2016

Investigation of healthcare marketing communication channels used for hypertension in low income setting in Nairobi County

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Investigation of Healthcare Marketing Communication Channels used for Hypertension in Low Income Setting in Nairobi County

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A Dissertation submitted in partial fulfillment of the requirements for the Degree of Master of Business Administration- Healthcare Management at Strathmore University

June, 2016

Declaration

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

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Approval

The thesis of …… was reviewed and approved (…….) by the following:

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School Name

Dean, School of Graduate Studies

Abstract

Hypertension is a chronic non communicable disease and its prevalence is on an alarming rise in Kenya, Africa and globally. It is noted to be the number one risk factor for global mortality, a position reiterated by numerous scholars. It is made worse by the fact that in most cases it is an illness without symptoms, so that it can persist for many years with resultant complications that are expensive to manage on an individual and national level. Management of this global time bomb will require an awareness/ information education communication aspect to address the silent nature of this condition. The aim of the study was to determine the most effective healthcare marketing communication channel that would lead to early detection of hypertension through awareness and behaviour change that would lead the largely unaware public to seek hypertension diagnosis and treatment at health facilities. Healthcare marketing techniques have been very effective in changing patient behaviour in the realm of communicable diseases such as HIV. This descriptive survey was carried out in low income setting of Nairobi County taking advantage of sites that were involved in the Healthy Heart Africa project. The study found that health promotion channels used for behaviour change communication for communicable diseases can also be utilized for non communicable diseases. Interpersonal communication was found to be the most significant health communication channel for creating public awareness on hypertension, mobilizing for screening and therefore diagnosis and treatment. Four other channels stood out as being potentially significant for increasing hypertension awareness and these were newspapers, internet, use of barazas and community health workers. The study population was also noted to have high levels of awareness of the risk factors for and the seriousness of hypertension as a medical condition.

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List of Abbreviations

AIDS:	Acquired Immune Deficiency Syndrome
AMPATH:	Academic Model for the Prevention and Treatment of HIV
AMREF**:**	African Medical Research Foundation
BCC**:**	Behavior change communication
CHW**:**	Community health worker
IPC:	Interpersonal communication
HIV:	Human Immunodeficiency Virus
HHA:	Healthy Heart Africa
JHPIEGO:	Johns Hopkins Program for International Education in Gynecology and Obstetrics
LMIC:	Low and middle income countries
NCD:	Non communicable disease
PSI:	Population Services International
PSK:	Population Services Kenya
SMS:	Short message service
WHO:	World Health Organization

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CHAPTER ONE
Introduction

1.0 Background to the Study

According to a 2011 World Health Organization (WHO) report, Low and middle income countries (LMIC) bear an appreciable proportion of the global burden of non-communicable diseases (NCDs). NCDs kill more than 36 million people annually with 80% of these occurring in LMIC, though this has been largely overlooked due to the overwhelming burden of infectious diseases, notably HIV/AIDS, TB and Malaria. Cardiovascular (hypertension as a major cause) and respiratory disorders, cancer and diabetes account for about 80% of all death due to NCDs (WHO 2011).

In 2000, 972 million adults had hypertension; 639 million of them in LMIC. By 2025 the number of adults with hypertension is predicted to increase by about 60% to 1.56 billion (Kearney PM et al. 2005). The Global Burden of Disease 2010 report highlights hypertension as the number one risk factor for global mortality and is the most powerful risk factor for cardiovascular morbidity and mortality, (Ezzati et al. 2005).

In Kenya the major non communicable diseases attributing to high mortality and disability in adults include hypertension, cancer among others and account for increased deaths from 17 to 27% (Kariuki et al. 2013).In a study in carried out in Nakuru in 2010 a hypertension prevalence of 50.1% was demonstrated (Mathenge. et al. 2010) . The adjusted (WHO) prevalence from a study in Korogocho, Viwandani slums was 18.4% with progressive rise in age up to 42.8% for the 50-59 age group (van de Vivjer et al. 2013) which was fairly comparable with a study in Kibera slums, overall prevalence 13% with highest prevalence in the 55-64 age group at 43% (Njau et al.)

Hypertension an NCD is a serious threat to health in both developed and developing countries and deserves to be treated not only as national but also as a global health priority. Strategies targeting the public lack of awareness about this silent epidemic need to be the focus as

discussed in a study that sought to correctly estimate prevalence, hypertension in adult Chinese

Country	Not Aware	Treated
Kenya	83%	9%
Tanzania	82%	9%
Nigeria	92%	2%
Namibia	62%	17%

patients (Wu et al., 2008).

Awareness and control rates in a study by (Hendriks et al. 2012), reveal the magnitude of lack Public awareness and hence numbers of patients treated for hypertension in this cross sectional study of rural and peri-urban communities Kenya

This position is confirmed by literature searches using pub medreview on hypertension awareness and treatment in 23 African countries whichrevealed low levels of awareness and treatment and even lower levels of control. The major conclusion was that there is need for further research to uncover specific reasons behind low levels of awareness so as to inform policy formulation and intervention strategies to improve outcomes of hypertension in Africa (Kayima et al., 2013).

Awareness and behaviour change communication channels that have been used in the past focused mainly on communicable diseases. Population Services International (PSI) has used social marketing since the 1990's in the areas of family planning, HIV/ AIDS and malaria. Its approach has been the typical for- profit marketing strategies but with the bottom line as the target and in the setting of LMICs. (Longfield et al., 2013).

The pharmaceutical company Astra Zeneca in partnership with AMREF and Population Services Kenya(PS Kenya) launched the Healthy Heart Africa (HHA) campaign in October 2014. HHA's target was to reach 10 million hypertensive patients across Africaover a10 yearperiod.,The aim is to support the World Health Organization's global hypertension target (25% reduction by 2025).

The project partners in Kenya are Population Services Kenya (PS Kenya), AMREF Health Africa, AMPATH- Academic Model for the Prevention and Treatment of HIV, the Christian Health Association of Kenya (CHAK), JHPIEGO formerly Johns Hopkins Program for International Education in Gynecology and Obstetrics,Mission for Essential Drugs and Supplies (MEDS) and Abt Associates. The main objectives of the HHA campaign will be to increase awareness of the symptoms and risks of hypertension by offering education and screening, providing access to reduced-cost treatment for hypertension and to train health providers and develop treatment guidelines for hypertension.

The Government of Kenya in the Kenya National Strategy For the Prevention and Control of Non-Communicable Diseases 2015-2020, focuses on ten strategic objectives that are key to the reduction of the burden of NCDs(Ministry of Health, Republic of Kenya, 2015). Objective four is to promote and conduct research and surveillance for prevention and control of NCDs, objective five is to promote local and international partnerships for the prevention and control of NCDs and objective 10 is to promote and strengthen advocacy, communication and social mobilization for NCD prevention and control. In this regard the Government of Kenya was closely involved in the design of the HHA programme which also meets its strategic objectives.(Ministry of Health, Republic of Kenya, 2015)

This study took advantage of the opportunity to work with this hypertension-focused campaign and intends to add value by by evaluating health communication channels that will increase the public education and awareness of hypertension resulting in patients seeking screening and treatment for hypertension.

1.1 Problem Definition

Hypertension a cardiovascular condition is one of the four major NCDs that The Kenya National Strategy for the Prevention and Control of Non-Communicable Diseases, 2015-2020 lays emphasis on. The NCDs pose the burden of deaths and disability but also a greater social and economic burden to the economy in Kenya .Yet NCDs are largely preventable and up to 80% of premature deaths from heart disease and stroke could be averted with evidence based behavioral and pharmaceutical interventions. This underscores the importance of promoting and

strengthening advocacy, communication and social mobilization for NCD prevention and control.

As the prevalence of hypertension rises, there will be greater demand for hypertension-related healthcare services and in managing its complications require costly and more advanced medical technologies and pharmaceuticals resulting in significant rise of healthcare expenditures both public and private (World Bank 2011). There are also the higher overall costs in terms of premature deaths, disability and lost productivity (Meiro-Lorenzo et al., 2011). In Kenya NCDs account for more than 50% of total hospital admissions and over 55% of hospital deaths

The Kenya National Strategy for The Prevention and Control of NCDs only uses the general term; social marketing for health utilized in the prevention and control of NCDs and does not specify the communication channels.

Therefore this study sought to evaluate the most appropriate healthcare communication channels that target the public's lack of awareness about this silent epidemic that would lead to behaviour change. In this case communication that would effectively lead to motivation of individuals and communities to go for screening and so early treatment of hypertension of the affected in low income private and public health facilities in Nairobi County, low income area in particular because the economic burden of managing complications of hypertension is more likely to cause financial catastrophe in the this setting.

1.2 General Objective of the Study

To determine the most effective healthcare marketing communication channel that would lead to early detection of hypertension through awareness creation and behavior change of persons at risk of hypertension particularly in low income setting of Nairobi, County.

1.3 Specific Objectives

The study sought:

1. To describe the health promotion channels currently used for behaviour change communication (BCC) in reference to communicable diseases

2. To identify potentially effective health promotion channels that would increase public awareness of associated risk factors and lifestyle modification strategies to prevent hypertension.

3. To identify the health promotional channels that would best mobilize patients to seek screening and therefore diagnosis and treatment of hypertension.

4. To determine the extent to which hypertension was perceived as a likely threat to the health of the target population.

1.4 Research questions

1. What health promotion channels are currently being used for behaviour change communication for communicable diseases?

2. What are the potentially effective health promotion channels that will increase public awareness of associated risk factors and lifestyle modification strategies to prevent hypertension?

3. What are the health promotion channels that best mobilize patients to seek screening and therefore diagnosis and treatment of hypertension?

4. To what extent is hypertension perceived as a likely threat to the health of the target population?

1.5 Scope of the study

The study was carried out in Nairobi County for ease of access and because the initial campaign for the Healthy Heart Africa initiative was also taking place in Nairobi. The Nairobi County's listed public health facilities were 78 in March 2014 according to a Government of Kenya website and well over 500 private facilities are listed for Nairobi on the Medical Practitioners and Dentists Board website (2015). The large geographical area and population of health facilities presents limitations in carrying out the survey. In order to cope with these limitations purposive sampling was employed to obtain five health facilities, one AMREF affiliated clinics

in Nairobi West District, Langata constituency and fourout of the 11 Tunza clinics that would be taking part in the HHA project.

All these clinics were located in low income areas and it was assumed they would give good representation of private setting with Tunza clinics being a social enterprise network and the AMREF affiliated clinic serving the public sector.

1.6 Significance of the study

On a national level the results would inform the Department of Preventive and Promotive Health of the Ministry of Health of Kenya of the specific communication channels that ought to be utilized in awareness and behavior change communication for nationwide hypertension management campaign. This would greatly enrich the country's strategy for prevention and control of NCDs.

The results of this study could be useful to health facilities and pharmaceutical companies in the formulation of marketing strategies for hypertension management (screening, diagnosis and treatment services) and antihypertensive drugs respectively, as the numbers of hypertensive patients will only increase in the coming years.

This study may also serve to inform AMREF Health Africa and Population Services Kenya of the health promotion channels that work best to increase education and awareness of risk factors for hypertension and lifestyle modification strategies to prevent hypertension as well as to mobilize patients to seek screening and therefore treatment for hypertension, within the Healthy Hearts Africa campaign.

CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

According to various scholars, African countries are undergoing varying degrees of human development which is accompanied by various nutritional, demographic and epidemiological transitions. The traditional public health challenge in Africa has been the scourge of infectious diseases, otherwise called communicable diseases such as HIV/AIDS, Tuberculosis, Malaria, Pneumonia and Diarrhoea. Generally, Africa is still besieged with this (infectious diseases) public health challenge, even though the severity of the burden varies across the continent. However, in the last three decades, there has been rapid increase in the prevalence of non-communicable diseases (NCDs) such as hypertension, coronary heart disease, stroke, diabetes, asthma, chronic hepatic diseases and chronic renal diseases (Mensah 2008; WHO 2011). This has resulted in the double burden of diseases which will potentially overwhelm the poorly financed health services in Africa (De-Graft *et al.* 2010).

Hypertension is the number one risk factor for global mortality according to the Global Burden of Disease Study 2010 and with rising global adult prevalence that is predicted to hit the 1.56 billion mark by 2025 (Kearney*et al.* 2005). In Africa about twenty million adults may be affected and the African Union has called hypertension one of the continent's greatest health challenges after AIDS (Lionel *et al.* 2005).

Increasing trends in the burden of NCDs in LMIC has been linked to increasing levels, both at individual and population level, of risk factors such as smoking/tobacco consumption, reduced physical activity levels, increasing life expectancy, nutritional transition from traditional to western diet and increased alcohol consumption (WHO 2011). These risk factors have been increasing at both individual and population levels. These risk factors are closely connected to westernization or adoption of western culture and values as defined by materialism,

consumerism, individualism (Eckersley 2011) urbanization & economization, globalization and trade liberalization (including the food market) (Popkin 2004).

2.1 Burden of disease in Kenya

In Kenya, the major NCDs attributed to high mortality and disability among adults are hypertension, cancer and cardiovascular diseases, chronic respiratory diseases and Diabetes accounting to increased deaths from 17 to 27 percent (Kariuki *et al.,* 2013).

National figures as presented by World Health Organization- Non-communicable Diseases (NCD) Country Profiles, 2014 define Kenya as a low income country with NCDs accounting for 27% of total deaths and of these cardiovascular diseases of which hypertension is a large component accounts for 8%. Of note also is the fact that there is no national systems response to NCDs.

A cross sectional study carried out in two major slums Korogocho and Viwandani in Nairobi, Kenya revealed that hypertension WHO adjusted prevalence was 18.4% and rising up to 42.8% in the 50-59 age bracket. It was found to be associated with low levels of awareness, treatment and control and to correlate with obesity, waist circumference, diabetes and alcohol (van de Vijver, *et al.* 2013). Another study of 4396 subjects in Nakuru revealed a hypertension prevalence of 50.1% with 57% being urban and noted to rise with age (Mathenge *et al*.2010). The prevalence rates of hypertension in a semi nomadic community of 1823 subjects in Garissa was 12.6% and rising to 38.5% for the over 65years age group (Hassan *et al*. 2012).

In their study on prevalence and awareness of hypertension among women and men from rural and urban areas, (Damasceno *et al*. 2009) noted a prevalence of 41% versus 32.2% awareness of hypertension in urban women, 40% prevalence vs. 15.2% awareness for urban men; 26.8% prevalence vs. 8.9% awareness in rural women and finally 33.5% prevalence vs. 7.9% awareness for rural men.

Socioeconomic position has been linked closely to prevalence of hypertension and other NCDs. In high income countries these conditions have been positively correlated with higher socioeconomic groups. In our local setting a community survey carried out in Nakuru, and using

structural equation modeling to estimate direct and indirect effects of socioeconomic position on hypertension and other NCDs found that accumulation of resources is positively associated with increased prevalence of hypertension and that the associations with education level, smoking and alcohol use will vary with the different NCDs, (Ploubidis *et al.*, 2013).

In Kenya, NCDs account for more than 50% of total hospital admissions and over 55% of hospital deaths(Ministry of Health, Republic of Kenya, 2015). In addition to this burden of deaths and disability, these illnesses also pose a social and economic burden to the economy. However, NCDs are largely preventable and resultant complications can be averted with evidence based behavioral and pharmaceutical interventions. In this regard, The Ministry of Health and partners have developed the Kenya National Strategy for the Prevention and Control of Non-Communicable Diseases, 2015-2020. Objective number ten specifically addresses the need to promote and strengthen advocacy, communication and social mobilization for NCD prevention and control.

2.2 Global Burden of Disease

According to a World Bank report (2011) NCDs will place substantial and increasing demands on health systems. As the prevalence of NCDs rises, there will be greater demand for NCD-related healthcare services, including diagnosis and treatment. In addition to increasing demand on health systems' scarce human resources, rising NCD levels will exacerbate health-financing challenges. NCDs are generally more expensive to treat than communicable diseases. The chronic nature of NCDs requires patients to have multiple interactions with health systems, frequently in more expensive inpatient settings and over long time periods. Treating NCDs, particularly in advanced stages requires the application of more costly and advanced medical technologies and pharmaceuticals. People suffering from NCDs often require disability management and long-term care. Moreover, NCDs frequently involve co- morbidities; one person may suffer from two or more NCDs.

Healthcare expenditures both public and private are likely to increase significantly. The direct medical costs may be relatively low in lower-income countries and for lower income populations, due to, amongst other things, lower rates of detection and less access to advanced

and expensive diagnostic and treatment services and pharmaceuticals. However, these same factors contribute to higher overall NCD costs in terms of premature deaths, disability, and lost productivity. Further, economic growth and the globalization of a number of NCD-related risk factors may make demand for more expensive and advanced treatment options more universal (Meiro-Lorenzo, *et al.* 2011).

Health systems in low-income countries will face a particular challenge, as they will need to find a means of coping with the double burden of NCDs and communicable diseases. Health financing models will likewise need to evolve to ensure long-term sustainability. Health coverage and benefits packages will need to adjust to the changing nature of demand, while the financing models will need to reflect the different cost pattern of NCDs. Different approaches, such as changes to provider payment mechanisms and pay or models to incentivize desired behaviors, implementation of suitable social health protection models, and effective use of tools such as health technology assessments, innovative risk factor reporting, and disease surveillance systems, will all be important to consider and apply in a targeted manner. Such reforms can be done in a less costly and more effective manner if strategic steps are taken in advance. Even if that is the case, however, health system adaptation and its costs represent another substantial effect of NCDs. Indeed, a recent study of macro-fiscal implications of healthcare reforms found that the issue of healthcare reform will be a key fiscal policy challenge in coming years (IMF 2010).

2.3 Health Promotion Channels for Behaviour Change

The serious burden of hypertension and other NCDs as detailed above therefore justifies the exploration of health marketing strategies targeting prevention and control of this silent epidemic.

Confronted with evidence of the impending chronic emergency of hypertension and other NCDs, the rising attention being given to NCDs is in large part motivated by the goal of taking steps now to avoid much larger costs down the road, while also enabling millions of people to live longer, healthier, more fulfilled and productive lives. As daunting as the challenge may appear,

there is considerable scope for action, including for taking meaningful steps now to help prevent NCDs and mitigate their impacts.

Effective prevention and mitigation measures cannot be implemented by health ministries alone; instead they require action from a variety of national government and county health departments and from global, regional, national, and local stakeholders across the public and private sectors and civil society. Highlighting the breadth of the NCD challenge is thus important to make a broader range of stakeholders aware of the challenge and the need for action beyond the health sector (Kelly &Fuster, 2010).

Healthcare marketing targeting behaviour change as alluded to in literature is one solution that countries can use to address this rising epidemic. Health marketing uses marketing principles (product, price, place, promotion) in prevention, promotion of healthy practices and health protection, (Berkowitz, 2010). Health marketing is one of the ways through which public health systems try to increase utilization of medical services/products and protection from preventable illnesses, the NCDs in this case.

Demand generation is used to refer to promotional/communication activities targeting a particular audience, that are geared towards health service/product uptake. Hence demand generation is a subset of marketing under the promotion principle.

Demand generation is achieved through social and behavior change communication and social marketing (marketing principles that are integrated with other approaches to benefit community for the greater social good) techniques resulting in creation of new users or increased demand among existing users for the products or services and finally by taking market share from existing behaviors.

The social marketing channels and approaches include:

- Mass media – intended to reach mass audiences and range from broadcast media (television and radio), print media (newspapers, books, pamphlets, comics) and digital media (internet and mobile communication, emails, blogs, websites, podcasts, internet

based radio and television). However access to digital media is greater for urban and literate audiences.

- Mid media –intended to reach a smaller population or area and include road shows, market storms, information panels, exhibitions, mobile vans, street theatre, community radio, media units of relevant ministries. Outdoor media and billboards are sometimes included because of their limited geographical reach. (IHB Newsletter, 2013).
- Interpersonal communication(IPC) – which refers to any one-on-one interaction that takes place between a trained agent such as a community health worker (CHW) and a member or several members of a specific target audience with the objective of changing a particular risky behaviour by understanding and addressing the underlying causes of it. IPC is strengthened or is more effective when used with visual aids such as flip charts and supporting information, education and communication materials e.g. flyers, posters, t- shirts, caps. It can also be attached to mid media. (IPC Survival Guide PSK 2013)

Population Services Kenya is the locally registered entity of Population Services International a global health organization whose hallmark is a commitment to the principle that health services and products are most effective when accompanied by robust communications and distribution efforts. PS Kenya has extensively used this theory in its Malaria IPC Campaign to promote net use in a programme called the 'Net-Hanging Campaign'(IPC Survival Guide, PSK 2013). The IPC agents visited households in malaria endemic regions and discussed risks, transmission and prevention and then demonstrated how to properly hang the long-lasting treated mosquito nets.

There may be opportunities to integrate cost-efficient hypertension prevention, detection, and treatment practices into the entire existing continuum of care. A study carried out in Kibera, Nairobi, demonstrated a feasible model for managing hypertension in a primary care low income setting through integration into existing services and also showed that information, education and empowerment were useful for improving follow up and outcomes to help manage the growing population of NCD patients (Sobry *et al.*, 2014).

2.4 Health Promotion Channels used for NCDS in other Markets.

Social networking is a new paradigm that explains individual health behavioral within the context of a group or community. These networks are thought to affect health in five ways, social support, social involvement, and person to person contagion, access to information and financial resources and finally social influence. Micro clinic International (MCI) model leverages on these principles thus targets marketing channels based on these determinants of health choices. This is established by case studies of MCI clinics they have established in Kenya, Kentucky and Jordan, (Ammu, *et al.*, 2013).

A focus on health promotion strategies targeting prevention of hypertension is one approach that has been taken in USA among African American communities. Social marketing by faith communities is one model that has proven successful in addressing the problem of public ignorance of health challenges caused by hypertension among other NCDs (Braithwaite *et al*., 2009).

Interventions on diet and physical activity: what works presents a summary of the systematic review of evidence evaluating the effectiveness of diet and physical activity to prevent chronic NCDs. Mass media campaigns with community based supportive activities such as programs in communities were found to be effective interventions.Agita Sao Paulo, a mass media campaign in Brazil with a main objective of increasing population levels of physical activity resulted in 10.2% increase in number of active individuals with more than 50% of the local population being aware of the campaign. However more evidence is required on the effectiveness of mass media campaigns against chronic NCDs since only few evaluations have been done. The characteristics of mass media campaigns that were successful in changing awareness and behaviour included the use of a simple message with frequent exposure accompanied by community participation approach and policy support. (WHO, 2009).

In his study Parikh (2013) outlines about thirty new innovations in chronic disease management from LMICs which include social marketing, health awareness/ education, health outreach and mobile health among others.These activities can be used to promote better access and achieve higher utilization of services to pick up the silent NCDs.

2.5 Theoretical Framework.

2.5.1Health Belief Model

Table from "Theory at a Glance: A Guide for Health Promotion Practice" (1997)

Concept	Definition	Application
Perceived Susceptibility	One's opinion of chances of getting a condition	Define population(s) at risk, risk levels; personalize risk based on a person's features or behavior; heighten perceived susceptibility if too low.
Perceived Severity	One's opinion of how serious a condition and its consequences are	Specify consequences of the risk and the condition
Perceived Benefits	One's belief in the efficacy of the advised action to reduce risk or seriousness of impact	Define action to take; how, where, when; clarify the positive effects to be expected.
Perceived Barriers	One's opinion of the tangible and psychological costs of the advised action	Identify and reduce barriers through reassurance, incentives, assistance.
Cues to Action	Strategies to activate "readiness"	Provide how-to information, promote awareness, reminders.
Self-Efficacy	Confidence in one's ability to take action	Provide training, guidance in performing action.

The Health Belief Model (HBM) is a psychological model that attempts to explain and predict health behaviour. This is done by focusing on the attitudes and beliefs of the individuals. The HBM is spelled out in terms of four constructs which represent the perceived threat and net benefits: perceived susceptibility, perceived severity, perceived benefits and perceived barriers. These concepts are proposed as accounting for people's readiness to act. ((Glanz, 1997).

It is based on three assumptions that for a person to take a health related action then:

1. He/she has to believe that the negative health condition (i.e., hypertension) can be avoided

2. He/she has to have a positive expectation that by taking a recommended action, he/she will avoid the negative condition believe that the negative health condition can be avoided (i.e., exercising at least 30minutes a day can prevent onset of hypertension)

3. He/she has the capacity to successfully take the recommended action(i.e., he/she can consistently exercise)

Patient's perceptions and attitudes to risk of hypertension are an important consideration. A study on Hypertension Knowledge, Awareness, and Attitudes in a Hypertensive Population (Oliveria et al., 2005), revealed that adequate knowledge and awareness of hypertension did not confer comprehensive understanding of the condition. Patients in this study were not cognizant of the importance of elevated systolic blood pressure levels or even their present blood pressure control status, providing an opportunity for patient education programs and interventions focusing on risk of uncontrolled hypertension.

Patients' misconception of risk hampers the implementation of cardiovascular disease prevention guidelines that require identification of high risk patients for more intensive treatment. In a study carried out among slum dwellers in Nairobi, perception of risk was inappropriate in 4 out of 5 high risk patients revealing a mismatch between cardiovascular risk and patient risk perceptions (Van der Weijden et al., 2007). Underscoring the importance of addressing perception is a Nurse administered telephone intervention for blood pressure control: a patient-tailored multifactorial intervention (Bosworth, et al., 2005). Perceived risk of hypertension was one of the patient factors targeted and six months post enrollment, those who had nurse intervention had higher levels of confidence in complying with hypertension treatment than the usual care group.

2.5.2 Communication Theory Models

2.5.2.1. Media Richness Theory

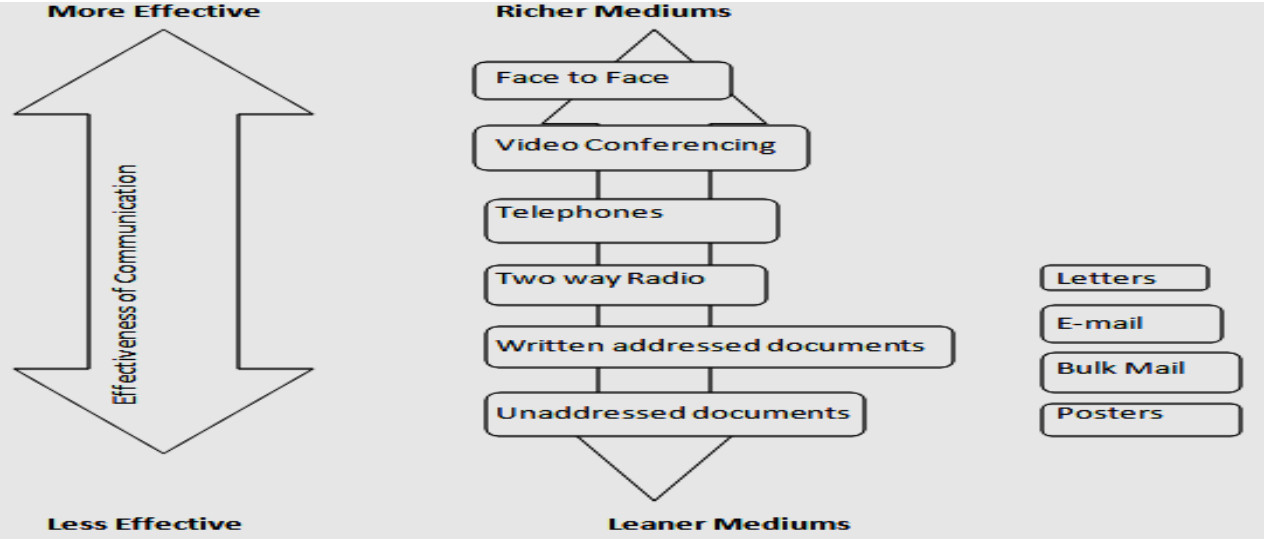


Figure 1 Media Richness

Daft and Lengel, 1984 introduced this concept and it relates the characteristics of different communication channels and their ability to convey complex or ambiguous information. This theory is useful in identification of the communication channels that match a health communication program's (often resource limited) needs to convey information. Richer media such as face to face communication costs more but is useful to communicate ambiguous messages as it allows for immediate feedback, language variety and tailoring. Leaner media such as print or sms is then used to convey messages where there is a general consensus. Combination of multiple channels is the best practice to allow transmission of mutually reinforcing messages to reach different audiences.

2.5.2.2. Uses and Gratifications Theory

This theory focuses on the why and how people use different media and aims at identifying the channels that people rely on for different types of information and to satisfy certain perceived needs. The perceived needs include staying informed, being entertained, identifying with media

characters, enhancing social interaction and escaping daily realities. This then directs the choice of most suitable channel to communicate a health message (Blumler and Katz, 1974).

2.5.2.3. Theory Informed Media Selection (TIMS) framework

This framework combines the Media Richness and Uses and Gratifications theories to identify the ideal media channel to support demand generation activities. It answers the question "Which media are most appropriate?" right at the intersection of the most effective media (media richness) and the existing uses of media (uses and gratifications). Where there is no intersection or budgetary and/or constraints exist then whatever media is currently available should be creatively used but knowing that its impact may be potentially reduced.

2.6. Conceptual Framework

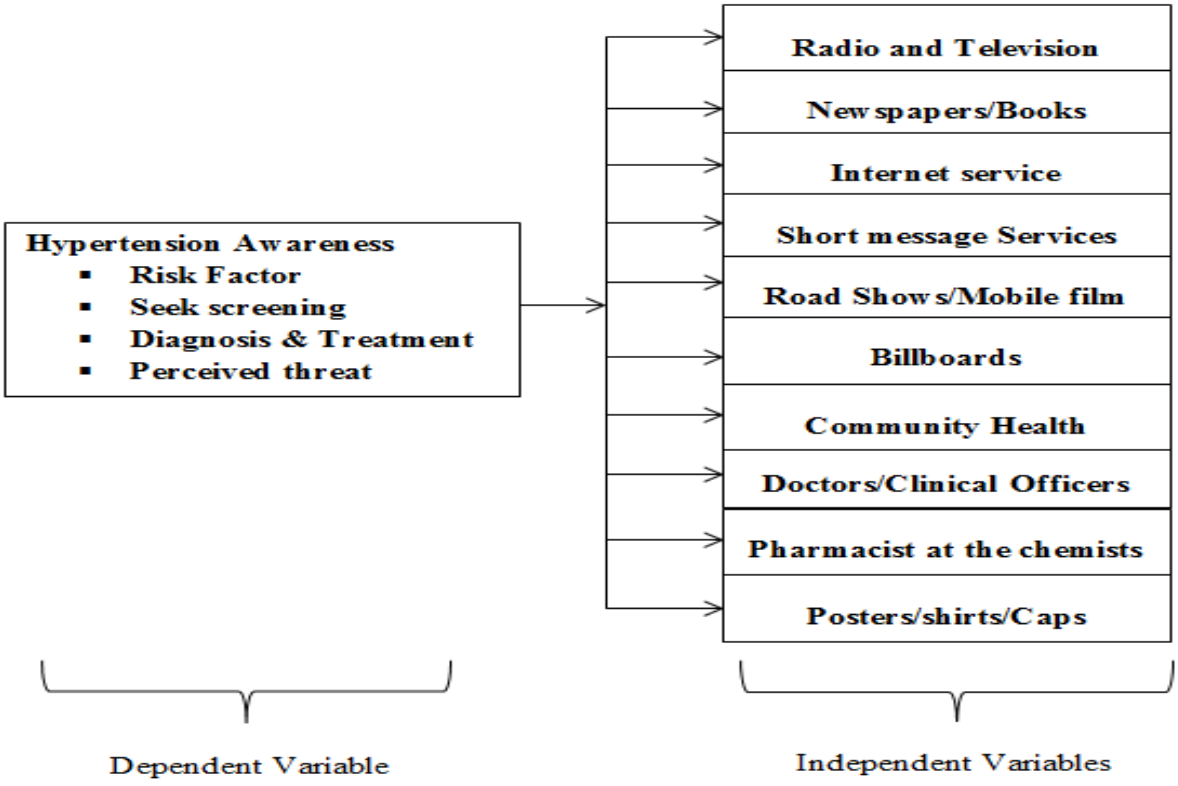


Figure 2: Conceptual framework

This framework has the various communication channels as the independent variables. The use of these channels would then be associated with levels of awareness of hypertension. The hypertension awareness being measured as knowledge of risk factors for hypertension, number seeking screening, number actually diagnosed and on treatment for hypertension and finally understanding of perceived threat of hypertension to the health of the respondent.

CHAPTER THREE
RESEARCH METHODOLOGY

3.0 Introduction

This chapter describes the methods that were used in the collection of data pertinent in answering the research questions. It is divided into research design, population and sampling design, model specifications, data collection methods and data analysis.

3.2 Research design

Research design refers to the overall structure or plan of the research. Descriptive surveys are carried out in order to describe populations, to study associations between variables and to establish trends, Information is collected from a sample of the population of interest and descriptive measures are calculated. The unit of analysis is usually the individual but it can also be an organization if organizations were the sampling units, or both of these in multi-level studies. Since such surveys tend to be carried out in their natural setting, then random probability sampling is easier to carry out and allows statistical inferences to be made in relation to the broader population and so increasing the external validity of the study (Bowling, A., 2014).

In this study a descriptive research design was adopted.

3.2 Population and Sampling Design

3.2.1 POPULATION

The target population in this study consisted of patients visiting 15 health facilities in Nairobi County that were taking part in the Healthy Heart Africa campaign. The health facilities were located in low income areas and they were likely to have the highest burden of disease due to their greater representation in the Kenyan population. They included private sector (Tunza clinics) and public sector (AMREF affiliated clinic).The respondents were adult patients between the ages of 18-69 and only included ambulant and non-pregnant patients. This was because hypertension is rare in children and hypertensive disease in pregnancy has very different causes.

3.2.2 Sampling Design

3.3.2.1 SAMPLING FRAME

The sampling frame was the list of 15 health facilities in Nairobi that were taking part in the Healthy Heart Africa campaign (see appendix 1).

3.3.2.2 Sampling Technique

Due to limitation of resources and time, a sample of five health facilities were obtained, one AMREF affiliated clinic in Nairobi West District, Langata constituency which represented public sector facilities and four Tunza clinics representing private sector. The five selected facilities were Kibera AMREF clinic, Joy Nursing Home, Githurai Medical Clinic, Corban and Bridging Medical Centre. The Tunza clinics selection was also guided by the Population Services Kenya team to avoid clinics where exit surveys had already been done for the ongoing pilot for the Healthy Heart Africa campaign.

Purposive sampling of patients attending these facilities was then carried out. Each patient attending the clinic who fitted the criteria and who gave consent was included in the study. Incidentally none of the patients declined to be part of the study. This was due to the fact that they were informed at the registration point as they came in about this study and the subject was reinforced by the attending clinician so that when they exited the consultation rooms they were ready and expecting to be interviewed.

3.3.2.3 Sample Size

With a population of 11400 patients being attended to in the 5 health facilities, assuming a 95 degree of confidence, a margin of error of 8% and 50 per cent response rate a sample size of149respondents from the 5 health facilities were interviewed.

Sample size calculator

$$n = \frac{(Z_{1-\alpha/2})^2 (1-P)}{r^2 ps}$$

Where

- Z is the z -score, e.g. 1.645 for a 90% confidence interval, 1.96 for a 95% confidence interval, 2.58 for a 99% confidence interval
- α is the desired margin of error at 8%
- p is our prior judgment of the correct value of p (0.3)
- n-is the sample size (to be found)
- r is the response rate (50%)

3.4 Data Collection Methods

Primary data was obtained from adult patients attending the named health facilities using the survey method. The data collection instrument was a questionnaire (see appendix 3) containing closed and open ended questions developed and organized on the basis of the specific research objectives to ensure relevance to the research problem. The questionnaire was administered through face to face interview of the patientsat the respective health facilities by research assistants who were experienced in collecting health data.

3.5 Research Procedures

The questionnaire was pilot tested by administering it to a limited number of 10 respondents and the necessary revisions were made.

Purposive sampling of health facilities and hence of at- risk of hypertension individuals in Nairobi County, was done to include those facilities already taking part in the Healthy Heart Africa campaign and due to resource limitations.

The data collection started at the nearest health facility to the researchers' offices which was AMREF Kibera. This ensured close supervision and that any initial administration challenges were quickly resolved and then proceed outwards simultaneously to the remaining facilities.

Consent was sought from all respondents, sample in appendix 2. The questionnaires were then administered by face to face interviewing of clients at the respective health facilities. This ensured a 100% response rate.

The recorded high response rate can be attributed to the fact that none of the respondents declined to take part in the study partly because they were well prepared by the attending clinician for the exit interview. The data collection procedures employed where the researcher administered the questionnaires using a face-to-face approach was another factor. The researcher administered the questionnaires with the help of research assistants who were experienced in collecting health data and also helped to cover the vast distance from one facility to the other.This was valid and reliable representation of the targeted population hence adequate for the study analysis. According to Mugenda and Mugenda (2003) 50% response rate is adequate, 60% good, while 70% and above is rated very good. This collaborates with Bailey's (2000) assertion that a response rate of 50% is adequate, while a response rate greater than 70% is very good.

3.6 Data Analysis

Data was collected, organized and analyzed using STATA. Descriptive statistics were done and regression analysis done to determine the degree to which some variables were associated with other variables of interest. The regression coefficients were used to measure the actual effects of specific independent variables on dependent variables. T-statistic was helpful in determining the significance of independent variables in influencing dependent variables.

3.7 Research Quality

To enhance validity and reliability, systematic transcription and analysis of the questionnaires was done. As questionnaires were returned to the office, routine checks for missing data were done so that it could be obtained and entered where possible. Range checks and checks for inconsistency were also done. The coding and data entry were verified by a different person. Analyses of the data by each interviewer provided information on interviewer bias.

3.8 Ethical Issues in Research

Since the study involved work with human subjects, the study proposal was submitted to the Strathmore University Ethics Review Committee to ensure that all ethical considerations had been met. The approval from the same was received and can be found in Appendix 4. Standard operating procedure for verbal informed consent applied for the questionnaire. The interviewers recorded the outcome of the consent on the participants' behalf.

CHAPTER FOUR
Analysis and Findings

4.1 Introduction

This chapter presents analysis and findings of the study. The study findings are presented on the use of healthcare marketing communication channels for hypertension in Nairobi County. The presentation, analyses interpretation and discussion of the findings follow the four main objectives of the study.

The data was gathered from the questionnaires which were designed in line with the objectives of the study. The analysis of quantitative data was done using STATA. The research instruments were designed in line with the objectives of the study aimed at investigating the use of healthcare marketing communication channels for hypertension in low income setting in Nairobi County.

The chapter is organized under sub-sections guided by the research questions, which. were to: determine the health promotion channels currently used by social marketing organizations that use behavioural change communication (BCC) to increase informed demand for health products and services; determine the most appropriate health promotion channels that will increase public awareness of associated risk factors and lifestyle modification strategies to prevent hypertension; identify the health promotional channels that best mobilize patients to seek screening and therefore diagnosis and treatment of hypertension and determine the extent to which hypertension is perceived as a likely threat to the health of the target population.

4.2 Response Rate

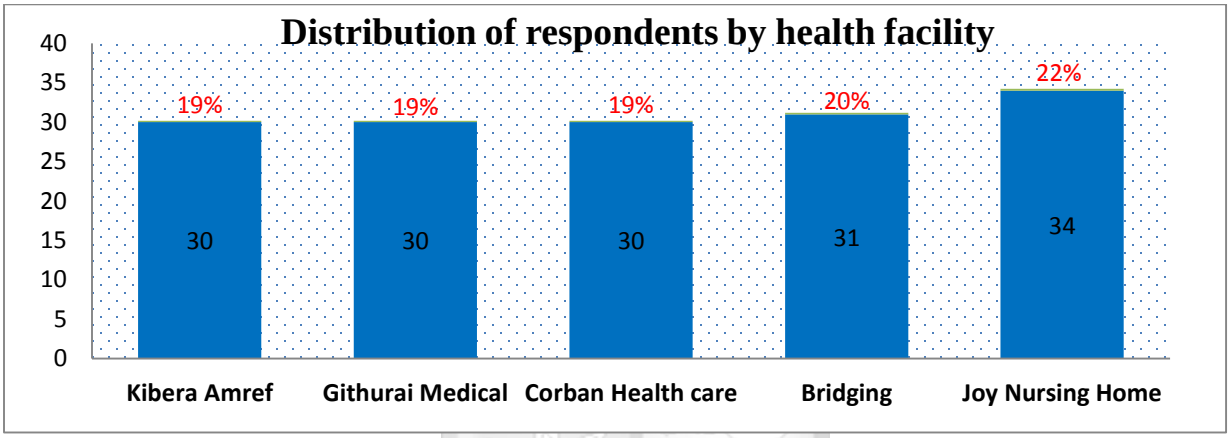
Response rate is the number of people who completed the survey divided bt the number of people who make up the total sample group. This includes those who declined to participate and the unavailable. The study targeted the patients in five health facilities in low income setting in Nairobi County. From this population, a sample of 149 respondents from the population were selected for collecting data with regard to the use of healthcare marketing communication channels for hypertension in low income setting in Nairobi County. The questionnaire return rate results are shown in Table 1.

Table 1: Questionnaire Return Rate

Category	Frequency	Percentage
Responded	**155**	**104**
Sample size	**149**	**100**

According to the results depicted in Table 1, 155 out of the 149 sample respondents from the selected health facilities in the Countyfilled in and returned the questionnaire. The response rate achieved for the questionnaire was 100%.

Figure 3: Distribution of Respondents by Health Facility



4.3 Demographic Data

This section concerns itself with outlining and presenting the findings obtained from the questionnaires distributed to the respondents. The analysis relied on the information from the respondents so as to classify the different results according to their knowledge and responses. They are presented in this section under general section of respondents' demographic profile which includes gender distribution, age (years), level of education and occupation.

The gender of the respondents was sought since its findings would assist the study categorize respondents based on gender. The results are displayed in Table 2.

Table 2: Gender of the Respondents

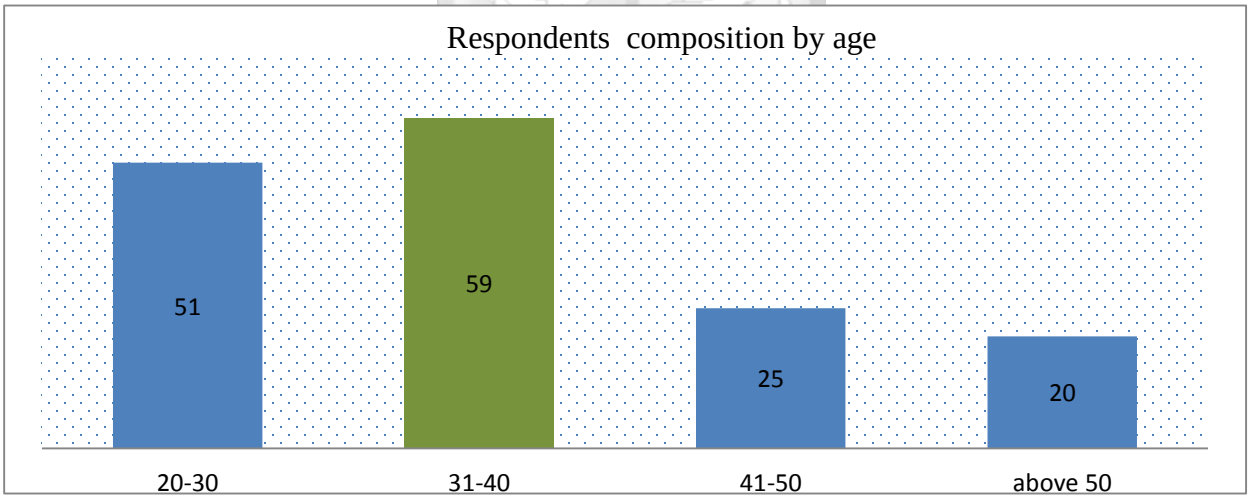
Gender	Frequency	Percent
Male	53	34
Female	102	66

Total	**155**	**100.0**

Majority of the responses were obtained from the female respondents. According to the results shown in Table 2, 66% of the respondents comprised of female while 34% of them were male. The findings imply that the views expressed in these findings are opinions of both genders as regards use of healthcare marketing communication channels for hypertension in low income setting in Nairobi County.

The study also sought to investigate the age of the respondents. This aimed at understanding how the respondents were distributed across the various ages and consequently their opinions on the topic of study. Figure 4 demonstrates that majority of the respondents were aged between 31 years and 40 years.

Figure 4: Respondents composition by age



The level of education of the respondents was a key element in their understanding and interpretation of the issues sought by the study. It was therefore important to understand what the level of education (literacy) for the respondents was. Table 3 below highlights the outcome.

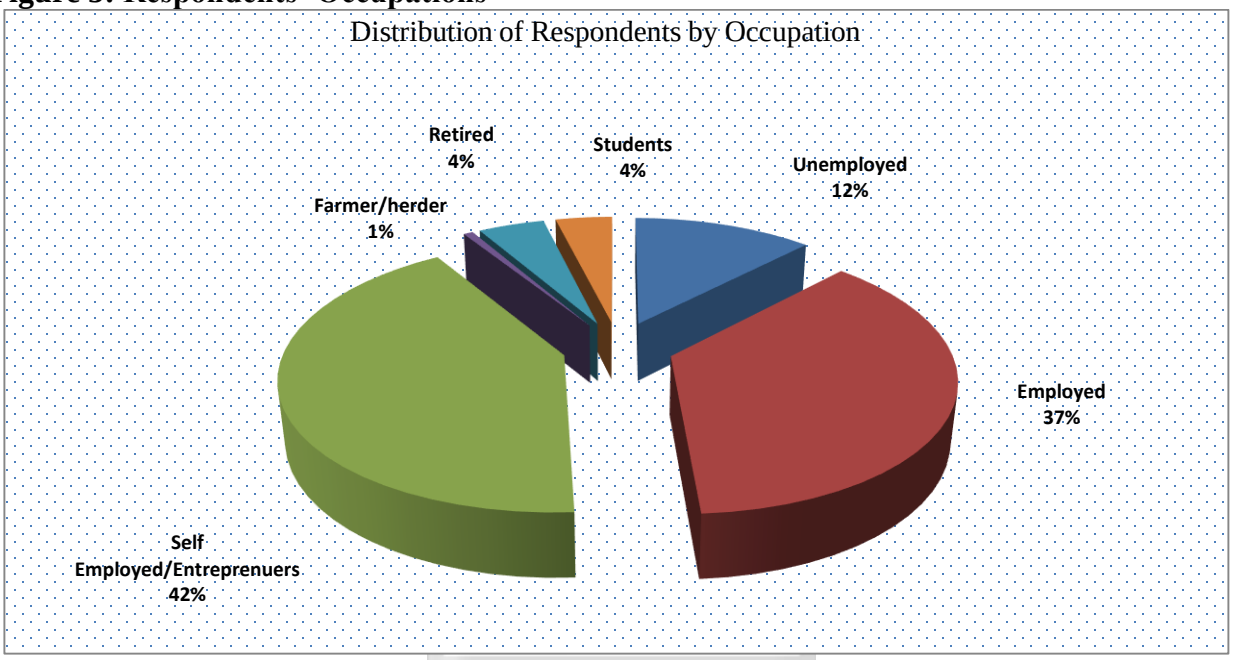
Table 3: Highest Educational Qualification

Level of Education	Frequency	Percent
None	4	3%
Primary	38	25%
Secondary	65	42%
Certificate	2	1%
Diploma	28	18%
Bachelors	11	7%
Master	2	1%
others	5	3%
Total	**155**	**100%**

Of the total number of respondents, 25% had acquired Standard 8 level of education and 42% of them were secondary school certificate holders. A proportion of 27% of the respondents had a tertiary level of education while 3% of the respondents had no formal education while another 3% had other forms of training. The results suggest that the respondents have not pursued higher levels of education however they are relatively literate and would give a fair feedback to the questions based on the fact that their education background allows them to understand importance of hypertension awareness as a health related issue.

The respondents involved in this study were people from various occupations. The study therefore sought to establish the distribution of the respondents in terms of employment statuses. Figure 5 shows the results of the study.

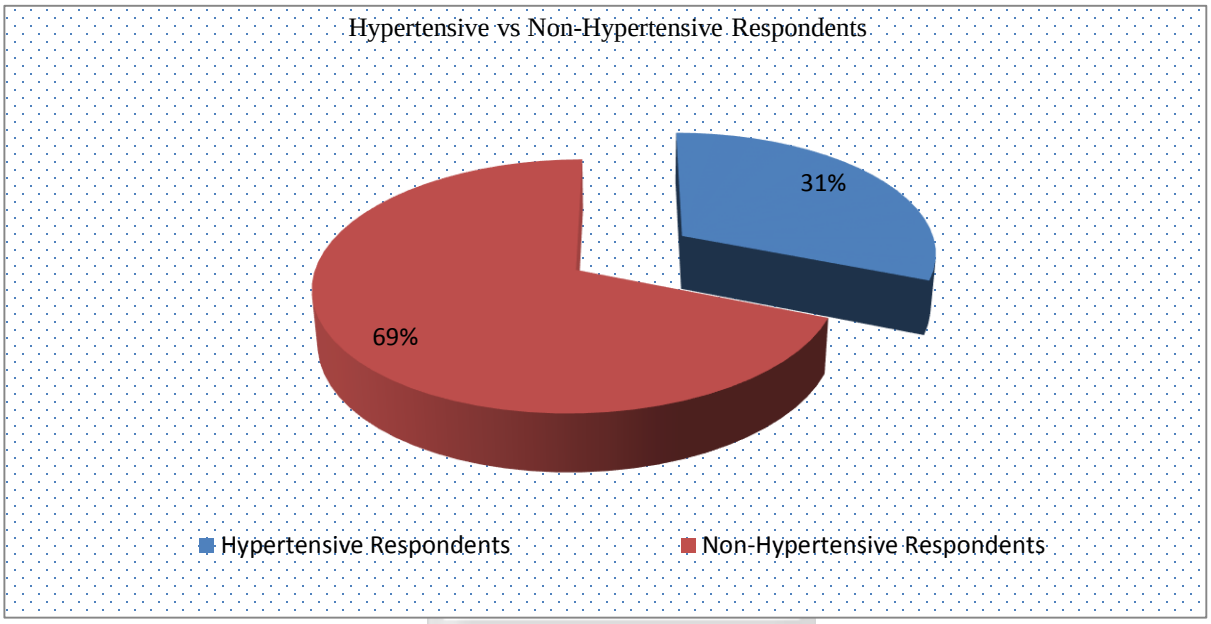
Figure 5: Respondents' Occupations



According to the results in Figure 5, 42% of the respondents were self-employed or entrepreneurs, 37% of them were formally employed and 1% indicated that they worked as farmers. On the other hand, 12% of the respondents were not in any occupation, 4% were retired while 4% of the people interviewed were students. These findings imply that majority of the respondents have some forms of income from their occupations.

The respondents involved in the study were also required to indicate who or what lead them to seek treatment. The study therefore sought to establish the number of patients who were found to have a high blood pressure. Those with blood pressure measure of above 140/90 were deemed to be hypertensive.

Figure 6: Hypertensive vs. Non-Hypertensive Respondents

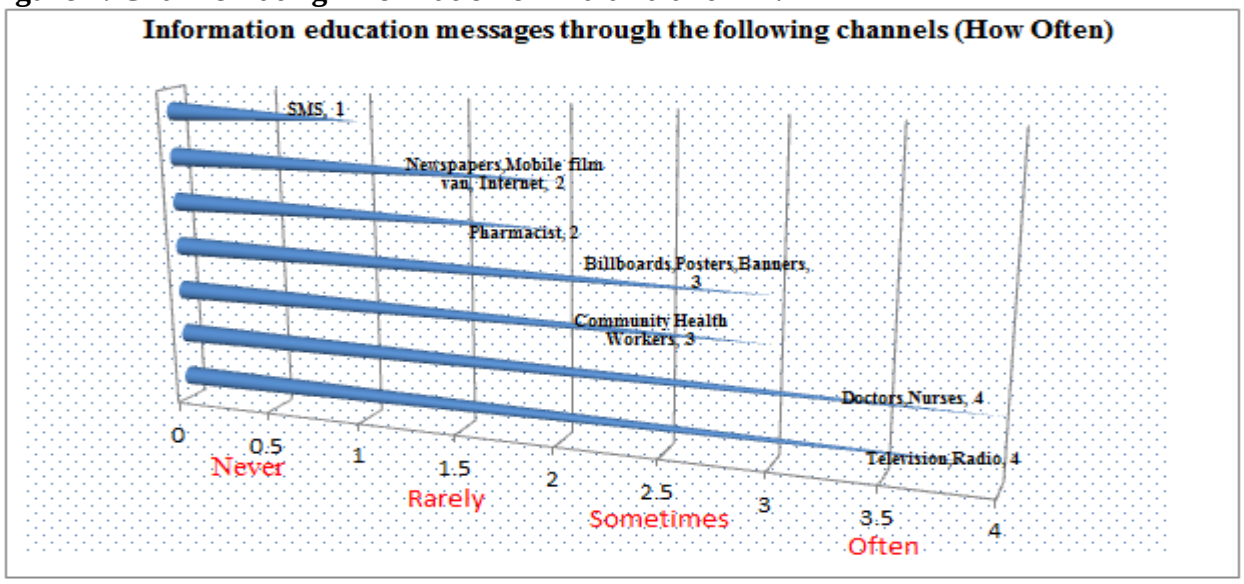


According to the results in Figure 6, 31% of the respondents were found to be hypertensive with recorded blood pressures above 140/90mm hg and they were found to be candidates who had been diagnosed and were on treatment for hypertension. These findings imply that there is much scope for increasing hypertension awareness to those not yet diagnosed with hypertension.

4.4 Health promotion channels currently used in Behaviour Change Communication (BCC) for communicable diseases

The first specific objective of the study was to determine the health promotion channels currently used for behaviour change communication (BCC) for communicable diseases. In this regard the respondents were required to indicate how often they had heard of any information education messages on malaria or HIV through a list of media channels. The findings are depicted in figure 7.

Figure 7: Channel rating Information on Malaria and HIV



The results shown in figure 7show that television, radio, doctors and nurses are the main channels through which the respondents often receive their information on malaria and HIV. The respondents sometimes receive the same information through community health workers, billboards, banners, posters or banners selling the communicating marketing the health product or services. Very rarely do the respondents receive the same information through the pharmacists, internet, mobile film vans or newspaper. There are no respondents that received any information through short message service (sms). These results imply that doctors, nurses, television and radio play a significant role in marketing health products and services to help in increasing informed demand for health products and services.

The table 4, below shows a representation of a regression analysis for the association between Malaria and HIV awareness and different health promotion channels currently used for behaviour change communication (BCC) through which respondents have had information education messages on Malaria or HIV.

Table 4: Regression output table-Malaria and HIV awareness and different health promotion channels

Malaria and HIV awareness	Coefficients	t	p>/t/	[95% conf. Interval]	
Television	**-0.9129**	**-1.17**	0.245	-.2462262	.0636461
Radio	**0.02611**	**0.42**	0.678	-0.980887	.1503192
Newspaper	**0.13137**	**2.31**	0.023	0.018457	.2442845
Internet	**-0.03865**	**-0.78**	0.436	-.136703	.059392
SMS	**-0.78159**	**-2.10**	0.038	-.152057	-0042615
Roadshow	**-0.08419**	**-1.24**	0.216	-.2183113	.0499273
Baraza	**0.069913**	**1.03**	0.307	-.065457	.2050723
Mobile Film	**-0.14121**	**-1.69**	0.093	-.306478	.0240619
Billboards	**0.193181**	**3.09**	0.003	0.069321	.3170421
Community Health workers	**0.010783**	**0.22**	0.827	-0.87087	.1086555
Doctors	**-0.14493**	**-1.86**	0.066	-.299751	.0098721
Clinical Officers	**0.61012**	**2.34**	0.021	0.024541	.2963921
Pharmacist	**0.06101**	**1.09**	0.279	-0.05027	.1722987
Posters/Banners	**-0.01124**	**-0.17**	0.868	-.1453862	.1228929
Shirts/Caps	**0.005514**	**0.09**	0.932	-1216798	.1327088
-Cons	**3.669101**	**11.74**	0.000	3.049514	.4.288687

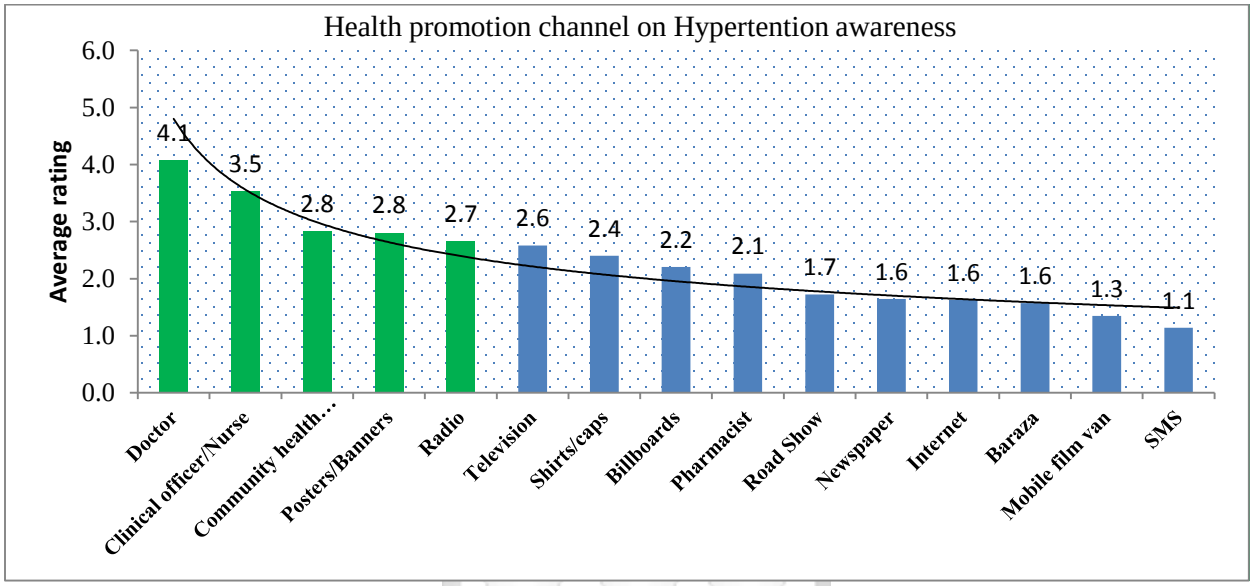
n=120; R-squared=0.3246; Prob.>F=0.001

The regression results show that only four channels are significant in spreading information on Malaria and HIV. These are the newspapers with a t-statistic of 2.31, SMSes with a t-statistic of 2.10, billboards with a t-statistic of 3.09 and clinical officer with a t-statistic of 2.34. The result shows that an increase in newspaper access with one unit could be associated with an increase in awareness by 13.14%. Lack of spread of information on HIV/Malaria through SMSes is associated with decrease in in awareness by 7.8%. Increased use of billboards by one unit is associated with an increase in HIV and malaria awareness by 19.32%. An addition clinical officer with messages on HIV and malaria would be associated with an increased awareness by 16.1%, all other factors remaining constant.

4.5 Health promotion channels that could increase public awareness of associated risk factors and lifestyle modification strategies to prevent hypertension

The second objective of the study was to determine the health promotion channels that have a potential to increase public awareness of associated risks factors and lifestyle modification strategies to prevent hypertension. The respondents were required to indicate how often they have heard of any information education messages on hypertension.

Figure 8: Channel rating Information education Messages on Hypertension



The results shown in figure: 8 show that doctors, Nurses and clinical officers are the main channels which the respondents associated with receipt of information education message on hypertension. The respondents sometimes receive the same information through community health workers, posters or banners, radios and televisions communications. Very rarely do the respondents receive the same information through theshirts/caps, Billboards, pharmacists, internet, mobile film vans or newspaper. They never receive any information on hypertension through short message service. These results imply that doctors, nurses, clinical officers, community health workers and posters/banners play a major role as the main channel that increases public awareness of associated risk factors and lifestyle modification to prevent hypertension.

The table 5, below shows a representation of a regression analysis for the relationship between Hypertension awareness and different health promotion channels currently used for behaviour change communication (BCC) through which respondents have had information education messages on hypertension.

Table 5: Regression output table-Hypertension awareness and different health promotion channels.

Malaria and HIV awareness	Coefficients	t	p>/t/	[95% conf. Interval]	
Television	**.075114**	**1.19**	0.238	-.2462262	.0636461
Radio	**-.045017**	**-0.77**	0.444	-0.980887	.1503192
Newspaper	**0.17517**	**2.33**	0.022	0.018457	.2442845
Internet	**-0.20307**	**-2.85**	0.005	-.136703	.059392
SMS	**-0.00580**	**-0.06**	0.948	-.152057	-0042615
Roadshow	**-0.13637**	**-1.75**	0.084	-.2183113	.0499273
Baraza	**-0.16333**	**-2.30**	0.024	-.065457	.2050723
Mobile Film	**0.31022**	**0.41**	0.680	-.306478	.0240619
Billboards	**0.31018**	**0.55**	0.586	0.069321	.3170421
Community Health workers	**0.15833**	**3.03**	0.003	-0.87087	.1086555
Doctors	**0.01857**	**0.20**	0.841	-.299751	.0098721
Clinical Officers	**-0.09904**	**-1.19**	0.238	0.024541	.2963921
Pharmacist	**0.11924**	**1.93**	0.056	-0.05027	.1722987
Posters/Banners	**-0.03235**	**-0.46**	0.647	-.1453862	.1228929
Shirts/Caps	**0.07042**	**1.18**	0.240	-1216798	.1327088
-Cons	**3.943474**	**16.46**	0.000	3.049514	.4.288687

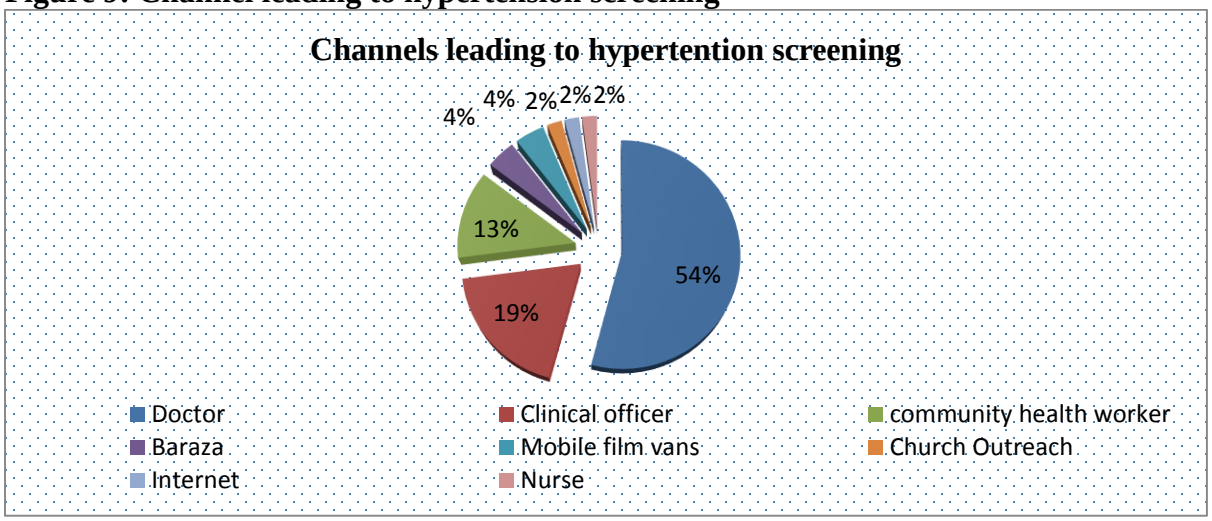
n=111; R-squared=0.251; Prob.>F=0.0148

The regression results show that only four channels are significant in spreading information on hypertension. These are the newspapers with a t-statistic of 2.33, Internet with a t-statistic of 2.85, baraza with a t-statistic of 2.30 and community health workers with a t-statistic of 3.03. The result shows that an increase in newspaper access with one unit is associated with increase in awareness by 17.52%. Lack of spread of information on hypertension through internet by one unit is associated with a decrease in awareness by 20.3%. Lack of spread of information on hypertension through baraza by one unit is associated with a decrease in awareness of hypertension by 16.33%. An addition community health worker with messages on hypertension increases awareness by 15.83%, all other factors remaining constant.

4.6 Health promotion channels that best mobilize patients to seek screening and therefore diagnosis and treatment of hypertension

The third objective of the study was to identify the health promotion channels that best mobilize patients to seek screening and therefore diagnosis and treatment of hypertension. In this regard the respondentswere required to choose from a list of channels that led them to seek screening service for hypertension and thereafter diagnosis and treatment.

Figure 9: Channel leading to hypertension screening

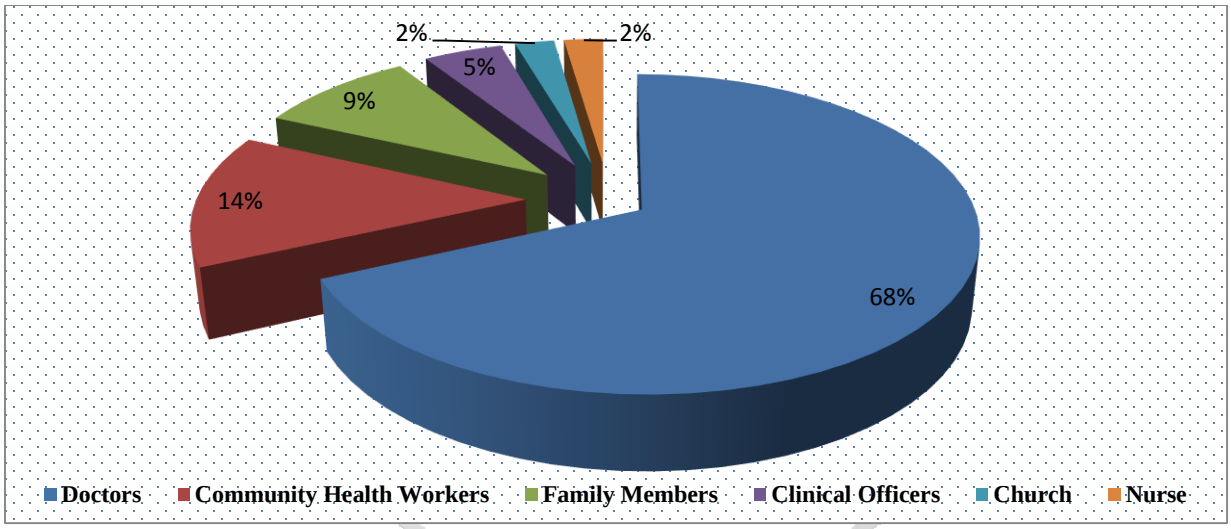


The results shown in figure: 9 show that doctors at 54 percent as the main channel that was associated with the patients seeking screening services for hypertension. The results also show clinical officers and community health workers as other channels through which mobilization for hypertension screening services takes place at 19 and 13 percent respectively. Community meetings or baraza and mobile films vans come forth with a 4 percentage point. Church outreach, Internet and nurses have a 2 percentage point as best mobilization channels for patients to seek screening, diagnosis and treatment of hypertension. None of the respondent sought the screening services as a result of mobilization campaigns in any of the following channels; Television,radio,Newspapers, SMS, Road shows, Billboards, Posters, Banners, brochures, Shirts, Caps, Wristbands or pharmacist at a chemist.

4.6.1 Channel leading to actual diagnosis and treatment

The results shown in figure 10 show that doctors at 68% are the main channel leading patients to actual diagnosis and treatment. The community health workers come second at 13.6%. Clinical officers come forth with a 4.5 percentage point and lastly at 2.2 percentage points each is the church outreach programs and nurses.

Figure 10: Channel leading to actual hypertension diagnosis and treatment



4.7 Extent to which hypertension is perceived as a likely threat to the health of the target population

The fourth objective of the study was to determine the extent to which hypertension is perceived as a likely threat to the health of the target population. In this regard the respondents were required to indicate the extent to which they agreed with the statement that hypertension was a serious or common medical condition.

Table 6: Extent to which Hypertension is considered a serious or common medical condition

	Hypertension is a serious medical condition		**Hypertension is a common medical condition**	
	Frequency	Percentage	Frequency	Percentage
Definitely disagree	3	**2%**	13	**8%**
Somewhat Disagree	7	**5%**	22	**14%**
Do not know	5	**3%**	13	**8%**
Somewhat Agree	28	**18%**	39	**25%**
Definitely agree	111	**72%**	66	**43%**

The results in table 6 show that majority of the respondents at 72 percent strongly agree that hypertension is a serious medical condition and therefore a potential threat to their health. 18 percent of the respondent somewhat posit that hypertension is a serious medical condition, with 3 percent of the respondents arguing they do not know whether it is a serious. Less than 10 percent of the respondents disagree with the statement.

The respondents were also required to indicate the extent to which they agree or disagree with the statement that hypertension is a common condition. Table 6 above shows that 43 percent of the respondents strongly agree that hypertension is common condition while 25 percent somewhat agree that hypertension is common condition. 8 percent of the respondents said that they do not know whether hypertension is a common condition or not. About 22 percent disagree with the assertion that hypertension is a common medical condition. Overall majority of the respondent agree that hypertension is both a serious and common condition and is perceived as a likely threat to the health of the target population.

4.7.1 Extent to which certain factors put the respondents at risk of hypertension

The respondents were requested to indicate the extent to which they consider several factors put them at risk of hypertension. The factors included: Family history, overweight, sedentary lifestyle, age above 40 years and high salt diet.

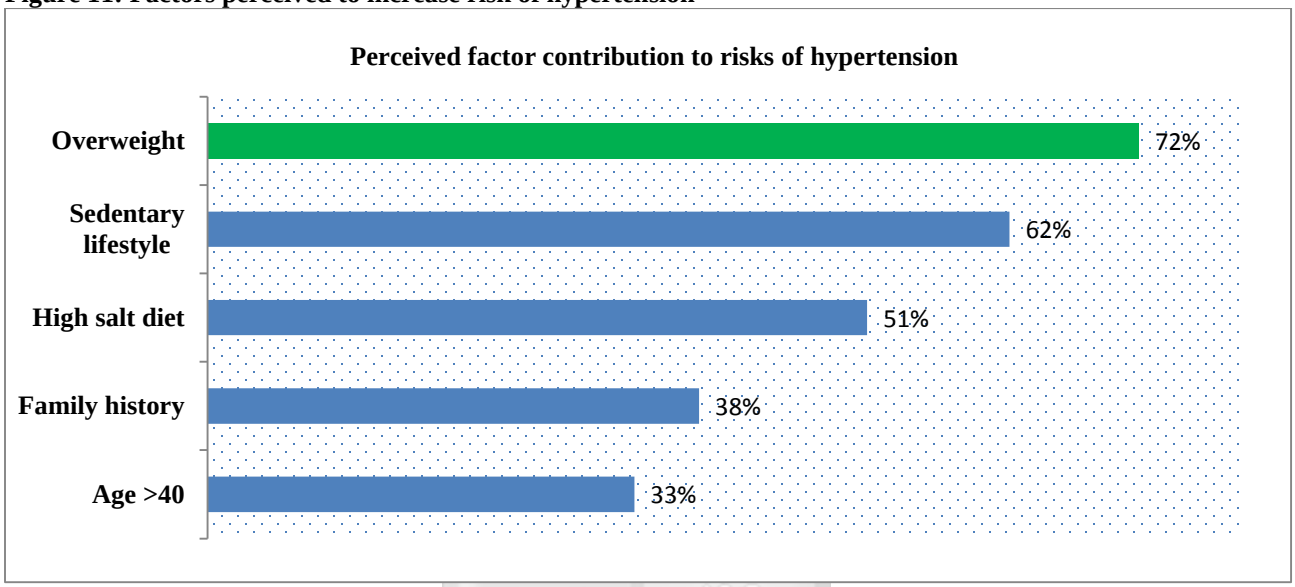
Table 7: Risk Factors for Hypertension

	Family history		Overweight		Sedentary lifestyle		Age >40		High salt diet	
	Frequecy	Percentage	Frequency	Percentage	Frequecy	Percentage	Frequecy	Percentage	Frequecy	Percentage
Definitely disagree	9	6%	1	1%	1	1%	2	1%	3	2%
Somewhat Disagree	18	12%	5	3%	4	3%	24	16%	6	4%
Do not know	35	23%	10	7%	12	8%	40	26%	29	19%
Somewhat Agree	31	21%	26	17%	42	27%	36	24%	37	24%
Definitely agree	57	38%	107	72%	95	62%	51	33%	78	51%

The results shown in table 7 above, shows that, 72 percent of the respondents perceive overweight as the major factor that puts them at risk of hypertension. Sedentary life comes second with 62 percent of the respondents strongly agreeing that it is a factor that puts them at risk of hypertension. High salt diet come third with 51 percent of the respondents strongly

agreeing it put them at risk of hypertension followed by Family history and age above 40 year at 38 and 33 percent respectively.

Figure 11: Factors perceived to increase risk of hypertension



CHAPTER FIVE
Summary, Conclusions, and Recommendations

5.0 Summary of the findings

The objective of the study was to establish the use of healthcare marketing communication channels that would increase the public education and awareness of hypertension resulting in patients seeking screening and treatment for hypertension particularly in low income setting of Nairobi, County.

The study found that 31% of the respondents were hypertensive and were candidates that had been diagnosed with hypertension and subsequently started on treatment.

The study also found that health promotion channels associated with increasing awareness on communicable diseases in this case malaria and HIV were mainly through interpersonal communication via doctors and nurses and to a lesser extent community health workers and through mass media via radio and television. Some messaging was achieved through mid-media via posters, banners and billboards. The study found that to increase awareness on these communicable diseases the significant channels to focus on were sms, newspapers, billboards and clinical officers.

The health promotion channels which respondents associated strongly with information education on hypertension were mainly interpersonal communication via doctors, nurses, clinical officers and community health workers and through mid-media via posters and banners. The study found that the significant channels to focus on in increasing hypertension awareness were newspapers, internet, baraza and use of community health workers.

The study found high levels of awareness with the overall majority of the respondents agreeing that hypertension was a serious condition (90%) and a common condition (68%) that is perceived as a likely threat to their health. The respondents were also found to be largely aware of the factors perceived to contribute to the risk of hypertension with a majority noting overweight, sedentary lifestyle and high salt diet as the main risk factors.

The study found that the health promotion channels that were associated with seeking screening for hypertension were mainly doctors at 54% as well as through clinical officers and community health workers. Mass media as a channel did not translate into seeking screening for hypertension in the population that was studied.

The final finding was that the channels that lead to actual diagnosis and treatment are again the doctors at 68% and the community health workers.

5.1Conclusion:

From the findings the study suggests that the health promotion channels currently for behaviour change communication in communicable diseases to increase informed demand for health services and products include interpersonal communication (IPC) which refers to any one-on-one interaction that takes place between a trained agent and a member or several members of a specific target audience, mid-media which is intended to reach a smaller population or area and mass media channels which are intended to reach mass audiences, can be utilized for both communicable diseases such as malaria and HIV and for non-communicable diseases such as hypertension.

Interpersonal communication (IPC) was the most significant health promotion channel for creating public awareness on hypertension, mobilizing for screening and therefore diagnosis and treatment of hypertension in this study. The IPC in this study population was strengthened or made more effective by the use of mid- media channels in this case the use of posters and banners. This finding was in conformity with the Media Richness Theory which identifies richer media such as face to face communication as being more useful to communicate complex or ambiguous messages, in this case the silent killer hypertension. It further suggests that combining multiple channels in this case IPC and the leaner channels of posters and banners, allows transmission of mutually enforcing messages.

This position is corroborated in a study by Parikh which outlines about thirty new innovations in chronic disease management from Low and Middle Income Countries which include social

marketing, health awareness/ education, health outreach and mobile health among others to promote better access and achieve higher utilization of services to pick up the silent NCDs.

To increase public awareness of hypertension and therefore screening for, diagnosis and treatment of hypertension, four other channels stood out as being significant. These are the use of newspapers and the internet which are mass media channels, utilization of baraza as a mid-media channel and finally the increased use of community health workers to boost the already critical IPC channel. Mass media campaigns with community based supportive activities such as programs in communities were found to be effective interventions. This paper however posited that more evidence was required on the effectiveness of mass media campaigns against NCDs since only few evaluations had been done. The finding in this study that newspapers and internet are significant channels in the increasing of public awareness for hypertension begins to provide more evidence on the effectiveness of this channel.

The findings in this study suggest that there is quite a high level of awareness of the seriousness of hypertension as a medical condition that is considered a likely threat to health and on the risk factors for hypertension in this study population.However there is still scope for increasing awareness on the increasing prevalence of the condition and on certain specific risk factors namely family history and age over 40 years.

This finding is quite a departure from findings in previous studies that found very low levels of awareness such as the study of rural and peri-urban communities in Kenya by Hendriks in 2012 . The high levels of awareness in this study are most likely attributable to the fact that the population studied was part of the Healthy Heart Africa campaign sample and so had most likely been exposed to information, education and communication on hypertension.

From the findings on awareness and linking these to the Health Belief Model this study suggests that the study population to a large extent perceives its susceptibility, perceives the severity of hypertension and the benefits of certain actions in preventing hypertension. The facts that those found to be hypertensive came to the clinic and were following up their anti-hypertensive treatment points to the likely significance of a hypertension education campaign.

5.2 Limitations

The sample population was exposed to information, education and communication on hypertension in the context of the Healthy Heart Africa Campaign. The areas studied were involved in an initial pilot study that did not use mass media as one of the health promotion channels to disseminate this information. This therefore limited the ability to assess the use of mass media in comparison to IPC and mid media which were widely used.

The majority of the patients sampled were attending private sector clinics , the Tunza affiliated clinics. This however was due to the fact that it was much easier to get permission to access these clinics. This however may have biased the results.

5.3 Recommendations

Arising from the results, the study recommends that the policy maker and in this case the Ministry of Health consider a policy direction that enhances the numbers and use of remunerated community health workers who will not only increase awareness but also mobilize for screening and eventual diagnosis and treatment of hypertension. This model it can probably translate to other non-communicable diseases.

The Department of Preventive and Promotive Health of the Ministry of Health should outline in the country's strategy for NCDs the effectiveness of IPC strengthened by mid media tools such as posters and banners as a tool for creating awareness and mobilizing for screening and diagnosis and treatment of hypertension. It could also consider using the mass media channels of newspapers and internet and mid media channel of barazas in the community to increase hypertension awareness.

For Amref Health Africa and Population Services Kenya which is a major player in social marketing the recommendation is that they consider work on messaging for hypertension that is suitable for the mass media channels of newspapers and internet and that such content should focus on the gaps noted in the area of risk factors that increase prevalence for hypertension. They should continue to enhance the working relationship with community health workers who as a

channel of IPC will facilitate their work of screening, diagnosing and treating hypertension in their affiliating clinics.

Finally at health facility level the training of all clinical staff on hypertension information education and communication is key as they are the most significant channel for creating hypertension awareness, screening and final diagnosis and treatment. The materials for the same can be created as collaboration between the Ministry of Health and Population services Kenya and shared with all private and public health facilities.

5.4 Suggestions for Further Research

A study focusing on public sector facilities as target population should be carried out to corroborate these findings as this particular study population was largely drawn from those attending private facilities. This will provide evidence of similarities or differences between the two populations and so enable further refining messaging and choice of channel for relaying the hypertension education message.

The use of sms as a health promotion channel to increase awareness on hypertension needs to be investigated further. This is because according to 2014 statistics form the Communications Authority, Kenya had 32.8 million mobile subscriptions. This offers a platform with the potential to reach 80% of the population with health messages.

Disaggregation of data could assess the influence of age, level of education and occupation on awareness of hypertension. This may further enable the refining of the awareness channels used for these different subsets of the population.

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Appendix 1: Sampling Frame

Amref Affiliated Sites: Nairobi West District, Langata Constituency

	Site	Types
1.	Kibera	Public/Private
2.	Uhuru Camp	Public
3.	Langata Health Centre	Public
4.	Ushirika Medical Clinic	Private

PS Kenya affiliated Tunza Clinics

(Tunza is the leading social health franchise in Kenya formed by PS Kenya in partnership with private healthcare providers offering affordable, quality and integrated health services to lower income Kenyans).

	Site	Types
1.	Embakasi Central	Private
2.	Embakasi West	Private
3.	Embakasi North	Private
4.	Embakasi South	Private
5.	Embakasi East	Private
6.	Kasarani	Private
7.	Kamukunji	Private
8.	Makadara	Private
9.	Roysambu	Private
10.	Ruaraka	Private
11.	Dagoretti	Private

Appendix 2: Informed consent

PARTICIPANT INFORMATION AND CONSENT FORM

Investigation of the use of Healthcare Marketing Communication Channels for Hypertension in Low Income Setting in Nairobi County

SECTION 1: INFORMATION SHEET–HEALTH PERSONNEL

Investigator: Dr. Jacqueline Kitulu

Institutional affiliation: Karen Surgery

SECTION 2: INFORMATION SHEET–THE STUDY

2.1: Why is this study being carried out?

Information from this study will help us improve early detection and management of hypertension

2.2: Do I have to take part?

No. Taking part in this study is entirely optional and the decision rests only with you. If you decide to take part, you will be asked to complete a questionnaire. You are free to decline to take part in the study from this study at any time without giving any reasons.

2.3: Who is eligible to take part in this study?

Adults between the ages of 18 to 69

2.4: Who is not eligible to take part in this study?

Children i.e, less than 18 years

Pregnant women

Hypertensive patients who have declined to give consent.

2.5: What will taking part in this study involve for me?

You will be approached at the point of visiting the clinic and requested to take part in the study. If you are satisfied that you fully understand the goals behind this study, you will be asked to sign the informed consent form (this form) and then taken through a questionnaire to complete.

2.6: Are there any risks or dangers in taking part in this study?

There are no risks in taking part in this study. All the information you provide will be treated as confidential and will not be used in any way to penalize or victimize you.

2.7: Are there any benefits of taking part in this study?

The information will be used to improve management of hypertensive patients and will also benefit you and other patients in future.

2.8: What will happen to me if I refuse to take part in this study?

Participation in this study is entirely voluntary. Even if you decide to take part at first but later change your mind, you are free to withdraw at any time without explanation.

2.9: Who will have access to my information during this research?

All research records will be stored in securely locked cabinets. That information may be transcribed into our database but this will be sufficiently encrypted and password protected. Only the people who are closely concerned with this study will have access to your information. All your information will be kept confidential.

2.10: Who can I contact in case I have further questions?

You can contact me, Dr. Jacqueline Kitulu, at the Karen Surgery, or by e-mail (jkitulu@gmail.com), or by phone (0722238514). You can also contact my supervisor, Dr. John Mureithi, at the Strathmore Business School, Nairobi, or by e-mail (jkmuriithi@gmail.com) or by phone (0723664993)

I, _____, have had the study explained to me. I have understood all that I have read and have had explained to me and had my questions answered satisfactorily. I understand that I can change my mind at any stage.

Please tick the boxes that apply to you;

Participation in the research study

□I AGREE to take part in this research

□ I DO NOT AGREE to take part in this research

Storage of information on the completed questionnaire

□I AGREE to have my completed questionnaire stored for future data analysis

□ I DO NOT AGREE to have my completed questionnaire stored for future data analysis

Participant's Signature: Date: _____/_____/_____

_____

DD / MM / YEAR

Participant's Name: Time: _____ /_____

_____

(Please print name) *HR / MN*

I, _____ (Name of person taking consent) certify that I have followed the SOP for this study and have explained the study information to the study participant named

above, and that she has understood the nature and the purpose of the study and consents to the participation in the study. He/She has been given opportunity to ask questions which have been answered satisfactorily.

Investigator's Signature: Date: _____/_____/_____

_____

DD / MM / YEAR

Investigator's Name: Time: _____ /_____

_____

(Please print name) *HR / MN*

Appendix 3 : QUESTIONNAIRE

Investigation of the use of Healthcare Marketing Communication Channels for Hypertension in Low Income Setting in Nairobi County

Patient code: ……. Blood pressure measured……...……..…

SECTION I: LOCATION

Ward……..

Village……....

Public……..Private…….……..

SECTION II: DEMOGRAPHICS

1. Gender:
   - Male
   - Female

2. Age group
   - Under 18 years
   - 18-30
   - 31-40
   - 41-54
   - 55-65
   - Other

3. Level of Education
   - None
   - Primary Level
   - Secondary Level
   - Diploma
   - Bachelors
   - Other

4. Occupation

- Entrepreneur
- Transportation
- Self-employed
- Farming
- Employed for wages
- Unemployed
- Student
- Retired

SECTION III: HEALTHCARE INFORMATION

To determine the health promotion channels currently used in behaviour change communication (BCC) for communicable diseases

5. Have you heard of any information education messages on malaria or HIV?
   - Yes ……. (Please proceed to next question)
   - No …….. (Thank participant and terminate interview).

6. If yes, through which of these media and how often have you heard the messages?

	1 Never	2 Rarely	3 Sometimes	4 Often	5 Very often
Television	1.❒	2.❒	3.❒	4.❒	5.❒
Radio	1.❒	2.❒	3.❒	4.❒	5.❒
Newspapers/Book	1.❒	2.❒	3.❒	4.❒	5.❒
Internet	1.❒	2.❒	3.❒	4.❒	5.❒
Short message service (Sms)	1.❒	2.❒	3.❒	4.❒	5.❒
Road show	1.❒	2.❒	3.❒	4.❒	5.❒
Community meeting (Baraza)	1.❒	2.❒	3.❒	4.❒	5.❒
Mobile film vans	1.❒	2.❒	3.❒	4.❒	5.❒
Billboards	1.❒	2.❒	3.❒	4.❒	5.❒
Community health worker (CHW)	1.❒	2.❒	3.❒	4.❒	5.❒
Doctor	1.❒	2.❒	3.❒	4.❒	5.❒
Clinical officer/Nurse at a clinic	1.❒	2.❒	3.❒	4.❒	5.❒
Pharmacist at a chemist	1.❒	2.❒	3.❒	4.❒	5.❒
Posters/Banners Flyers/brochures/	1.❒	2.❒	3.❒	4.❒	5.❒

SECTION IV

To determine the potentially effective health promotion channels that will increase public awareness of associated risk factors and lifestyle modification to prevent hypertension.

7. Through which of these media and how often have you heard any information education message on hypertension?

	1	2	3	4	5
	Never	**Rarely**	**Sometimes**	**Often**	**Very often**
o Television			1.❒ 2.❒	3.❒ 4.❒	5.❒
o Radio			1.❒ 2.❒	3.❒ 4.❒	5.❒
o Newspapers/Book			1.❒ 2.❒	3.❒ 4.❒	5.❒
o Internet			1.❒ 2.❒	3.❒ 4.❒	5.❒
o Short message service (SMS)			1.❒ 2.❒	3.❒ 4.❒	5.❒
o Road show			1.❒ 2.❒	3.❒ 4.❒	5.❒
o Community meeting (Baraza)			1.❒ 2.❒	3.❒ 4.❒	5.❒
o Mobile film vans			1.❒ 2.❒	3.❒ 4.❒	5.❒
o Billboards			1.❒ 2.❒	3.❒ 4.❒	5.❒
o Community health worker (CHW)			1.❒ 2.❒	3.❒ 4.❒	5.❒
o Doctor			1.❒ 2.❒	3.❒ 4.❒	5.❒
o Clinical officer/Nurse at a clinic			1.❒ 2.❒	3.❒ 4.❒	5.❒
o Pharmacist at a chemist			1.❒ 2.❒	3.❒ 4.❒	5.❒
o Posters/Banners Flyers/brochures/			1.❒ 2.❒	3.❒ 4.❒	5.❒
o Shirts/caps/Wristbands			1.❒ 2.❒	3.❒ 4.❒	5.❒
o Church Outreach			1.❒ 2.❒	3.❒ 4.❒	5.❒

SECTION V

To determine the extent to which hypertension is perceived as a likely threat to the health of the target population.

8. To what extent do you agree with this statement? Hypertension is a serious medical condition.

1	2	3	4	5

Definitely disagree Somewhat Disagree Don't know Somewhat Agree Definitely agree

1.❒ 2.❒ 3. ❒ 4.❒ 5.❒

9. To what extent do you agree with this statement? Hypertension is a common condition.

1 2 3 4 5

Definitely disagree Somewhat Disagree Don't know Somewhat Agree Definitely agree

1.❒ 2.❒ 3. ❒ 4.❒ 5.❒

10. To what extent do you consider that these factors put you at risk of hypertension?

1 2 3 4 5

Definitely disagree Somewhat Disagree Don't know Somewhat Agree Definitely agree

Family history 1.❒ 2.❒ 3.❒4.❒5.❒

Overweight 1.❒2.❒3.❒ 4.❒ 5.❒

Sedentary lifestyle 1.❒2.❒ 3.❒ 4.❒ 5.❒

Age above 40yr 1.❒2.❒ 3.❒ 4.❒ 5.❒

High salt diet 1.❒2.❒3.❒ 4.❒ 5.❒

SECTION VI (HYPERTENSIVE PATIENTS ONLY)

To identify the health promotional channels that best mobilize patients to seek screening and therefore diagnosis and treatment of hypertension.

11. Which of the channels below led you to seek screening for hypertension?

- Television
- Radio
- Newspapers/Book
- Internet
- Short message service (SMS)
- Road show
- Community meeting (Baraza)
- Mobile film vans
- Billboards
- Community health worker (CHW)
- Doctor
- Clinical officer/Nurse at a clinic
- Pharmacist at a chemist
- Posters/Banners Flyers/brochures/
- Shirts/caps/Wristbands
- Church Outreach

12. Once you were screened and found to have a high blood pressure, who or what led you to seek actual diagnosis and treatment?

……

……

Thank you for your time.

Name of interviewer……..... DATE……

Definitions:

Hypertension – measured blood pressure ≥ 140 mmHg systolic and/ or ≥ 90 mmHg or self-reported use of drug treatment for hypertension irrespective of measured blood pressure

Awareness of hypertension – respondents, who self-report to have hypertension, can name at least two hypertension risk factor and two lifestyle modification hypertension prevention strategies

Appendix 4: Strathmore ethics approval.

Strathmore UNIVERSITY

REF: SU-IRB 0024/16

19th February 2016

Dr. Jacqueline W Kitulu
P.O Box 10767-00100 Nairobi
Nairobi, Kenya.

Email: jkitulu@gmail.com

MBA-HCM/82955/14

Dear **Dr. Kitulu,**

REF: SU-IRB 0024/16 PROPOSAL "INVESTIGATION OF EFFECTIVENESS OF HEALTHCARE MARKETING COMMUNICATION STRATEGIES FOR HYPERTENSION IN LOW INCOME SETTING IN NAIROBI COUNTY"

We acknowledge receipt of your application to the Strathmore University Institutional Review Board (SU-IRB) which includes the study proposal, consent form and questionnaire version dates February 2016.

The committee has reviewed your application, and your study *"Investigation of Effectiveness of Healthcare Marketing Communication Strategies for Hypertension in Low Income Setting in Nairobi County"* has been granted **approval**.

This approval is valid for one year beginning **19th February 2016** until **18th February 2017**.

In case the study extends beyond one year, you are required to seek an extension of the Ethics approval prior to its expiry. You are required to submit any proposed changes to this proposal to SU-IRB for review and approval prior to implementation of any change.

Thank you

Sincerely,

Amina Salim
Regulatory Affairs Fellow

STRATHMORE UNIVERSITY INSTITUTIONAL REVIEW BOARD
APPROVED

Appendix 5: Letters to facilities

PS Kenya
Healthy lives. Measurable results.

2nd Floor, Wing B, Jumuia Place, Lenana Rd,
P.O. Box 22591-00400, Nairobi.

Tel: 020 2714349, 2714354, 2714355, 2715101/3
Telcom Wireless: 2446670/1 Fax: 2714343/2719095
KSIM: 0722 203-199, 0733 383-630
Email: info@pskenya.org
website: www.pskenya.org

March 2nd 2016.

TO Focus medical

Dear Sir / Madam

Re: Client Exit Survey - Investigation of Effectiveness of Healthcare Marketing Communication Strategies for Hypertension in Low Income Setting in Nairobi County

We would like to inform you that PS Kenya has authorized Jackline W. Kitulu to include a sample of TUNZA facilities from Nairobi region in her survey investigating the effectiveness of Healthcare marketing communication startegies for Hypertension in low income settings in Nairobi. The survey is scheduled to to be done in March 2016 and will involve talking to Tunza facility clients after seeking medical related services.

This study aims at determining the most effective healthcare marketing communication strategies that would lead to early detection of hypertension through awareness and behaviour change that would lead the largely unaware public to seek hypertension diagnosis and treatment at health facilities.

Your facility has been randomly sampled to be included in this survey. In order to facilitate this important task, we kindly request you to authorize the research consultants access to your facilities to conduct the interviews.

If you have questions about this activity, you may call the PS Kenya Quality Assurance Officer or the Research Coordinator Christine Awuor, on Office 020-2714346 Mobile: 0708719742

Thank you for your support.

Yours sincerely,

Joyce Wanderi

Chief Operating Officer

Excecutive Office.