited with the help of the church leaders. Participants for the key informant interviews (n=11) were purposively selected based on their roles in the church and participation in church activities. Eligible participants were males and females who had been church members for at least one year prior to the study and attended church services at least once weekly. Key informants were church members who held leadership positions within the church.

Procedures

The research team developed the data collection tools following a literature search and guided by the study objectives. Before adoption, these were pretested to refine and identify religious, culturally appropriate and contextually relevant wording for the questions. (Appendix 1 shows the data collection tools for the focus groups and the KIIs). Trained moderators conducted the discussions and interviews after obtaining informed consent and basic socio-demographic data. Participants were reassured of the confidential nature of the study and encouraged to express their views freely. Sessions were audio-recorded, and a note-taker took field notes. Interviews/discussions were held within the church premises or at any other location preferred by the participants. Sessions lasted 45 to 90 minutes and were conducted in English. Because of the varied age distribution pattern of the church members, focus groups were conducted in three age categories: Young adults (18-30 years, Adults (31-64 years) and the elderly (>65 years).

Participants

In total, sixteen focus group sessions were conducted, eight among adults (n=72) and four among the youth and the elderly (n=46 & 45 respectively). One hundred and seventy-nine participants were approached to participate in the focus groups. Of this number, sixteen refused to participate primarily because of a lack of time or interest, giving a response rate of 91.1%. In addition, eleven interviews were conducted with the representative of the bishop (the overall head of the group of churches) (1), women's leader (1), five (5) members of the church medical advisory and four church priests.

Of the eleven participants that were approached for the KIIs, none declined to participate. Data collection ceased when saturation appeared to have been reached. There was no repeat. FGD participants were mostly female (57.7%). Nine of the eleven key informants were male. The mean ages (SD) of participants in each FGD category were 23.1(3.5), 46.8(10.2), 74.3(5.2) for youth, adults and elderly participants, respectively.

Data analysis

The audio recordings were transcribed verbatim and merged with the field notes. These were analyzed using a deductive-inductive coding approach.[11] An initial coding scheme using broad deductive themes relevant to the study questions and the literature was developed and created as main codes.

Child codes were subsequently created under each main code as appropriate using the same format. Two independent team members read each transcript and applied these codes to the data using these codes. As coding proceeded, additional themes induced from these themes emerged and were discussed by the research team and subsequently included in the coding scheme. The revised coding scheme was then applied to all transcripts. Next, we followed the steps in the thematic content analysis as outlined by Braun & Clarke.[12] Briefly, this involved first familiarizing ourselves with the transcribed data by reading, re-reading the data and noting down initial ideas. Then, we generated and reviewed the codes using the framework described above and finally, and we selected and reviewed vivid, compelling extracts for each theme. Data analysis was done using Dedoose (version 8.3.35), a web-based application for managing, analyzing and presenting qualitative research data.

Ethical considerations

Ethical approval was obtained from the Research Ethics Committee of CMUL/HREC/05/18/347. The purpose of the research was clearly explained to participants and their right to withdraw. Names were changed to pseudonyms. All recordings were stored in a password-protected database.

Results

Based on the data analysis, several key themes were identified: the knowledge of the concept of health and common health problems, opinions of physical activity, opinions of healthy eating and fruit and vegetable consumption, types and attitudes towards existing church-based health programs and the role of the church in health promotion and church-based health programs. Within each theme, several child-themes were noted such as the challenges with fruit and vegetable consumption, biblical support for physical activity and fruit & vegetable consumption, the role of the church leaders, program sustainability and barriers to participation.

Respondents' knowledge of the concept of Health and common health problems

Certain words were recurrent when respondents described their understanding of the concept of health. Words such as 'well-being', 'lack of sickness', 'wholeness', and 'a sound mind' were used to describe health. One FGD participant noted *"...for me, I can say health means general well-being of the mind and body". (Youth, male, FGD).*

Health is peace of mind! (Adult female, FGD) Health is life! (Adult, male, FGD)

"*Health means absence of sickness and presence of sound health, health, mind and soul*". (Adult, male, FGD)

"Health is the physical, emotional and psychological well-being". (*Youth, male, FGD*)

The adults and youth described health as having a sense of general well-being, wholeness and calm, elderly people on the other hand tended to refer to health as being free of disease and able to perform daily activities such as movement, feeding and a sound sleep. *"Health is when you can eat, move, walk and sleep well; being free of disease and pain".* (*Elderly, male, FGD*)

"Health is having peace in your body and mind, enjoying life" (Adult, male, FGD).

The concept of mental health as an important aspect of health also emerged and this was noted more among the females.

Health is a state where you are free from anxiety, worries, any form of fear whole your emotion is stable- (Adult, female, FGD)

Health was also related to wealth and the ability to perform religious functions. Another participant noted "*Our health is our wealth. When we have health, it determines what we can do because when we*

are healthy we can come to church every time, when we have program we can come, when we have vigil, we can come because our health is our wealth" *(Adult, female, FGD)*

Participants' common health problems or health concerns

Participants' common health problems included a mix of both infectious and chronic diseases. Malaria and typhoid fever were the common infectious diseases mentioned while high blood pressure, diabetes, common cancers such as prostate, breast and cervical cancers and mental health problems were also mentioned. It was clear that malaria and infections were a more prevalent health need among children while chronic diseases were the main problems of the adult and the elderly. One participant noted "*Malaria for younger one's malaria too and infections like viral and bacterial"* (*Adult, female, FGD).*

The health concerns for the elderly were primarily chronic diseases such as hypertension, diabetes, prostate enlargement and arthritis.

"*Diabetes is so common among elderly men" (Adult, male, FGD)*

"*Elderly men suffer from prostrate…females, arthritis...(Adult, female, FGD)*

Mental health and social concerns were also mentioned by several participants. This included, depression insomnia,loneliness and a lack of recreation.

……loneliness, not having recreation or walk round and interact with people" (*Adult, male, FGD*).

Respondents' opinions of physical activity

Most respondents equated physical activity to participating in one form of bodily exercise or the other, being able to move the body muscles and joints and working out to burn calories.

"*Physical activity is any activity that involves moving the body and limbs to burn energy" (Adult, Male, FGD*) This perception was shared unanimously by all age groups. Most respondents reported that physical activity was good for health and played a role in body fitness. When asked to give examples of forms of physical activity, we noted some differences in perception of the types of physical activities engaged in by various age groups. The elderly mentioned mild exercises such as leisurely walking and body stretches. "*I wake up in the morning, I pray, drink a cup of water, do somebody stretches and walk around my compound." (Elderly, Male, FGD)*

The adults mentioned moderate forms of physical activity such as road walks, climbing staircases and swimming. "*In physical activity, you should use your whole body such as in swimming". (Adult female, FGD)*

For the youth, even more active forms of physical activity were mentioned, such as jogging, running and jumping. The youth also noted that physical activity improved physical appearance. However, the elderly expressed the prevailing concern of slips, trips and falls as a barrier.

"*Physical activity is when you engage in jumping or running". (Youth, male FGD*)

"*Physical activity helps one have a presentable look with a flat stomach and six packs". (Youth, male, FGD*)

They (family and friends who care) don't want you to fall down (hurt yourself)...- (Chorus response by elderly participants)

There was the general perception that activities like daily commute constitute a significant part of daily physical activity particularly among the active age groups i.e., the youth and adults. However, most

respondents reported that the busy nature of life in a city like Lagos may deter people from participating in physical activity and cause them to view physical activity negatively.

"I feel everyone does physical activity because they go to work every day". (Youth, male, FGD) "Physical activity in Lagos is coupled with stress of living in a city like Lagos". (KII Male, Clergy)

"troubles from Lagos such as road traffic hold-up can deter people from being more physically active.

Many Lagosians (people who live in Lagos) would think that the hustle and bustle of Lagos is good enough physical activity but, when you try to let them understand that look you have to do some aerobic exercises. They tell you that the time I try to catch a bus (laughs) trying to run they believe that is enough physical activity. (KII Male, Clergy)

Respondents' opinions of healthy eating and fruit and vegetable consumption

Respondents across all age groups described healthy eating as eating a balanced diet containing the five classes of food including fruits and vegetables and eating a complete diet.

"A healthy diet is one that contains the five classes of food, including vegetables, proteins and fruits for my age." (Adult, Female, FGD)

Other descriptions of healthy eating included nutritious food and food that tastes good. However, a few of the respondents described healthy eating as eating the normal Nigerian staple diet unprocessed foods or eating natural or organic food.

"*Healthy foods are natural foods that do not contain chemicals".* (Adult, Male, FGD)

When asked of their opinions of unhealthy eating, most respondents described red meat, fizzy drinks, processed foods, fried foods, sugary foods and foods high in carbohydrates as unhealthy.

"*Foods that contain too much starch, fried foods and sugary foods are unhealthy*". (Adult, female, FGD)

Respondents were also asked to provide examples of healthy foods that they consume. Fruits mentioned included locally available fruits such as bananas, watermelons, paw-paws, oranges, pineapples, lemons, apples and mangoes. Vegetables which are also locally available were also reported to be consumed by respondents. Staple Nigerian diets were also mentioned by respondents as being healthy diets while western diets were considered unhealthy.

Our local diet here (in Nigeria) is healthy but when you eat all these 'oyinbo' foods (Western diets) it is expensive and not good for the body (Adult, female, FGD)

Health benefits of fruits and vegetable consumption

Although, most respondents reported that the consumption of fruits and vegetables helped in aiding digestion, this was alluded to by the elderly respondents in particular. "*When I eat fruits, I go to toilet easily and no constipation.*" (Elderly, Female, FGD)

A few of the elderly respondents mentioned the prevention of hypertension and eye disease as well as maintenance of healthy weight as other advantages of consuming fruits and vegetables.

The adult and youth reported the advantages of consuming fruits to include boosting immunity, preserving brain function and maintaining a fresh and youthful look.

"Eating fruits helps us to boost our immunity". (Adult, Male, FGD)

Challenges with fruit and vegetable consumption

Most respondents opined that regular consumption of fruits and vegetables may cause loose stools especially if the fruit is not properly preserved or if contaminated. Some reported that they felt not all fruits are considered healthy and opined that some fruits should not be consumed by people with certain medical ailments such as hypertension and diabetes.

"There are fruits that are not good for people with hypertension, watermelon is not good for people with diabetes. Fruits like cucumber, garden egg, grapes are good fruits". (Elderly, Male, FGD)

The youth reported that a disadvantage of fruit and vegetable consumption was that it does not satisfy hunger. "*The disadvantage for me is it doesn't hold you, it is not filling enough"* (Youth, Male, FGD)

It was also noted that cultural factors as well as personal factors such as education, income and personal habits affects fruit and vegetable consumption among church members. *"...eating patterns are a matter of education and financial strength*" (KII, Male, Clergy)

"I think that we were actually not trained to eat or buy fruits". (Youth, Male, FGD)

Role of the Church in health promotion

The role of the church in shaping perceptions of physical activity and healthy eating was supported by both FGD and KII participants and there was an almost unanimous agreement that the church had an important role to play in health promotion activities. The church has existing medical committees that organise health related activities.

"*The church has a very important role in the health of its members because health is wealth, and a healthy church community will help the church to achieve its objective and mission. The church is*

interested not just in the spiritual well-being but also in the physical well-being of members". (KII Male, Clergy)

"The church has a medical group. Their major responsibility is to sensitize people. It is this group that bears responsibility for the health programs in the church. (Youth, Female, FGD)

This view was shared by another participant who said, *"The church is meant to be involved in terms of providing facilities for recreation to enhance the health of church members*". (Adult, Male, FGD)

The church conducts health outreaches and uses these as an avenue for evangelism. *"In our church we conduct regular outreaches. About three times a year. Most of these focus on the common health problems of the church members or the community. Cervical and breast screening, eye checks, oral hygiene, blood pressure, scaling and polishing and even polio revaccination are part of our programs. We are happy to do this"* (KII, Female, Womens' leader)

The Bible supports physical activity and fruit & vegetable consumption

Both church members and leaders unanimously agreed that the Bible supports physical activity and fruit & vegetable consumption. They quoted bible verses that support health and support physical activity that healthy eating. However, the link between the Bible and healthy eating seemed to be more predominant than that of physical activity.

God wants us to be healthy! Even the Bible says it in many ways (Adult, Female FGD)

There are many verses in the bible that support health behaviours and we can use this to preach sermons about health (KII, Male, Clergy)

The Bible supports fasting, eating fruits and vegetables and not being lazy and all these are related to health (KII, Male Clergy)

*"The children of Israel marched around the wall of Jericho, marching along the red sea are examples of biblical teachings that support physical activity" (*KII, Female, Medical advisory)

"God banned the Israelites from eating some things because it was unhealthy." (KII, Male, Clergy)

It was noted that health programs that promote physical activity such as conducting road walks exercises and creating recreational programs may also serve as tools for evangelism. "*3 or 4 years ago, we had table tennis, snooker, and it really helped in making most of the youth come to church*". (KII, Female, Medical advisory)

Types of existing church-based health programs

Several health-related programs already exist within the

church. At the group level, the women's fellowship has occasional health talks during their routine meetings. Health outreaches are held three times a year and coordinated by the women's groups.

"We do more of health talks and general screening for cervical cancer, breast cancer, Hypertension and Diabetes. The medical society does the health program during anniversary every year." (KII, Male, Clergy)

"The church is trying. The women are doing better. Although, the men have started, they need to do more that will help male parishioners to cater to their health need (Adult FGD participant).

"The women's fellowship is more active with health programs than the men. The men's fellowship should be encouraged (Adult, Male, FGD)

On the existing programs for physical activity, participants mentioned that they had a one-week dedicated time in the year for physical activity in the church. However, some felt this was not enough. *"We only have one week of physical activity in a year, sometimes, it is a combined activity with other churches".* (KII, Male, Medical Advisory)

We organize programs for physical activity in the third week of June. i.e. Sabbath week (KII, Male, Clergy)

Some of the church members noted that programs promoting physical activity were primarily youth focused i.e. include youth football and youth table tennis matches. Some also mentioned the Women's March past. Elderly participants reported that they felt excluded in the existing programs for physical activities.

"The physical activities we have these days focuses more on the youth not adults or elderly ones". (Elderly, Male, FGD*)*

"The activities that exist are not for the elderly. They can arrange activities that will include the elderly" (Elderly, Female, FGD)

It was also noted that fruits are consumed after annual events such as lent, harvests, love feasts, bazaars or fasting programs and after mid-week fellowships occasionally. They reported that commonly available meals are served during most church programs and that they usually have no input to the type of meals served.

"The church makes the decision by themselves on the kind of food we eat during programs" (Youth, Female, FGD)

"They serve fruits during harvest bazaar, lent and sometimes after midweek service, but especially during harvest bazaar". (Adult, Female, FGD)

Most respondents contributed to the interventions they thought would help improve their participation in physical activity and consumption of fruits and vegetables.

While members agreed that the church had made some effort, many opined that they church needed to do more. They suggested that the church can do more to increase the level of physical activity and fruit and vegetable consumption in the church community by giving sermons that focus on fruit and vegetable consumption. According to a clergyman "*our sermons should be encompassing; we must encourage people to eat right*". (KII, Male, Clergy)

"The clergy should preach more about staying healthy and engage church members to come together and engage in aerobics". (Youth, Female, FGD)

"The church needs to create more awareness. They don't educate on the importance of fruits and vegetables" (Youth, Female, FGD).

Young people need to be encouraged. Most of our parents have hypertension. When young people begin to engage in physical activity, these diseases will be reduced drastically, I think" (Adult, Female, FGD).

Attitudes of church members towards church health related programs

On the attitudes of church members to church health-related programs, most respondents reported that there was a general positive attitude towards health programs due to a general interest and knowledge of the benefits of health programs. However, respondents pointed out that the attitude of church members to health programs increases in cases of a recent death of a church member

"I think people are always interested in an issue that has to do with health". (Adult, Male, FGD)

"The attitudes tend to be positive but enhanced if there is a recent death of a church member from stroke or Diabetes". (Adult, Male, FGD)

The role of the church leaders

Both church members and leaders agreed that the church leaders play a significant role in promoting health related activities in the church. The clergy mentioned that the church leadership encourages health related activities. "*We are encouraged by the Bishop as clergy to take a day off to rest and participate in physical activity by going to the gym. He tells us that it is when you are up and doing that you can do this work effectively"* (KII Male Clergy)

Most of the clergy reported that they are able to encourage church members to eat right by incorporating such admonitions in their sermons and providing facilities for physical activity.

"The church can incorporate the benefits of exercise and healthy eating in sermons to support physical activity". (KII, Male, Clergy)

"The church leaders can provide facilities for physical activity". (KII, Male. Clergy)

Sustainability of church-based health programs

A key factor in the sustainability of church related health programs is to work within existing church structures. Participants in both FGDs and KIIs noted that health programs already exist within the church setting. These are often organized by existing church medical committees or women's groups. External programs should be able to key into these existing structures for enhanced sustainability.

If you want it to work, you need to involve the leaders and the health committees (KII, Male, Clergy)

Sometimes some people come around to do their health programs but after a while we don't see them again (Elderly, Female, FGD)

You see…we already have our own health committee, and they organise health programs for us, they even treat us when we are sick. These are the people that you need to work with. (Adult, Male, FGD)

I think if you want to do a health program in the church, you need to involve the health committee. (KII .. . , , Male, Clergy)

We will be happy to work with you as we are already doing the work and you can support us. (KII, Male, Medical advisory)

Barriers to participation in church related health programs for physical activity and increased fruit and vegetable consumption

Participants pointed out that a lack of time amidst several competing priorities as the main hindrance to participation in church related health programs. This is especially true for busy adults and youth and who live living far away from the church premises.

"People are very much interested but the time and distance for such activities may hinder them from coming". (Adult, Female,

FGD) *"We want to come but where is the time?"* (Youth, Male, FGD)

Suggestions for the development of health programs for physical activity and fruit and vegetable consumption

For physical activity, most parishioners suggested that programs should be in the form of weekly activities incorporated into the existing church programs. Suggested interventions include awareness programs, incorporation of the importance of physical activity into sermons or lectures and health talks on physical activity. Other suggestions included the provision of an exercise room fitted with equipment within the church premises and a fitness instructor, games or aerobic classes. Other participants alluded to the use of technology in teaching and motivating church members to practice physical activity in their homes.

"We can use technology to teach and encourage them to practice it in their homes". (Adult, Male, FGD) *"Physical activity should be part of routine church programs".* (Adult, Female, FGD)

Discussion

Churches, as faith-based institutions, have a successful history of implementing health programs and have been identified as strategic partners for the promotion of public health.[13,14] Our study participants agreed that churches have a significant role in the health of their members. They reiterated that the Bible supports scientific health recommendations such as promoting healthy eating and PA.

Previous studies have found that religious behaviours were associated with protective health measures such as fruit and vegetable consumption,[8,15] and church members have been noted to consume more fruit, vegetables and less fat due to their exposure to religious teachings.[7] These findings support the assertion that religious teachings may influence health behaviours encouraging interventions that explore churches as avenues for health promotion. However, the relationship between religion and health may be viewed as a complex one. In some studies, religious involvements are shown to have a protective effect on health, however in others higher levels of religiousness were associated with poorer health outcomes.[16]

In this study, the participants perceived health not only as the absence of disease but as general well-being of the body and soul. This aligns with the World Health Organization concept of health as physical, mental and social wellbeing. Health was also related to the ability to perform religious activities and church members may be motivated to engage in healthy behaviours if they perceive that this will improve their capacity to perform religious activities. Planners of church-based health programs may take advantage of such belief systems to motivate church members towards healthy living behaviours.

In this study, we observed that the church members recognized physical activity and the consumption of F & V as important for healthy living. Similar findings were noted among Seventh Day Adventists in Metro Manila, Philippines, where the majority knew a healthy lifestyle and considered a vegetarian diet healthy.[17] In contrast, only a small percentage saw regular physical activity as necessary. This may be because biblical principles supporting healthy eating seemed to be more predominant than those related to physical activity, as noted in our study.

Health-related committees embedded within religious organizations play a significant role in supporting people's health in low and middle-income countries.[10] We observed that several health-related programs are already widespread within the church setting, and these are often implemented through the pre-existing church committees. Similar health committees embedded within the church structure and coordinated by church members have been noted in other studies.[10] These committees take the lead, and their involvement is critical for sustainable health- promoting activities within the church. Similar studies show that church-led health committees as valuable tools to address non-communicable diseases like diabetes mellitus.[10,18]

Faith leaders play a significant role in the health behaviour of their followers. They are uniquely positioned and exert influence at the individual and socio-cultural and environmental levels. This could be mediated through scriptural or social influence or by serving as positive role models.[19] In this study, participants also noted the importance of the role of faith leaders in health promotion. They mentioned that their faith leaders are often supportive of church-based health programs, which influences the behaviours of church members. Engaging the faith leaders in health behavioural change programs may serve as a helpful strategy to build support for lasting behavioural change among the followers.[20]

This is one of the first few studies that qualitatively explores the church's role in interventions designed to address physical activity and fruit and vegetable consumption among church members and leaders. The large number of discussions and interviews across different age groups and church leadership ranking is a major strength. However, it is not without its limitations, and the findings should be interpreted with some caution**.** First, as with all studies of a purely qualitative nature, the sample findings may be subjected to the biases of the participants. However, the large number of discussions/interviews may have been able to mitigate this. Secondly, all participants were from a single large denomination of churches, limiting the generalization of the results. Nonetheless, the study provides a detailed exploration of the concepts useful in planning church-based programs to address physical activity and low fruit and vegetable consumption.

Conclusions

Church members are aware that physical activity and the consumption of fruit and vegetables are important for healthy living and expressed support for church-based health programs. They believe that the Bible supports the promotion of PA and FV consumption as healthy behaviours. They agreed that the church, as an institution, has a significant role to play in promoting the health of her members. They had positive attitudes towards church-based health programs and they advised that future programs include the use of technology and should be integrated into existing church activities to improve participation. Program integration, the use of technology and the support of church leaders and existing health committees are imperative for developing and sustaining church-based health programs and should be considered in designing these programs.

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