

Diabetes And Hypertension; The Preventive Behaviours In Local Communities Of Ghana

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ABSTRACT

This research investigates whether the rural communities in Ghana do intentionally or unintentionally prevent themselves from contracting diabetes and hypertension through their everyday activities. It examines: whether the rural people do any form of exercises or physical activities to prevent diabetes and hypertension; whether the rural folks are mindful of their eating habits concerning diabetes and hypertension; whether the rural communities work under any form of stress; and whether the rural communities check their diabetes and hypertension status. The study employs both quantitative and qualitative methodologies, however the qualitative design dominated the research process because of the culturally sensitive nature of the topic. Key findings of this study highlights the fact that behaviours such as physical activity/exercising, eating habits, smoking, and stressful works, the rural communities are doing very well either directly or indirectly to prevent themselves from initiation of the development of diabetes and hypertension. However, other risk factors like excessive consumption of soft drinks; alcoholic beverages; addition of table salt to their foods; checking of one's diabetes or hypertension status, the study communities do not pay much attention to these risk factors as preventive mechanism of diabetes and hypertension. Practical implications include actionable recommendations for health promoters such as Food and Drug Authority, Ghana Health Service, Ministry of Health, etc. to educate the rural folk on the excessive consumption of alcohol, salt, soft drinks and the importance of checking ones diabetes and hypertension status periodically.

Keywords: Diabetes, Hypertension, Preventive Behaviours, Local Communities, Shai-Osudoku District

INTRODUCTION

“Non-Communicable Diseases (NCDs) are the leading cause of death in the world. The four main non-communicable diseases - cardiovascular disease, cancer, chronic lung diseases and diabetes - kill three in five people worldwide. Premature deaths from NCDs, however, can be prevented by changing policies and active engagement not only in health sectors but also at the community levels and in other sectors. Effective preventive actions will save millions of lives and avoid suffering” (Ban Ki-moon, UN general secretary, 2012).

Following the Political Declaration on Non-communicable Diseases (NCDs) adopted by the United Nations General Assembly in 2011, World Health Organization developed a global monitoring framework to enable global tracking of progress in preventing and controlling major non-communicable diseases - cardiovascular disease, cancer, chronic lung diseases and diabetes - and their key risk factors [1]. The action plan provides a road map and a menu of policy options for all Member States and other stakeholders to take coordinated and coherent action at all levels, local to global to attain the global targets, including that of a 25% relative reduction in

premature mortality from non-communicable diseases by 2025. The main focus of this action plan is on four types of non-communicable diseases — cardiovascular diseases, cancer, chronic respiratory diseases and diabetes — which make the largest contribution to morbidity and mortality due to non-communicable diseases, and on four shared behavioral risk factors — tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol. It recognizes that the conditions in which people live and work and their lifestyles influence their health and quality of life [1].

Conceptual and practical responses to diabetes and hypertension in Ghana have been largely through biomedical and clinical studies. Even though some limited research have been done on the socio-cultural aspects of diabetes and hypertension in Ghana, little have been done on the preventive mechanisms of the rural folks [2]. The Ministry of Health (MOH) Ghana, since 2005 has been emphasising on a paradigm shift from curative to preventive education on lifestyle diseases such as hypertension and diabetes [3].

From the annual health report of the Shai-Osudoku District (2021) where the study site was located,

diabetes and hypertension rank fourth and fifth respectively among the top 10 diseases since 2010 [4]. This study therefore seeks to explore the preventive mechanisms of hypertension and diabetes of the local communities at Shai-Osudoku district in Ghana. This study will therefore contribute to literature on the socio-cultural aspects of the preventive mechanisms towards diabetes and hypertension of the rural communities in their everyday activities which will widen the opportunities for further socio-cultural studies on the topic in Ghana. The following research questions guided the study:

- ❖ Do the rural communities intentionally do any form of exercises to prevent diabetes and hypertension?
- ❖ Are the rural folks mindful of their eating habits concerning diabetes and hypertension?
- ❖ Do the rural communities work under any form of stress? And
- ❖ How often do the rural communities check their diabetes and hypertension status?

SIGNIFICANCE OF THE STUDY

The findings of the study will inform institutions where health policies are designed to target specific health problems related to hypertension and diabetes. The study will bring to the policy table, the preventive behaviours of the rural communities towards diabetes and hypertension to ensure that any health intervention programs are culturally appropriate. Finally, this study will contribute to the body of knowledge of literature on the socio-cultural aspects of the lifestyles of the rural communities in Ghana regarding diabetes and hypertension and widen the opportunities for further research.

LIMITATIONS OF THE STUDY

The main limitation of the study is the generalization of the findings. This is because, the study was limited to only one district out of the 261 districts, municipal and metropolitan assemblies in Ghana. This was mainly due to limited resources and time constraint. However, this was addressed since the geographical location of the selected communities within the district are peri-urban which have both rural and urban characteristics.

LITERATURE REVIEW

The literature review focused on the existing studies which are relevant to the preventive mechanism behaviours of people towards diabetes and hypertension worldwide. This was centered on studies associated with prevalence of diabetes and hypertension in the world, in Africa and in Ghana. It also focused on the studies associated with sociocultural and preventive behaviours of people in their daily activities towards diabetes and hypertension. The theoretical framework which informed the study has also been discussed.

According to the World Health Organization, diabetes mellitus and hypertension have emerged as major medical and public health issues worldwide, and both conditions are important risk factors for coronary artery disease, heart failure and cerebrovascular diseases. The prevalence of diabetes in adults worldwide was estimated to be 4.0% in 1995 and is predicted to rise to 5.4% by the year 2025 [5a]. World Health Organization in 2017 estimated that 17.5 million people die each year from cardiovascular disease, accounting for 31% of all deaths worldwide and making this disease the world's biggest killer. According to WHO, about 80% of these deaths are caused by heart attacks and stroke. High blood pressure, or hypertension, is the leading risk factor for heart disease and stroke, and accounts for more than 12% of total deaths from cardiovascular disease. A large proportion of heart attacks and strokes can be prevented by controlling major risk factors through lifestyle interventions and pharmacological treatment when indicated [6]. In 2016, WHO issued a global report on diabetes, underscoring the enormous scale of a crisis. The report estimated that the number of adults living with diabetes has almost quadrupled since 1980, moving from 108 million in 1980 to 422 million in 2014. According to the report, more than half of these people are unaware of their disease status and even more receive treatment. The global prevalence of diabetes in the adult population has also increased, nearly doubling from 4.7% in 1980 to 8.5% in 2014. Diabetes is increasing most markedly in the cities of low-and middle-income countries. Most people are affected by Type 2 diabetes – once known as adult-onset diabetes, but no longer as so many adolescents and children are now affected [6].

The 2030 Agenda for United Nations Sustainable Development recognizes non-communicable diseases as a major challenge for sustainable development. As part of the Agenda, Heads of State and Government are committed to develop ambitious national responses by 2030, to reduce by one-third premature mortality from non-communicable diseases through prevention and treatment (SDG target 3.4). Most cardiovascular diseases can be prevented by addressing behavioural risk factors such as tobacco use, unhealthy diet and obesity, physical inactivity and harmful use of alcohol using population-wide strategies[5b]. People with cardiovascular disease or who are at high cardiovascular risk (due to the presence of one or more risk factors such as hypertension, diabetes, or already established disease) need early detection and management using counseling and medicines, as appropriate. Cessation of tobacco use, reduction of salt in the diet, consuming fruits and vegetables, regular physical activity and avoiding harmful use of alcohol have been shown to reduce the risk of cardiovascular

disease [6]. According to United Nations Sustainable Development Goals report [6]:

- ❖ Tobacco accounts for 7.2 million deaths every year (including from the effects of exposure to second-hand smoke), and is projected to increase markedly over the coming years.
- ❖ 4.1 million annual deaths have been attributed to excess salt/sodium intake.
- ❖ More than half of the 3.3 million annual deaths attributable to alcohol use are from non-communicable diseases.
- ❖ 1.6 million deaths annually can be attributed to insufficient physical activity.

In Africa, non-communicable diseases are estimated to become the commonest cause of death by the year 2030. Africa has been identified as the region with the fastest rate of increase of various non-communicable diseases[6]. According to Dalal et al [7], the number of persons living with diabetes aged 20-79 years in Africa is projected to increase by 98% from 12.1 million in 2010 to 23.9 million by 2030, compared with a global average of 54% increase over the same period. Again, the share of non-communicable diseases deaths among persons aged 15-59 years, is expected to increase in Africa by 44% from 28% to 41% between 2008 and 2030 [8].

Major causes of deaths in Ghana have shifted from predominantly communicable diseases to a combination of communicable and non-communicable diseases such as diabetes and hypertension [3]. According to GHS [9], hypertension, stroke, diabetes and cancers have become among the top 10 causes of deaths in Ghana. Urbanization, changing lifestyles (including poor diets), ageing populations, globalization and weak health systems are implicated in chronic diseases risks in Ghana. The prevalence of hypertension in Ghana, for instance, appears to be increasing at an alarming rate [10]. Among people of over 50 years, hypertension and other cardiovascular diseases have become increasingly significant as a cause of outpatient attendance with hypertension alone constituting nearly 3% of the total cases in all age groups and nearly 10% among the elderly in Ghana [11]. The estimated adult prevalence of hypertension in Ghana range from 28.0% to 40.0%. Nationally, hypertension has moved from being the ninth to tenth commonest cause of new outpatient morbidity in all ages from 1985 and 2001 respectively to become the fifth since [11].

A study by Owusu-Sekyere et al.[12] on the history of hypertension in Ghana found that in 1977, the urban and rural prevalence were 11.3% and 4.5%, respectively. In 2004, a study of the Greater Accra area found an urban prevalence of hypertension to be 32.9% and a rural prevalence to be 24.1%. Comparable results from a 2005 study in the Ashanti

Region, found the prevalence of hypertension to be 33.4% in urban areas and 27.0% in rural areas. This drastic increase in the prevalence of hypertension indicates a need for further study of the condition in Ghana. According to the 2013 Annual Report of the Korle-Bu Teaching Hospital, in 2012, seventy percent of all adult deaths at the hospital were caused by hypertensive conditions. The disease affects nearly one out of every five Ghanaian adults [13]. Hypertension is said to be a silent killer because many people have it for years but are not aware of it. It silently damages the brain, the heart, the kidneys and the eyes. Hypertension is said to be the major cause of stroke, heart attack, heart failure and chronic renal failure in Ghana. These and other blood pressure-related diseases constitute more than half of all admission cases at all the regional hospitals in Ghana [3]. Ghana Health Service in 2012 reported that a non-communicable disease survey conducted in 1998 recorded a national prevalence of 27.8% for hypertension. Studies conducted after the national survey in 1998, showed higher prevalence rates across different groups in different regions in Ghana: 28.7% in Kumasi; 32.0% prevalence in Bawku/Zebilla in the Upper East Region; 36.9% in Keta-Dzelukope in the Volta Region; and 47.8% among women in Accra [14].

Following the United Nations declaration on the prevention of non-communicable diseases by member countries in 2011, Ministry of Health (MOH) of Ghana, also developed a comprehensive national policy for the prevention and control of chronic non-communicable diseases in Ghana in 2012. The strategies adopted by the ministry in the prevention of non-communicable diseases include primary prevention and research and development. Primary prevention includes policies relating to tobacco and alcohol control, diet, and physical activity. In line with World Health Organization resolutions, Ministry of Health in Ghana decided to give high priority to promoting healthy lifestyles among in- and out-of-school youth. Health promotion policy will promote intake of fruits and vegetables; high fiber diet, moderate physical activity; reducing intake of energy dense foods, salt, fatty foods, sugar; avoiding tobacco; reducing excessive alcohol intake; and undergoing periodic medical check-ups [15].

In Ghana, Ministry of Health, led by the Food and Drugs Board (FDB), has developed a non-commercial influenced draft policy with the overall aim of helping to minimize alcohol-related harm to individuals, families and society. The policy addresses levels, patterns and context of alcohol consumption through a combination of measures that target the general population, vulnerable groups, such as young people and pregnant women, affected individuals and particular problems such as drink-driving and alcohol-related violence[15].

In the national policy for the prevention and control of chronic non-communicable diseases, Ghana endorses the World Health Organization recommendation for moderate-intensity physical activity such as brisk walking for at least thirty minutes on most days of the week. According to the framework of the policy, the general public is encouraged to engage in normal physical activities at home, at work and during recreation with incremental vigor [15]. The policy specifically targeted persons who are typically sedentary such as secretaries, drivers and market women who may be at high-risk of non-communicable diseases. According to the policy, adults can combine moderate and vigorous-intensity activities to meet the weekly physical activity recommendation. Every adult should also perform activities that maintain or increase muscular strength and endurance a minimum of two days each week. Children and young adults are encouraged to engage in physical activity for about one hour on most days of the week[15].

Dietary habits such as eating heavy foods in the night, going to bed immediately after eating, adding table salt to already prepared foods etc., have all been linked to the development of diabetes and hypertension[16]. According to **Julie M. Slowiak et al.**[17], stress is experienced when discrepancies develop, which is associated with physiological changes, feelings of discomfort, and concern. The extent of physiological change and feelings of discomfort will depend on the importance of the situation or the extent of motivation, on the degree of discrepancy or failure anticipated or experience, and on genetic and physiological factors[17]. This implies that, as long as social life runs smoothly, and as long as habits are adjustive, stress does not exist. However, when habits become disrupted, new stimuli demand attention and when the usual situation is altered, then stress exist. When stress does occur, according to Coelho et al.[18], cultural and personal devices must be available to the person under stress to contain and control feelings that impede long-term adaptations and to facilitate continued attention to ordinary activities. In viewing stress from the social point of view, it becomes essential to consider not only personal striving, strengths, and inadequacy, but also the manner in which these are shaped by the social structure of the community. From the above analysis of stress, it can, therefore, be said that the whole issue of stress is about modes of daily living and not just only work. However, research has shown that if one persistently works under stressful conditions could lead one to development of diabetes and hypertension [19].

According to the WHO [6], Lack of regular check-ups from any medical facility for proper health care in general in developing countries has been identified

as one major health problems. McGuigan[20] in his analysis of the unique cultural factors that impacted on diabetes self-management in the Eritrean and Ethiopian identified lack of regular checkups for diabetes and hypertension as risk factors of developing diabetes and hypertension. WHO and Francesco et al. [21] have all emphasized on reducing stress on oneself, regular check-ups, and quitting from smoking of cigarette as a major means of preventing hypertension and diabetes.

From the above analysis, diabetes and hypertension could be said to be a global health burden and Ghana is no exception.

THEORETICAL FRAMEWORK

Theoretical framework helps to structure ideas so as to explain causal connections between specific phenomena within and across specified domains by using interrelated sets of ideas whose plausibility can be tested by human action and thought [22]. This study used the Health Believe Model (HBM), which is an intrapersonal theory used in health promotion to design intervention and prevention of occurrence of diseases[23]. People's lifestyles are directly related to their daily behaviors and activities. Self-care as a routine lifetime behavior in hypertensive and diabetic patients plays a major role in the successful controlling of hypertension and diabetes complications and preventing the cost of treatment of these chronic diseases[24]. The health belief model is one of the most common patterns in health promotion programs and it explains why a person participates or does not participate in preventive health measures. The focus of the HBM is to assess health behavior of individuals through perceptions and attitudes someone may have towards disease and outcomes of certain actions[23]. Adherence and compliance with hypertension and diabetes prevention methods are directly related to a person's health belief and its dimensions. The theory examined the demographic characteristics such as socio-economic status, gender, age, etc. and how they are associated with preventive health-related behaviour patterns. The theory assumes that behavior change occurs with the following dimensions: Perceived severity: Beliefs about the severity of a disease; — Perceived susceptibility: Beliefs about the possibility of acquiring a chronic disease; — Perceived barriers: Beliefs about barriers to performing a behavior and the negative aspects of adopting a health behavior; — Perceived benefits: Beliefs about the positive aspects of adopting a health behavior[24]. Therefore, one of the most common concepts used in theoretical studies in health behavior modification and knowledge to improve people's health is the health belief model.

METHODOLOGY

Research Design

Qualitative or quantitative approach to research presents reality from a different perspective and

suggests alternative course or pathway to our understanding of reality [25]. In this study, both quantitative and qualitative approaches were used. Cross-sectional simple random sampling method was used in the selected communities for the study, specifically face-to-face conversational interviews was used. Generally, the qualitative design dominated the research process because qualitative research methods allow the study population the opportunity for greater personal explanation than quantitative methods. It is also believed that qualitative research is an effective way to do a culturally sensitive research such as this topic.

Setting

The setting of the study was in Shai Osudoku district of Greater Accra region of Ghana. Two communities (Doryumu and Ayikuma) in the district were purposively selected for this study. The two communities were selected because they are peri-urban and farming communities within the district. It is imperative for such study to be undertaken in the such communities so that any health intervention policies regarding diabetes and hypertension will take into consideration the rural populace.

Sampling and Data Collection Methods

The target population for this study were people living within the selected district who were 18 years and above and were neither hypertensive nor diabetic. The 18 years lower age limit was chosen because about 90% of people who suffer from diabetes and hypertension are 18 years and above [26]. From the 2020 Population and Housing Census of Shai-Osudoku District, the two communities selected have the following population: Doryumu – 1070 and Ayikuma – 1,150 peoples who were 18 years and above. Due to limited time and other constraints, 5% of this population in each community were interviewed, thus 54 from Doryumu and 58 from Ayikuma giving a total of 112 respondents from the two communities. Cross-sectional quantitative and qualitative community survey was used to interview the respondents who were selected randomly within each of the communities.

Face-to-face semi-structured interviews were used to collect the data. The utilization of a semi-structured format allowed the researcher to focus interview questions on each respondent's knowledge of diabetes and hypertension. The flexibility of this style of interview also allowed the respondents to share their opinions and behaviors that are relevant to the topic and how easy it is to secure respondents' cooperation in discussing the issues under investigations. Field notes on participants' gestures during interviews were also recorded. The age range of the respondents were from 18 to 74 years and all of them have completed at least Junior High School/Middle School Leaving Certificate.

Data Analysis

The quantitative aspect of the data was analyzed using Statistical Package for Social Sciences (SPSS) version 20. Descriptive statistics such as frequency tables and percentages were used to analyze, describe and represent findings from the data. With regard to the qualitative data, content analysis was used with coding of the information collected. Three levels of coding were used for the analysis; these are the open coding, axial coding and selective coding. These processes involve scanning through the data to look for cases that illustrated themes and generalizable trends and conclusions were drawn from the study. Throughout the coding process, memos of ideas and conceptual schemes were kept which helped to identify assumptions as well as emerging themes. Thematic analysis led to the development of themes revealed both within and across categories of data.

Ethical Considerations

Observing ethical guidelines was core to the success of the study. All the respondents were assured of confidentiality and that none of their details like names and health status would be disclosed. This was done to ensure that the respondents would answer the questions without fear. The needs of the study had to be balanced against the needs of the respondents. Care was taken to ensure that, the process did not pose any physical discomfort to any of the respondents taken into considerations some of them their ages. It was important to be closely attuned to respondents' non-verbal behaviors and paralinguistic cues of physical pain, especially those above 60 years and was prepared to end an interview at the first sign of fatigue.

FINDINGS AND DISCUSSIONS

From the literature reviewed analysis, the study sought to analyse the respondents' preventive behaviours of hypertension and diabetes as presented in table 1.

Physical Activity

"Because I do hard work in my farm, I walk long distance to my farm throughout the week - over four kilometers. It is only Sundays and when there is funeral in the community that I don't go to my farm or when am not well.....I do not even fall sick oftenI don't even remember the last time I fell sick" (a male respondent).

Lack of exercise and physical activities as well as sedentary type of works have great influence of determining one's chances of developing diabetes and hypertension [6]. However, in the rural communities where the people are engaged in vigorous activities on daily basis, all respondents explained that their daily normal works are more than doing exercise. All the respondents said that they engage in one form of physical activities such as

brisk walking, playing soccer and farming activities within the week. All the young guys interviewed concerning how often they do physical activities, explained that in addition to their hard works in the farm, they usually engage in football games in the evenings and during weekends. One of them explained as follows:

“As for here, the most common entertainment which is also in the form of exercise is playing football. Anytime we come from our farms in the evening, we gather on the school football field and play soccer.....we have two teams in the townbut not in any of the divisions of the national leagues”.

Table 1: Preventive Behaviors

Variable	Behavior	Absolute	Percentage (%)
Do you engage in any form of physical activities?	Yes	112	100.0
	No	00	0.00
What form of physical activities do you often do?	Brisk Walking	17	15.2
	Farming Activities	68	60.7
	Playing Soccer	27	24.1
Total		112	100.0
How often respondents eat heavy food after 6 pm	Never	8	7.1
	1 -2 Times a week	27	23.8
	3 or more times in a week	65	58.2
	Occasionally	12	10.9
Total		112	100.0
When do respondents go to bed after supper	Less than 1 hour	17	15.0
	1 to 2 hours	45	40.0
	After 2 hours	50	45.0
Total		112	100.0
Do you add table salt to your food?	Yes	61	54.5
	No	51	45.5
Total		112	100.0
Do you sometimes work under stress?	Yes	13	11.2
	No	99	88.8
Total		112	100.0
How often respondents work under stress	Once a week	02	15.5
	2 or more times in a week	03	20.3
	Occasionally	08	64.2
Total		13	100.0
Do you smoke?	Yes	14	12.4
	No	98	87.6
Total		112	100.0
How often respondents smoke	Everyday	06	42.9
	Occasionally	08	57.1
Total		14	100.0
Do you drink alcoholic beverages?	Yes	43	38.2
	No	69	61.8
Total		112	100.0
How often respondents drink alcoholic beverages	Everyday	07	16.2
	Once a week	14	32.3
	2 or more times a week	06	14.6
	Occasionally	16	36.9
Total		43	100.0
Do you drink non-alcoholic beverages?	Yes	107	95.9
	No	05	4.1
Total		112	100.0
How often respondents take soft drinks	Everyday	12	10.9
	Once a week	27	25.6
	2 or more times a week	35	32.9
	Occasionally	33	30.6
Total		107	100.0
Have you ever checked your diabetes status?	Yes	15	13.8
	No	97	86.2
Total		112	100.0
Have you ever checked your blood pressure?	Yes	59	52.6
	No	53	47.4
Total		112	100.0

Source: Field Survey, 2024

From table 1, majority of the respondents (60.7%) explained that they often walk an average of 4 kilometers to their farms to engage in farming activities such as weeding, making ridges and mounds, planting of crops, harvesting of crops, etc.

To them, these farming activities also serve as a form of exercise to prevent them from developing diabetes or hypertension. The 15.2% of the respondents who indicated that they do brisk walking in the mornings were mainly retired civil servants who are above 60

years and have retired from formal works and are now residing in the communities.

Eating Habits

From the table above, respondents were asked how often they eat heavy food such as fufu, banku, kenkey, ampesi, etc. after six pm and the time they go to bed. The majority of them (58.2%) indicated that, they most of the time (3 or more days in a week) eat their supper after six pm. The reason for asking this question was to find out from them whether they were aware of the risks involved in eating heavy foods and go to bed immediately. From the table, 23.8% of them indicated that they eat heavy foods after six pm once or twice in a week. This means that, about 82.0% of them eat heavy foods at least once in a week after six pm. During the interview, observations revealed that most of the people start preparing their supper between 5 to 6 pm. This means that they will eat their supper at least after six pm. In most cases the researcher remained in the communities till 7 pm due to scheduled interviews with some of the respondents who do not come from their farms early. Observations on their dietary habits was that, most of them eat late in the evening. The most common explanations were centered on the fact that they do come home late from their work and the majority of them were farmers. One woman explained as:

"Most of the time we come from farm late, that is why we eat late....but sometimes too we eat in the farm in the evening before coming home, in that case we don't eat again in the house. But Sundays and other days that we don't go to farm, we don't eat in the night". There were other respondents (7.1%) who mentioned that, they do eat their supper before six pm while others (10.9%) also said they occasionally eat their supper after six pm.

They were further asked how long they wait after eating their supper before they go to bed. From the table, 45.0% of them responded that they usually stay over two hours after eating their supper before they go to bed while 40.0% indicated that they stay between one to two hours before they go to bed. This means that, even though most of them eat late in the evening, the majority of them (85.0%) stay for over one hour after eating their supper before they go to bed. In most rural communities in Ghana, people stay outside deep into the night before they go to bed and this was not different from the study communities. In the process of the interviews, it was observed that even though some of them responded that they do not go to bed immediately after eating their supper, occasionally some of them go to bed immediately after eating their supper especially when they eat beyond eight pm.

Responses regarding salt consumption indicated that, the majority (54.5%) of them do add additional salt to

their foods after preparation while 45.5% do not. For those who used to add salt to their diet after preparation, the common reasons were that anytime they feel the salt is not up to their taste and when the soup does not taste 'sweet' they add more table salt to the soup. One respondent explained as:

"My father used to add salt to his food anytime he is eating, and I always take the left-over of my father's food....so sometimes too I also add some to my food even before I will find out whether the taste of the salt is ok or not."

The most frequent explanations for those who indicated that they do not add table salt to their food after preparation was that, they have heard it is not healthy to add it after the meal have been prepared and one of them explained as follows:

"I don't add additional salt to my food because too much intake of salt is also a cause of hypertension....my father used to have hypertension and he was asked by a doctor not to eat salt.....so he stopped eating salt before he died".

Stressful Conditions

Respondents were asked whether their daily activities sometimes put them under stress and how often they experience stress. From the table, few of them (11.2%) indicated that they do sometimes experience stress in their daily activities while the majority (88.8%) indicated that they have not been experiencing any pressure leading to stress in their daily activities. Those who indicated that they do not experience any stress, were mainly the farmers and other self-employed people.

Regarding those who sometimes experience pressure leading to stress (11.2%), the majority (64.2%) of them indicated that they only experience stress occasionally while the rest (35.8%) also work under pressure leading to stress at least once in a week. The most frequent explanation was centered on 'meeting deadline of work scheduled. One teacher explained as follows:

"Anytime the external supervisors are coming into our school, the headmaster put pressure on us to finish all the arrears of our lesson notes and any other things that need to be done before they come.....apart from that, I do not experience any stress in my work as a teacher".

Other Behavioural Factors

Khosravizadeh & Ahadinezhad (25) in their analysis of the Health Belief Model, stressed on preventive health-related behaviour patterns such as excessive smoking of cigarette, excessive intake of alcohol, etc. In Ghana, according to the national health policy, it is an offense for anybody to smoke cigarette in any public places such as in a public bus, market places, etc. It is also an offense for anybody who is under 18 years and pregnant women to smoke cigarette and drink alcoholic beverages [16]. The study therefore

sought to find out from the respondents whether they smoke and if they do how often they smoke. From the table, the majority of them (87.6%) indicated that they do not smoke while 12.4% responded that they smoke (only males). For those who smoke, 42.9% mentioned that, they smoke everyday while 57.1% said they only smoke occasionally. For those who smoke every day, the average number of sticks they consume per day was three sticks per person. The common explanations given by those who smoke was mainly for working.

In an attempt to determine whether respondents were aware of the effects of the excessive consumption of alcoholic beverages on their health, they were asked to indicate whether they drink alcoholic beverages or not. For those who mentioned that they drink alcoholic beverages, they were further asked how often they drink in a week. From the table, the majority of them (61.8%) indicated that they do not take any alcoholic beverages while the rest (38.2%) mentioned that they sometimes drink alcoholic beverages. This comprises of all categories of the age groups and both sex (males and females). On the issue of how often they drink alcoholic beverages, from the table, 16.2% of them indicated that they take alcoholic drinks every day, 36.9% of them responded that they drink it occasionally while the rest (46.9%) indicated they drink alcoholic beverages at least once in a week. However, from the researcher's observations within the communities, a lot of people especially the youth drink alcoholic beverages even those who were below eighteen years. Some people who were interviewed and they indicated that they do not drink alcoholic beverages were seen drinking alcoholic beverages during occasions like funerals. One of such respondents explained as follows: *"I don't drink alcohol oo, but today is my best friend's funeral that's why you see me drinking"*.

They were further asked to indicate whether they do drink non-alcoholic beverages, and if they do how often they drink. This question was asked to find out if respondents were aware of the risk involved in the excessive intaking of soft drinks regarding diabetes and hypertension development. From the table, as many as 95.9% of them responded that, they sometimes drink soft drinks such as coke, Fanta, sprite etc. Out of this number 10.9% responded that they drink every day, 30.6% indicated they only drink occasionally while 58.5% of them indicated that they take soft drinks at least once a week. Those who indicated that they take soft drinks everyday and at least once a week, the majority of them were females while almost all the males responded that they take soft drinks occasionally. Observations revealed that traders as well as artisans such as seamstresses drink more soft drinks during the day. This observation was made during the researcher's visit to the work places of those respondents who were traders and artisans.

One market woman explained as: *"Here, during the day, the wheather becomes very hot and the only thing we used to cool our body is drinking chilled coke and some meat pile or bread"*.

Frequency of Checking Diabetes and Hypertension Status

In Ghana, the culture of medical checkups is generally absent and this was not different from the study communities. Generally in Ghana, people only go to the hospital when they are sick irrespective of the social status (poor or rich, educated or uneducated [15]. The study therefore, sought to find out from respondents whether they do check their diabetes status and their blood pressure from any medical facility. The majority (86.2%) of them responded that they have never checked their diabetes status before from any medical facility. On the other hand, the majority of them (52.6%) responded that they have ever checked their blood pressure before. This was due to culture of compulsory checking of blood pressure of all adults at any health facility in Ghana irrespective of whatever sickness an adult present at any medical facility. However, unlike hypertension, diabetes is not automatically checked for patients at the hospitals whenever they go there with any other sicknesses. This has enabled most of the respondents to know their hypertension status but not their diabetes status from any medical facility. The rest who indicated that, they have ever checked their diabetes status (13.8%) were mainly women who explained that they checked their diabetes status when they were pregnant and they went to hospital for antenatal care. For those who responded that they have never checked their diabetes status (86.2%) and hypertension status (47.4%) explained that they do not often fall sick and even when they fall sick, they usually do self-medications with local herbs. One of them commented:

"I don't have the money to go to hospital for any check-up.....myself I don't fall sick, so I don't see the need to do that. Even at the hospital, when one goes there one have to join long queue, so if by God's grace I don't fall sick, why should I go and join the long queue there for only check-ups".

CONCLUSION AND RECOMMENDATIONS

CONCLUSION

From the analysis, the summary of the main findings of the study are that; in areas like physical activity/ exercising, eating habits, smoking, and stressful work, the respondents from the rural communities of this study are doing very well either directly or indirectly to prevent themselves from initiation of the development of diabetes and hypertension. However, other risk factors like excessive consumption of soft drinks; alcohol consumption; additon of table salt to their foods; checking of one's diabetes or hypertension status (blood pressure) regularly to monitor oneself from the development of diabetes

and hypertension; the study communities do not generally pay much attention to these risk factors as preventive mechanism of diabetes and hypertension. This study contributes to the academic discourse by identifying gaps in existing literature and advocating for the enforcement of the alcohol and smoking policies in the country by the enforcement agencies such as Food and Drug Authority, Ghana Health Service and Ministry of Health in the rural areas where .

RECOMMENDATIONS

From the data analysis and inline with the findings from the study, the following recommendations are made: Smoking of cigarette among respondents was relatively low in the selected communities; this therefore offers a window of opportunity for smoking prevention. Health promotion efforts by the Ghana Health Service under the Ministry of Health should therefore be intensified so as to prevent the rural populace from taken up smoking of cigarette. This is necessary because the rural people in Ghana are the backbone of Ghana's agricultural sector of which the economy of Ghana depends.

Similarly, public education on the excessive consumption of alcohol must be intensified by all health promoters' institutions such as Food and Drug Authority to prevent the youth from excessive consumption of all kinds of alcoholic beverages in the country. Again, the national policy on cigarette smoking and alcohol consumption must be enforced by the Food and Drug Authority to prevent the youth from engaging in smoking of cigarette and consumption of alcohol. This is based on the fact that, the study found that, a lot of the youth in the selected communities engage themselves in excessive alcohol consumption which is known as one of the risk factors for the development of diabetes and hypertension.

It is recommended that the general public should be educated by health promoters especially the Ghana Health Service about the importance of going for medical check-ups in general and in particularly checking their blood pressure and sugar levels regularly to enable individuals detect any early signs of developing diabetes or hypertension. This is because from the findings, it is revealed that 86.2% and 47.3% of the respondents from the study communities have never checked their diabetes and blood pressure before at any health facility respectively.

Finally, it is recommended that the rural communities in Ghana should be educated on the risks involve of developing diabetes and hypertension through excessive consumption of salt by the public department of the Ghana Health Service. This is based on the fact that majority of the respondents

(54.5%) do add table salt to their foods after the food has been served.

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