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Prevalence of Hypertension And Associated Risks Among Gospel Workers of The Seventh-Day Adventist Church In Northern Ghana Union Mission

∗Cecilia Amponsem-Boateng, MPH[1]
[1](A Graduate of the Department of Public Health, Adventist University of Africa, Nairobi-Kenya)
Corresponding Author: *Cecilia Amponsem-Boateng, MPH1*

Abstract
Background:*Hypertension is the leading cause of death worldwide and affects both men and women. Although 30% of the adult population suffers from blood pressure above 140/90 mmHg, a third of those who suffer it do not know they have this disease.*
Method:*A cross-sectional, descriptive and non-experimental survey design was conducted involving 200 adult gospel workers aged 25years and above who were mainly Seventh-day Adventists from the Northern Ghana Union Mission (NOGH) of Ghana, as means of addressing hypertension and its associated risks, among gospel workers. Data was collected using a semi-structured questionnaire, anthropometric indices, measuring of blood pressures using standard procedures and face –to-face interviews.*
Results: *Of the 200 gospel workers 182 representing 91% were male whiles 18 representing 9% were female.Majority (40%) of the respondents were between 45-54 years old, with a mean average age of 45.4 years (SD: 9.90).More than half (56%, 112/ 200) of the respondents had it clear using the AHA standard to measure their systolic and diastolic reading. Out of those who had greater systolic and diastolic readings, 24% had 130/80 mm hg, 11.5% had 135/85 mm hg, 10% had 140/90 mm hg, and 6.5%, 2.5%, 1.5% of 145/95 mm hg, 170/100 mm hg and 180/110 mm hg respectively. It was comprehended from the result that, regardless of the high knowledge of hypertension among the gospel workers, there was also a high (38%) prevalence rate. Though some gospel workers claimed they were aware of being hypertensive and had adopted various anti-hypertension management and prevention measures, there was still a poor health behavior especially on diet and lifestyle among the gospel workers leading to the prevalence of hypertension.*
Conclusions*: Though the study showed a high prevalence of hypertension, it is obvious that among gospel workers such as pastors, elders of churches and church financial officers, most activities are taken to be more spiritual in nature,and therefore less attention is typically paid to the prevention and management of lifestyle/medical conditions like hypertension.*
Recommendation: *Effective nutrition/health education on topics such as My-plate guidelines, enlightenment on the causes and symptoms of hypertension, general improvement of the lifestyle and health behavior of gospel workers such as engaging in good dieting system, exercising regularly, and having enough rest. Part of a good prevention intervention would also include assess health status.*
Keywords:*Prevalence, Hypertension, Risk, Seventh-day Adventists, Northern Ghana Union Mission (NOGH).*

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I. Introduction

Hypertension is the single most important modifiable risk factor for ischemic stroke(Sacco, 2015). Not only is hypertension one of the most important risk factors for cardiovascular disease, it is also the number one modifiable risk factor for stroke(WHO, 2008). Though the precise causes of hypertension are usually unknown, there are several factors that have been vastly associated with the condition. They include:smoking, obesity, and diabetes, and sedentary lifestyle, lack of physical activity and high levels of salt intake(Owusu-Sekyere et al, 2013).According to Ibrahim and Damasceno (2012), different national and regional surveys confirm that hypertension is common in developing countries, particularly in urban areas, and that rates of awareness, treatment, and control are low. Findings from successive studies show an increasing prevalence of hypertension in developing countries, possibly caused by urbanization, aging population, changes in dietary habits, and social stress. Not only is hypertension more prevalent in low- and middle-income countries, there are also more people affected because more people live in those countries than in high-income countries. Further, because of weak health systems, the numbers of people with hypertension who are undiagnosed, untreated and uncontrolled are also higher in low- and middle-income countries compared to high-income countries. In developing countries like Ghana, several diseases exist but the most prevalent one over the past

decade is hypertension. According to the Ghana Health Service, hypertension has become the number one killer disease with its prevalence rate estimated at 30-40%. Generally, hypertension has a wide range of effects. It has serious associated risk factors that affect productivity and development of a nation. Such associated factors include kidney diseases, and other complications. Being a major contributor to premature deaths, it also contributes to 51% of stroke and 45% of ischemic heart diseases (IHD), deaths that are attributed to high systolic blood pressure. Hypertension cases have been alarming over the past decade in Ghana for example in Accra; the prevalence rate is 28.3% (crude) and 27.3% (age-standardized). Studies such as Appiah (2012), Owusu Sekyere et al (2013), the Ashanti region half year report 2010 and Bosu (2015), have all been done with respect to the causes of hypertension among Ghanaians.

Despite the prevalence of hypertension and its associated risks, scholarly works examining this in connection to developing countries are limited. But to help minimize or if possible eradicate this threat in the Ghanaian society, research on hypertension and its associated risk is warranted. Particularly, no research has been conducted to ascertain the rate of prevalence of the condition among the Gospel workers in Ghana. In addition, the researcher's encounter with and anecdotes have revealed that a number of Gospel workers in Ghana are suffering from hypertension, and this has necessitated this present research.

II. Methods

2.1 Study Area

Kumasi is located in the transitional forest zone and is about 270km north of the national capital, Accra. It is between latitude 6.35º – 6.40º and longitude 1.30o – 1.35o an elevation which ranges between 250 – 300 meters above sea level with an area of about 254 square kilometers. The unique centrality of the city as a traversing point from all parts of the country makes it a special place for many to migrate to. The Metropolis falls within the wet sub-equatorial type. The Kumasi Metropolis lies within the plateau of the South–West physical region which ranges from 250-300 meters above sea level. As the second largest city in Ghana after the capital, Accra, it recorded a population figure of 2,022,919, by the end of 2010.

III. Study Design

This study adopted cross-sectional, descriptive and non-experimental survey design. It is cross-sectional because it spanned a short period of time in data collection and analyses. Descriptive and non-experimental survey designs because it involves soliciting large volumes of information from respondents to answer research questions.In order to reduce the effects of the weaknesses associated with the use of design, the questionnaire was pilot tested. This offered the researcher the opportunity to reframe and sharpen ambiguous items. Further, respondents were assured of their anonymity and the confidentiality of responses provided which enabled them to respond frankly and dispassionately. Also, after administering the instrument, the researcher waited for respondents to fill in their responses and collect them and this increased the retrieval rate. The choice of the mixed methods approach was informed by a number of reasons. First, it was meant to achieve the logic of triangulation since no single method (such as questionnaire, interviewing of documentary analysis) could completely capture all the relevant features of any study.Furthermore, the combination of qualitative and quantitative methods enabled the researcher to crosscheck the data gathered by different methods, thereby, making the results of the study valid and credible. As observed by Bryman (2006) combining different methodologies in a single study enhances the researcher's claim for the validity of his or her conclusions if they can be shown to provide mutual confirmation.

IV. Sample Size Determination

The study adopted a multistage sampling technique to select the sample size. As of the time of carrying out the research, the Ashanti Region had four Conferences with four hundred (400) church workers in the Northern Ghana Union Mission (NOGH), of the Seventh-Day Adventists Church. At the first stage, a sample size of 200 was drawn from the sample frame of 400 at a confidence level of 95 percent. The estimation of the total sample size was derived from the Yamane (1967.886) formula:

$$n = \frac{N}{1 + N(e)2}$$

Where: e =Level of Precision

N = sample frame

N= sample size

Therefore, the sample size was determined as follows:

$n = \frac{400}{1+400*(0.05)2} = 200$

The second stage of the sampling involved the proportional stratification of respondents according to the percentage share of each conference as follows:

Proportionate Assignment of Sample Size

Conference	Sample frame	Sample size
South Central Ghana	120	60
Ashanti Central Ghana	60	30
Ashanti South Ghana	60	30
Central Ghana	160	80
Total	400	200

Source: Field Survey, 2016.

In the third stage, having determined the sample size from the sample frame, simple random sampling was used to select the participants for the study using the lottery method since the sample size was manageable and participants in each conference were not too scattered. To elicit objective and unconstrained responses from all participants, efforts were made to make all participants comfortable and able to participate fully. The meetings, therefore, were prepared with humorous stories, brief relaxation periods, and refreshments at strategic intervals.Basically, primary sources of data were used.A questionnaire survey was carried out in all the selected conferences of the NOGH. The questionnaire was pre-coded with a few open-ended questions that required information on perceptions and attitudes. Local church members who were trained by the researcher undertook the questionnaire survey. The questionnaire was divided into three sections, to cover the specific objectives of determining the knowledge levels of hypertension among gospel workers of NOGH; to identify the nature of management of hypertension among gospel workers and to determine the risk factors associated with hypertension among gospel workers. Some participants were also interviewed. Interviewing is a useful way of collecting qualitative data because the technique is 'introspective' and allows respondents to report on themselves, their views, their beliefs, practices, interactions, and concerns. Besides, most people are more willing to talk in an interview than the case would be if they were asked to write or fill out a questionnaire.

4.1 Sampling Techniques

Various sampling techniques which comprised both probability and non-probability sampling techniques were adopted in selecting the study respondents.

The various sampling techniques are discussed below.

4.2 Purposive Sampling

This was a non-probability sampling technique adopted by the researcher to specifically select Gospel workers in the Northern Ghana Mission of the Seventh-day Adventist church of Ghana. The study respondents were mainly gospel workers who were purposely selected for this study.

4.3Stratified Sampling

This probability sampling technique was also adopted since the study was conducted across four different sub-areas within the larger study area. Respondents were selected from the four areas namely South Central Ghana Conference, Ashanti Central Ghana Conference, Ashanti South Ghana Conference and Central Conference. The selection of the respondents from these four areas was done using a statistical approach by selecting respondents based on the population of the sub-areas and the proportion of the sub-areas' population in the total study population of the entire study area. This is clearly demonstrated in the sample determination section of this chapter.

4.4Data Analysis Techniques

The completed questionnaires were first edited for consistency. For the open-ended items, a short list was prepared from a master list of responses in order to get the key responses given by respondents. All the responses ticked on the questionnaire were recorded on a broadsheet before being fed into the computer for computer analysis, using the Statistical Package for Social Sciences (SPSS), version 20. To enhance scoring and analysis of the data, the various categories of the data and the various categories on the questionnaire were coded accordingly.

The descriptive nature of the study demanded both inferential and descriptive statistical tools to be used in the analysis of the data. The data was put into tables of frequencies and critically interpreted to answer the research questions whiles the data from the interviews were transcribed verbatim. Themes reflecting the richness of the participants' experiences were created. These themes were then connected to each other based on similarities and apparent interrelationships. For the purposes of clarity, the themes were checked with the transcripts to ensure that the connections worked for the primary source material. Once a coherent list of related themes was finalized, extracts representing themes were selected and were presented as direct narratives.

4.5 Ethical Principles

Scientific research requires that researchers conduct themselves according to ethical principles. The relation between the researcher and the informants is very important in scientific research because the informants can be affected by the research in several ways. Ethical considerations of informed consent, confidentiality and consequences were therefore carefully adhered to during the research. Consent was obtained from the Northern Ghana Union Mission workers and all the leaders of the Ashanti conferences to carry out the research in the metropolis. Permission was also sought from the Metropolitan Health Department to carry out the study in the selected health center chosen for the study. The purpose of the study was explained to each participant and their consent sought before they were recruited into the study. Respondents were also assured of strict confidentiality and data collected have been handled as such.

V. Results

The data collected from the respondents included the sex distribution, age distribution and educational qualification, and occupation of the respondents.

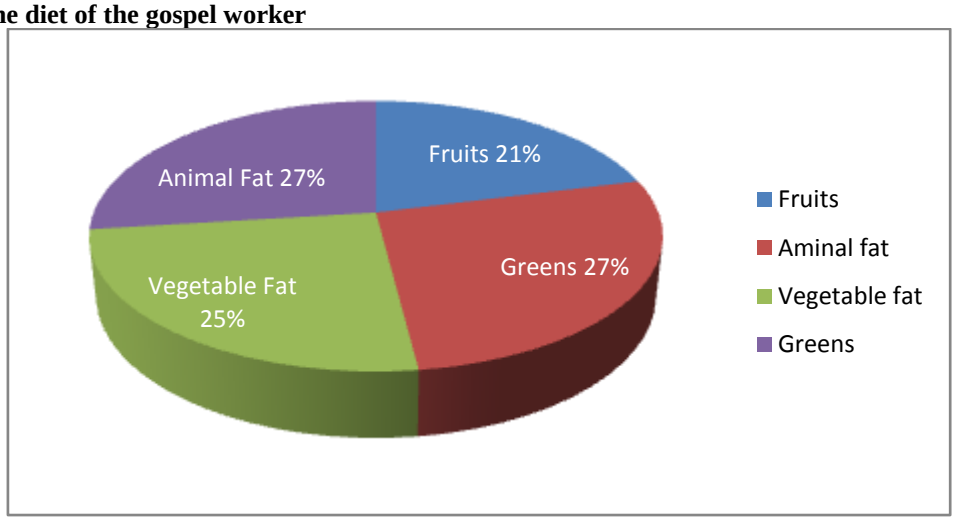
Characteristics	Category	Frequency	Percentage
Sex	Male	182	91
	Female	18	9
Age	25-34	35	17.5
	35-44	41	20.5
	45-54	80	40
	55-64	44	22
Occupation	Pastor	159	79.5
	Finance	27	13.5
	Clerks	14	7
Education	First Degree and Above	168	84
	Diploma	32	16
Anthropometric characteristics of Respondents			
Weight(kg)	46-55	45	22.5
	56-65	61	30.5
	66-75	49	24.4
	76-85	45	22.5
Height(cm)	69-100	39	32.5
	101-130	27	22.5
	131-160	24	20.0
	161-190	30	25.0

Source: Field survey, 2016.

Knowledge of Hypertension Symptoms among Respondents								
	Blurred Vision	Chest Pains	Dizziness	Headaches	Others			
	Yes	Yes	Yes	Yes	Palpitation			
Pastor	13	39	26	75	5			
Church clerk	0	2	3	3	2			
Finance	12	0	5	10	6			
TOTAL	25	41	34	88	13			
Management and Prevention of Hypertension among Gospel Workers								
Respondents' Occupation in the church	On Hypertension Drugs		Control Eating Habits	Drink Herbal Tea	Medication	On Medication	On Pills	Throughdiet exrcise and avoiding stress
	Yes	No						
Pastor	51	61	5	20	5	4	3	5
Church clerk	3	6	0	0	0	3	0	0
Finance	5	22	0	2	0	0	0	3
TOTAL	59	89	5	22	5	7	3	8
Activities to Control and Prevent Hypertension Among Gospel Workers								
Respondents' Occupation in the church	Activities							
	Eat a balance diet	Exercising Regularly	Reducing Stress	Cut Back on salt	Maintain a healthy weight	Monitor your blood pressure		
Pastor	58	45	23	15	10	8		
Church clerk	5	3	3	0	2	1		
Finance	9	8	0	5	0	5		
TOTAL	72	56	26	20	12	14		

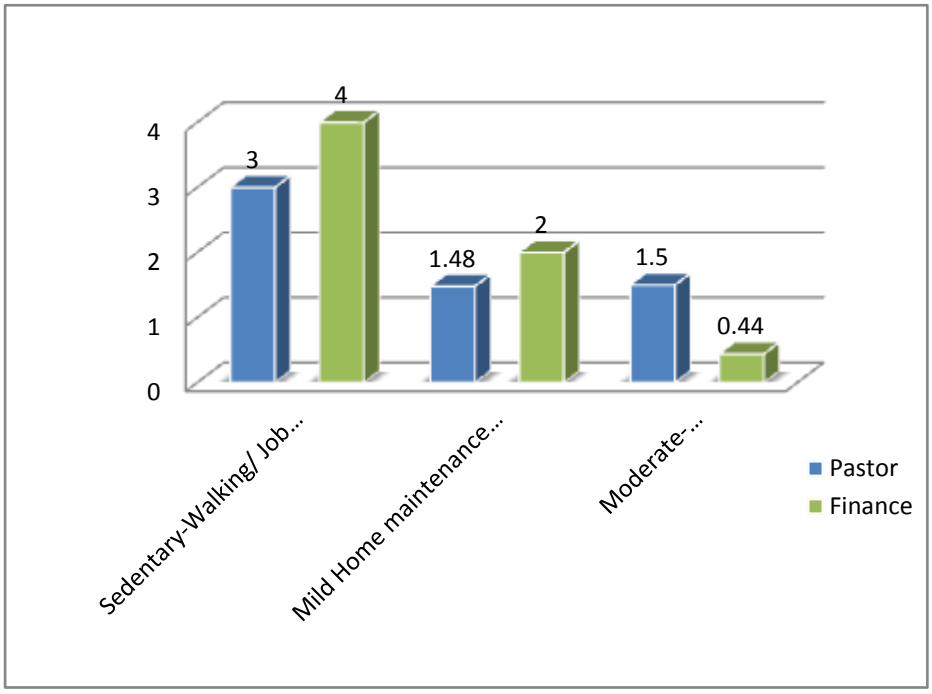
The study was basically conducted on 200 gospel workers who were predominantly Adventists. The majority of the respondents were males (182) with all of them highly educated since all the 200 respondents had attained tertiary education.The major perceived causes of hypertension among the selected gospel workers were identified as dietary factors (106 respondents, thus 53%), stress and eating late (53 respondents, thus 26.5%), lack of physical exercise (38 respondents, thus 18%), the other factors constituted only 2.5% of the causes.Studies from Intersalt Cooperative Research Group 1988 and other institution and scholars stated that much salt intake has the tendency of causing hypertension among certain groups. Due to this, the salt intake among the gospel workers was identified. In all, 86 gospel workers representing 43% claimed that they add salt to their cooked meals before eating whilst 114 (thus, 57%) indicated that they do not add salt to the cooked meals before eating.All the respondents had much knowledge about the perceived symptoms of hypertension such as blurry vision, chest pains, dizziness, headaches, and palpitation, with the commonest symptoms of hypertension identified by the respondents or gospel workers asheadache (44%), chest pains (20%), dizziness (16.5%), blurry vision (14.5%), palpitation (2.5%) and other causes.There was a high prevalence of hypertension among the gospel workers as 76 (38%) had ever been diagnosed with hypertension. Though 124 gospel workers (62%) had never been diagnosed with hypertension, the 38% prevalence rate is still considered high. It was also identified that 43 gospel workers (21.5%) had once or more attended the hospital in the last six months for high BP. Whilst 143 (71.5%) had never been to the hospital or clinic for a high BP in the last six months, with (7%) not knowing whether they had been to the hospital in the last six months for high BP. But considering their educational background it seems they were not willing to disclose that part of information. Again, out of the 200 respondents, 59 respondents (29.5%) indicated that they were on hypertension drugs whilst 89 respondents (44.5 %) were not on hypertension drugs. The remaining 52 respondents did not indicate whether they are on hypertension drugs or not. The major measures adopted by the hypertension patient among the gospel workers were: control of eating habits or dieting habit, taking or drinking of herbal tea, taking of pills and other drugs, through regular exercises and avoiding stress, whiles the main activities and measures adopted by the gospel workers as means of preventing and controlling hypertension among the respondents were identified as: eating balanced diets, exercising regularly, reducing stress, cut back on salt, maintaining a healthy weight and monitoring of blood pressure. The nature of dieting plans followed by the gospel workers as means of managing or preventing hypertension were: No special diet (29%), low salt renal-low salt/protein (19%), low carbohydrate/sugar/cholesterol (15%), vegetarian-vegetables and dry beans (7.5%). Ten point five per cent(10.5%) of respondents claimed they don't know of any dieting plan whereas (2.5%) didn't answer this question.The major diets taken by the gospel workers which also seemed to be of a greater risk were animal fats (27%), greens (27%), vegetable fat (25%), and fruits (21%)The main physical activities engaged by the gospel workers in order to manage and in managing hypertension were sedentary walking, swimming, soccer, mild household work and office work.

The diet of the gospel worker



Source: Field Survey, 2016.

Average Duration of Physical Activities of the Respondents



VI. Discussion

The results of this present study revealed an overall prevalence of hypertension including those on treatment among gospel workers as 67.5%, with the largest percentage of ages between 45-54 (40%) with (SD: 9.90). At the time of the survey, the prevalence rate of hypertension was 28.3% (crude) and 27.3% (age-standardized).In the Volta Region of Ghana, a survey reported a frequency of 32.8% for hypertension with a percentage of male as 30.7% and that of female been39.4%, whiles studies conducted by Owusu-Sekyere et al (2013) at the Adansi South district of Ghana also revealed that 27.1% representing almost a third of the respondents were hypertensive with the largest percentage of ages between 40-59, depicting high hypertensive rate in the age range. The findings of the present study are similar to what was reported in a study by Kumar et al, (2002) where different working departments revealed a prevalence of 51.6% of hypertension in Finance and Accounting staff, 45.2% of transport staff, and 29.8% of security and fire brigadiers. This clearly suggests that the occupational environment can also be a contributing factor to the prevalence of hypertension, and raises the question as to whether the prevalence of hypertension in gospel workers could be as a result of their occupation.Knowledge on hypertension were known by the majority of the respondents who were mostly pastors. Though (158) respondents had different views on symptoms they experienced such as Blur Vision of the eyesight, chest pain, dizziness and headaches which represents 13, 39, 26, 75 respectively, other symptoms had 5 when it comes to palpitation. Seventy-five (75) and (39) pastors were of the view that, they experience a headache and chest pain. However, church finance workers also explained that they had headaches and represented 10 out of the respondents. Hopkins (2016) showed that signs are uncommon with basic hypertension, but, the following may happen when blood pressure is seriously high: Headaches, Dizziness or ringing in the ears, Palpitations, Nosebleeds, Numbness or tingling in the hands or feet and Drowsiness or confusion.The result of the diet of the gospel worker was depicted as the number one risk factor of hypertension before other factors as their diets overturns from that of MyPlate recommendations for Adults. Poor dietary consumption of fats, carbohydrates and salt revealed (106) 53%, stress and eating late was (53) which represents 26.5%, and this was more common within the age group of (45-54), disputing the study of Motlagh et al (2015), where there was straight impact on the frequency of hypertension and old age where there was a suggested higher hypertension risk with elders.The findings of this study also indicated that (59) with majority being pastors are on hypertensive drugs and (128) also believe that by controlling their diets and exercises, they will achieve a normal blood pressure. Therefore, careful thought of screening and increasing public knowledge on hypertension and its symptoms is warranted among gospel workers. However, a large number of respondents as per the symptoms normally experienced also show that they may be probable candidates for hypertension as expressed by Bosu (2015) that, normally sedentary workers were at high risk of hypertension and there is a high occurrence of hypertension among West Africa's workers, of which a substantial percentage is undiagnosed, severe or complex.

VII. Limitation

In this study, the respondents consisted of both licensed and credentialed Ministers of the Gospel and non-ministerial workers of the NOGH. The NOGH comprises the Ashanti, Brong Ahafo and the three Northern Regions of Ghana. The limitation of the study primarily lies in its sampling technique. It used stratified sampling method. Though it gives the opportunity for proportional representation, it limited itself to only NOGH members who are only in Ashanti Region due to time and resources. Again, since most of the gospel workers of this part are mostly male, it may lack a balance in gender.

VIII. Conclusion And Recommendations

Prevalence of hypertension is high among gospel workers of NOGH. Hypertension remains one of the deadliest diseases which claim the lives of many people across the world, especially in Ghana. In the case of Gospel workers like pastors, elders of churches and church financial officers, most activities are taken spiritual, and though they are knowledgeable about the disease less attention is paid to its risks factors, prevention and management of NCD's such as hypertension. It is therefore recommended that there should be effective nutrition/health education for Gospel workers in order to enlighten them on the real causes and symptoms of hypertension.A good knowledge of My-plate guidelines for adults and that of the aged will also be necessary for them to know which nutrients are needed for their bodies per their ages as well as the quantities needed at a meal sitting. Gospel workers must improve their general lifestyle by engaging in good dieting system, exercising regularly, and having enough rest to prevent hypertension, and those who are already hypertensive should be encouraged to take their prescribed medications.Gospel workers must also be made aware of the fact that hypertension is a physical lifestyle disease which may be prevented by an individual's lifestyle more than a spiritual impediment.

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