

LAY KNOWLEDGE OF NON-COMMUNICABLE DISEASE IN TAMALE METROPOLIS

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ABSTRACT

A Community based investigation was done at the Tamale Metropolis from January, 2015 to December, 2016. The main objectives were to determine the level of knowledge of the four (4) main risk factors of Non Communicable Disease (NCD) at Tamale Metropolitan Assembly. 300 participants were randomly selected from 10 purposefully selected communities. 85% of the participants know of stroke patients. 15% knew of mental illness. No knowledge of the other non-communicable diseases by the participants. There are more mortalities and morbidities caused by Non Communicable Diseases than detected and recorded in the Tamale Metropolitan Area. Stroke and mental diseases are residual complications of diabetes and hypertension. Yet the two are not known.

INTRODUCTION

The prevalence of major chronic non-communicable diseases and their risk factors has increased over time and contributes significantly to the Ghana's disease burden. Conditions like hypertension, stroke and diabetes affect young and old, urban and rural, and wealthy and poor communities. The high cost of care drives the poor further into poverty. Lay awareness and knowledge are limited. Health systems (biomedical, ethno medical and complementary) are weak, and there are no chronic disease policies. These factors contribute to increasing risk, morbidity and mortality. As a result, non-communicable diseases constitute a public health and a developmental problem that should be of urgent concern not only for the Ministry of Health, but also for the Government of Ghana.

Non communicable diseases (NCDs) are now the leading causes of death in most parts of the world. Although this is not the case in sub-Saharan Africa, where infectious diseases still predominate, the trend of NCDs is projected to shift in the coming decades. One estimate shows that by 2030, sub-Saharan Africa will experience the largest increase in the share of total deaths from NCDs. It is estimated that by then, nearly half (46 percent) of all deaths in the region will be from NCDs, reflecting a dramatic increase from 28 percent in 2008.

The World Health Organization (WHO) has identified four main NCDs — heart disease/hypertension, chronic respiratory diseases, diabetes, and most cancers—all of which are primarily caused by four key risk factors. These include tobacco use, immoderate alcohol use, physical inactivity or sedentary lifestyles, and unhealthy diet patterns that are typically initiated during adolescence or young adulthood, and set the stage for unhealthy behaviors and diseases later in life. For example, the earlier in life that tobacco and alcohol use are initiated, the greater the risk of addiction. In contrast, when positive health behaviors such as healthy eating and regular exercise are established at a young age, they are more likely to be carried through to adulthood. Also, long duration of overweight and obesity, which is often an end result of inactivity and poor diet are more detrimental to health. Thus, sensitizing the people on NCDs and its risk factors will help mitigate risks and establish positive health behaviors in life and substantially decrease the burden of NCDs. According to Dalals et al, the prevalence of NCDs and their risk factors is high in some SSA settings, with lack of vital statistics systems; epidemiological studies with variety of in-depth analysis of risk factors could provide a better understanding of NCD.

BACKGROUND

Non-communicable diseases have been established as a clear threat not only to human health, but also to development and economic growth.

Claiming 63% of all deaths, these diseases are currently the world's main killer. Eighty percent of these deaths now occur in low and middle income countries (World Economic Forum, 2010). Half of those who die of chronic non-communicable diseases are in the prime of their productive years and thus, the disability imposed and the lives lost are also endangering industry competitiveness across borders. Recognizing that building a solid economic argument is ever more crucial in times of financial crises, this study brings to the global debate fundamental evidence which had previously been missing: an account of the overall costs of NCDs including what specific impact NCDs might have on economic growth.

The evidence gathered is compelling. Over the next 20 years, NCDs will cost more than US\$ 30 trillion, representing 48% of global GDP in 2010, and pushing millions of people below the poverty line. Mental health conditions alone will account for the loss of an additional US\$ 16.1 trillion, over this time span, with dramatic impact on productivity and quality of life. By contrast, mounting evidence highlights how millions of deaths can be averted and economic losses reduced by billions of dollars if added focus is put on prevention. A recent world health organization report underlines that population based measures for reducing tobacco and harmful alcohol use, as well as unhealthy diet and physical inactivity, are estimated to cost US\$ 2 billion per year for all low and middle income countries, which in fact translates to less than US\$ 0.40 per person. The rise in the prevalence and significance of NCDs is the result of complex interaction between health, economic growth and development, and it is strongly associated with universal trends such as ageing of the global population, rapid unplanned urbanization and the globalization of unhealthy lifestyles. In addition to the tremendous demands that these diseases place on social welfare and health systems, they also cause decreased productivity in the workplace, prolonged disability and diminished resources within families.

The results are unequivocal: a unified front is needed to turn the tide on NCDs. Governments but also civil society and the private sector must commit to the highest level of engagement in combating these diseases and their rising economic burden. Global business leaders are acutely aware of the problems posed by NCDs. A survey of business executives from around the world conducted by the world economic

forum since 2009, identified NCDs as one of the leading threats to global economic growth. Therefore, it is also important for the private sector to have a strategic vision on how to fulfil its role as a key agent for change and how to facilitate the adoption of healthier lifestyles not only by consumers, but also by employees. The need to create a global vision and a common understanding of the action required by all sectors and stakeholders in society has reached top priority on the global agenda this year, with the United Nations General Assembly convening a high level meeting on the prevention and control of NCDs. If the challenges imposed on countries, communities and individuals by NCDs are to be met effectively this decade, they need to be addressed by a strong multi-stakeholder and cross-sectorial response, meaningful changes and adequate resources (Klaus Schwab; Julio Frenk: founder and executive chairman World Economic Forum). As policy makers search for ways to reduce poverty and income inequality, and to achieve sustainable income growth they are being encouraged, to focus on an emerging challenges to health, well-being and development: non-communicable diseases (NCDs). Most non-communicable diseases are the result of four particular behaviors (tobacco use, physical inactivity, unhealthy diet, and the harmful use of alcohol) that lead to four key metabolic/physiological changes (raised blood pressure, overweight/obesity, raised blood glucose and raised cholesterol).

The WHO 2008-2013 Action Plan to Prevent and Control NCDs presents three main objectives: 1) mapping the emerging epidemics of NCDs and their determinants; 2) reducing the levels of exposure to risks and increasing the capacity of individuals to deal with risks; and 3) strengthening the health care system to address the demands of NCDs. Preliminary studies in the Tamale Teaching Hospital indicates high levels of mortality and morbidity caused by non-communicable diseases and also communicable diseases. These go in line with the Omran's epidemiological transition theorem number three (3) and five (5) indicating that the epidemiological transition is eminent in Northern Ghana, characterized by unplanned urbanization, hence the double disease burden. This study therefore seeks to investigate into the Prevalence and knowledge (lay information) of risk factors of non-communicable disease amongst the people of Tamale Metropolitan Assembly of Ghana.

RESEARCH OBJECTIVES

1. To explore the knowledge (lay information) of non-communicable disease by the individuals in the Tamale Metropolis
2. To assess the prevalence of risk factors of non-communicable disease in the Tamale Metropolis
3. To understand the lifestyle of the people in relation to risk of non-communicable diseases.
4. To assess available preventive methods to non-communicable diseases in the Tamale Metropolis
5. To assess the level of mortality caused by non-communicable disease in the Tamale Metropolis

RESEARCH QUESTIONS

1. What knowledge (lay information) of non-communicable disease does individuals have in the Tamale Metropolis
2. What is the rate of prevalence of risk factors of non-communicable disease in the Tamale Metropolis?
3. What is the lifestyle of the people in relation to risk of non-communicable diseases?
4. What are the available preventive methods to non-communicable diseases in the Tamale Metropolis?
5. What is the level of mortality caused by non-communicable diseases in the Tamale Metropolis?

LITERATURE REVIEW

63% of all deaths worldwide currently stem from NCDs; chiefly cardiovascular disease, cancer, chronic respiratory diseases and diabetes. These deaths are distributed widely among the world's population, from high income to low income countries and from young to old (about one quarter of all NCD deaths occur below the age of 60, amounting to approximately 9 million deaths per year). NCDs have a large impact, undercutting productivity and boosting healthcare outlays. Moreover, the number of people affected by NCDs is expected to rise substantially in the coming decades, reflecting the ageing increasing global population. (WHO, 2009). Available statistics indicates that currently more than 70 per cent of people with diabetes lived in low and middle income countries, with prevalence increasing dramatically in Africa with an estimated 10.4 million people with the condition in 2007. In Ghana, about four million people

may be affected with diabetes mellitus, which is a group of metabolic diseases in which a person has high blood sugar, a condition which could be attributed to situations where either the body does not produce enough insulin or because cells do not respond to the insulin that is produced; but it could be controlled and managed with little injections of insulin. (Only 500,000 registered).

Diabetes is said to be one of the risking killer diseases globally, claiming one life every eight seconds and a limb lost at every 30 second, according to reports from WHO and the international Diabetes Federation (IDF). In a speech read for him, Mr. Alban Kingsford Bagbin, Minister of Health at the opening session of a three-day Training Workshop of Diabetes Nurse Education in Accra on Wednesday, said the Atlas of IDF showed that the number of people with diabetes in Accra would increase by 80 per cent to 1807 million by 2025. The sector minister noted that currently, Ghana Health Service had a doctor to population ratio of 1 to 11,929 stressing the fact that lack of financial means was not the only challenge, but a scarcity of trained health care personnel capable to tackle the prevention, diagnosis and management of diabetes at all levels of the health care systems. The workshop was organized by the Ithemba Foundation Ghana (IFG), an NGO in collaboration with the ministry of health for 37 diabetes nurse educators drawn from selected health facilities to improve the quality of diabetes care in the country. It was aimed at equipping participants with expanded knowledge on the disease to enable them relate quality information and serve as lifelines to people living with the condition at the various diabetes clinics nationwide as well as being ambassadors in their communities. Mr. Bagbin stressed on the need to design and adopt national diabetes plans that relied on a multi-level system of care, adding the training of physicians, nurses and health care staff was a plus in combating the incidence of diabetes and other non-communicable diseases in Ghana. Adding urgency to the NCD debate is the likelihood that the number of people affected by NCDs will raise substantially in the coming decades. One reason is the interaction between two major demographic trends. World population is increasing, and although the rate of increase has slowed, UN projections indicate that there will be approximately 2 billion more people by 2050. In addition, the share of those aged 60 and older has begun to increase and is expected to grow very rapidly in the coming years. Since NCDs disproportionately affect this age group,

the incidence of these diseases can be expected to accelerate in the future. Increasing prevalence of key risk factors will also contribute to the urgency, particularly as globalization and urbanization take greater hold in the developing world.

Non-communicable diseases (NCDs) in Ghana for instance, accounted for an estimated 39 per cent of all mortality in 2008. In 2008, the most prevalent NCDs were cardiovascular diseases (18 percent), Cancers, non-communicable variants of respiratory diseases and diabetes contributed 6 per cent, 5 percent and 1 per cent to total mortality respectively (2008). The pathway from modifiable risk factors to NCDs often operates through what are known as risk factors— which include overweight/obesity, elevated blood glucose high blood and high cholesterol. Secondary prevention measures can tackle most of these risk factors as changes in diet or physical activity or the use of medicines to control blood pressure and oral agents or insulin to control blood sugar and pharmacological/surgical means to control obesity. Although intervening on intermediate risk factors may be more effective (and more cost-effective), but treating intermediate risk factors may, in turn, be less effective) than primary prevention measures or creating favorable social environment reduce vulnerability to developing disease (Brownell Frieden, 2009; National Commission on Prevention priorities, 2007; Satcher, 2006; Woolf. 2009).

Major NCD Risk Factors

NCDs stem from a combination of modifiable and non-modifiable risk factors. Non-modifiable risk factors refer to characteristics that cannot be changed by an individual (or the environment) and include, age, sex and genetic make-up. Although, they cannot be the primary targets of interventions, they remain important factors since they affect and partly determine the effectiveness of many prevention and treatment approaches. A country's age structure may convey important information on the most prevalent diseases, as may the population racial/ethnic distribution. Modifiable risk factors refer to characteristics that societies or individuals can change to improve health outcomes. WHO typically refers to four major ones for NCDs: poor diet, physical inactivity, tobacco use, and harmful alcohol use (WHO 2011).

Poor Diet and Physical Inactivity

The composition of human diets has changed considerably over time, with globalization and urbanization making processed high in refined starch, sugar, salt, and unhealthy fats cheaply and readily available and enticing to consumers – often more so than natural foods (Hawkes 2006). As a result, over weight and obesity and associated health problems are on the rise in the developing world (Cecchini, et al 2010). Exacerbating matters has been a shift towards sedentary lifestyles, which has accompanied economic growth, the shift from agricultural economies to service based economies and urbanization in the developing world. This spreading of fast food culture, sedentary lifestyles, and increase in body weight has lead for some to coin the emerging threat as “globesity” epidemic (Bifulco and Caruso, 2007, Dietel, 2002, Schwartz, 2005)

Tobacco

High rates of tobacco use are projected to lead to a doubling of the number of tobacco-related deaths between 2010 and 2030 in low- and middle-income countries. Unless stronger action is taken now, the 3.4 million tobacco-related deaths today will become 6.8 million in 2030 (NCD Alliance, 2011). In 2004, a study by the Food and Agriculture Organization (FAO) predicted that developing countries would consume 71% of the world's tobacco in 2010 (FAO, 2004). China is a global tobacco hotspot, with more than 320 million smokers and approximately 35% of the world's tobacco production (FAO, 2004; Global Adult Tobacco Survey – China Section, 2010). Tobacco accounts for 30% of cancers globally, and the annual economic burden of tobacco-related illnesses exceeds total annual health expenditures in low and middle-income countries (American Cancer Society & World Lung Foundation, 2009).

Alcohol

Alcohol use has been causally linked to many cancers and in excessive quantity with many types of cardiovascular disease (Boffetta & Hashibe, 2006; Ronksley, Brien, Turner, Mukamal, & Ghali, 2011). Alcohol accounted for 3.8% of deaths and 4.6% of DALYs in 2004 (GAPA, 2011). Evidence also shows a causal, close-response relationship between alcohol use and several cancer sites, including the oral

cavity, pharynx, larynx, esophagus, liver and female breast (Rehm, et al. 2010).

THEORITICAL FRAMEWORK

The epidemiological transition model, developed by Omran, focuses on the complex changes in the patterns of health and disease; the interaction between these patterns and their demographic, economic, sociological determinants and consequence. In its original form, the model proposed three stages referred as Age of pestilence and famine; was characterized by a demographic regime of high and fluctuating birth and death rate that reflected Old World epidemics of infection and famine. The third stage of Omran's transition constituted the "Age of degenerative and Man-made diseases". These stage of transition was largely driven by social factors; such as lifestyle, diet, occupation and income. Omran, argued that, as infectious and parasitic diseases receded, their place would be taken by a series of chronic, degenerative disease associated with ageing populations such as cardiovascular diseases, stroke, and cancers: These diseases will become significant causes of mortality. More recently, two more stages have been added (the fourth and the fifth stage). The fifth stage referred to as "Age of emergent and re-emergent infections". This is characterized by the resurgence of both old and new infectious and parasitic diseases. These stage, proposed in Omran's original and revised models occur sequentially. e.g.; Ebola in DR Congo (1976 and 2015), Cholera, Meningitis in Ghana, TB in Africa/worldwide.

METHODOLOGY

Tamale is the capital of northern Ghana and has a population of three hundred and seventy-one thousand (371,000) people (Ghana Statistical Service, 2010, Census). The population growth has been within

a very short period with no plan for urbanization since 1960. Focus group discussion and individual interview with questionnaires; Research assistance helped to translate from English to Dagbani, Hausa or Twi. Focal group discussions: a group be made up of 8 to 12 people, with same topics as in questionnaire will be discussed. Male group shall be isolated from female group. Individual interview (questionnaire), 10 questions shall be on each paper. Interview questions shall be directed towards giving idea of knowledge (lay information) of non-communicable disease by the individual of the community. Second objective was to understand the lifestyle of the people in relation to risk of non-communicable diseases. Third objective was to assess for sensitivity for risk factors of non-communicable diseases. Fourth objective was to assess on preventive methods to non-communicable diseases. Fifth objective was to use verbal post mortem to assess for mortality caused by non-communicable disease Ethical clearance was obtained by the ethical committee.

Inform concern was obtained from individuals. Study site. Tamale and its metropolis were chosen for this study. These are major catchment areas for the hospitals TTH, Central and West hospitals. Where most of the secondary data was obtained by the retrospective study of medical records on mortality and morbidity of NCDs. Tamale is the capital town of northern region and the fastest growing city in the south Saharan Africa (UNIFEC2000). The population of tamale and its metropolis is 2.5 million (Ghana statistical Board 2007), 2010 census. The city is characterized by urban poverty, high level of pollution, illiteracy, low family planning and unplanned urbanization. The risk factors of NCDs and CDs are highly eminent and fuelled by high immigration rate by refugees from neighboring poor countries.

Table 1. Results of risk factors of non-communicable diseases

NUMBER OF	AGE GROUP ABOVE 55	AGE GROUP FROM 18-55	ANALYSIS
MALES	165	134	60%
FEMALES	95	106	40%
TOTAL	260	240	100%

Table 2. Lay knowledge of non-communicable diseases

DISEASES	NUMBER OF RESPONDENTS	PERCENTAGE
STROKE	460	80
MENTAL DISEASES	20	15
DIABETICS MELLITUES	5	1
HYPERTENSION	2	1
CANCER	0	1
PEPTIC ULCER DISEASE(PUD)	2	1
COPD	2	1
CLD	4	1
CVD	4	1
CKD	0	1
ASTHMA	1	1
TOTAL	500	100%

Table 3. Results of risk factors of non-communicable diseases

<u>RISK FACTOR</u>	<u>NUMBER OF RESPONDENTS</u>	<u>PERCENTAGE (%)</u>
TZ	440	88%
RICE	40	8%
SALAD	5	1%
VEGETABLES	10	2%
FRUITS	5	1%
TOTAL	500	100%

SMOKING:	40	8%
EXERCISE:	0	0%
ALCOHOL:	5	1%
IDLE(JOBLESS):	55	11%
TOTAL	500	100%

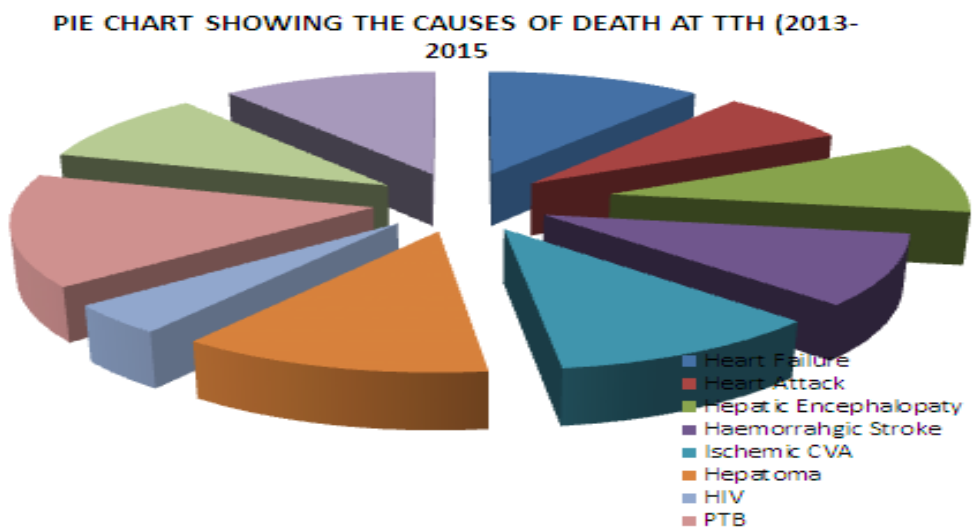


Figure 1. Jaundice



Figure 2. Gross Ascites

DISCUSSION of RESULTS

As found in table number one, 260 of the population participated in the test were of age above 55 years. This is the degenerative age. Hypertension, diabetics, stroke and other degenerative diseases are expected to be of higher risk to this group of people (WHO 2010). 165 males participated and 95 females participated. This could be because, more male's part took in the research. 240 of the responded in the research. This people were the active and working population (18-55) years old. WHO/UN are worried of the fact that the developing world, most of this working population are destroyed by the non-communicable diseases. This is not good news because it the economy of the nation will be driven into severe poverty.

The common NCDs in the TMA as documented in the hospitals are; hypertension, diabetics, stroke, mental illness, peptic ulcer disease, COPD, CKD and CLD. As documented in table two, 80 per cent(460) of the participants new about stroke, 15 per cent new of mental illness, less than 5 per cent new of hypertension, diabetics , COPD, CLD, peptic ulcer and CKD. The fact is that, stroke as explain in medical literature is a result complications of hypertension, diabetics, CKD or CLD. The respondent have no knowledge of this conditions and yet have alluded to the fact that people with the sign and symptoms of strokes are more. Common in their localities. They even have a local name for stroke because that is the common NCDs they know most. (Stroke is called gbalinibogu in the local dialect of Tamale.

Mental illness is the second most commonly known NCD in the TMA. This, medically, is supposed to be terminal complication of conditions like;

depression, illness, alcoholism, stress, and other negative life styles. The respondents see and know about these complications, but do no check for and do not know about the conditions leading to those conditions. The WHO have documented, that four of every five die of NCD in south Saharan Africa. 63% of all deaths worldwide are caused by NCD (UN economic summit, 2013).As documented in table 3, 0%. Of the respondents is doing checkup for DM. Hypertension or even exercising. This is a tip of an ice burg. Many people have the condition, but do not know until complication set in. The risk factors for NCD are sedentary life, cultural food, smoking and old age. Table #3.The most commonly known NCD at the TMA are stroke and mental illness, which are rather Complications of DM Hypertension, and depression.

DISCUSSION

Diabetes: The problem is still far from over; because according to our research findings, the people of Tamale Metropolitan Area are yet uninformed of the non-communicable disease because they are silent killers. The signs and symptoms are not eminent, they can only be detected by preempted medical or laboratory checkups. Meanwhile this is not the culture of the inhabitants of Tamale Metropolitan area. Stroke: Magnitude of research problem is found in the fact that almost everybody answered yes to question; do you know somebody who suffering from stroke (Gbalnibogu) meaning hemi paralysis of motor systems. This is supposed to be as a result complication diabetes mellitus and uncontrolled hypertension. If the prevalence of stroke is so high in the system then the message is that a higher population of the Tamale Metropolitan area are living or dying with undetected diabetes mellitus cancer and all other non-communicable diseases.



As seen in the picture above the woman is suffering from depression this can lead to mental diseases. It leads to neglect of motherhood duties. Mental diseases (Yibilsa): is the next most common disease in the Tamale Metropolitan area. The WHO documented in world economic summit report that USD 61.1 trillion will be needed to resolve mental health conditions. The unplanned urbanization in the city explains the high prevalence of mental diseases as documented in our results. This goes in line with WHO (2011) findings that the creation of urban slums are mathematically related to the prevalence of mental diseases such as schizophrenia, depression and manic diseases.

Question; do you know anybody with mental disease? Was answered yes by more than sixty percent of the respondents. If mental diseases such as schizophrenia are complications of depression, drug abuse and other non-communicable diseases and life style diseases then the message is that there are more undetected conditions of neuro psychotropic in the population of the Tamale Metropolitan area. More research and community based investigations need to be carry out in this population to reduce poverty and under development. Public health and institutional education on this killer diseases is not an option but a necessity, inevitable.

CONCLUSION

There is a higher prevalence of non-communicable diseases at the TMA. No physical or laboratory checkup is done. Patients are not diagnosed, are not treated until complications set in. Diabetes and hypertension do not have eminent physical signs and symptoms, thus are silent killers which are not known by the population of the TMA. Stroke and mental illness have eminent signs and symptoms that are identifiable by the general population. Paralysis of the limbs and loss of mental control.

RECOMMENDATION

For prophylactic against risks factors lay knowledge is very necessary. Education is therefore not an option health education at all levels of our education institution must be aware of NCDs, not only aware but knowledgeable about these diseases of burden in the country. Public health education has to be continues on all our media including; radio and television and even at the religious centers. Compulsory medical checkup at all government set ups (institution and work places). All diagnosed shall be assisted in treatment. Drama groups in our local diet could be trained and used to educate the illiterate communities on NCDs so that they can prevent the diseases by avoiding the risk factors

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