

**ASSESSING COMMUNITY BASED HEALTH PROGRAMS FOR PREVENTION OF  
CHRONIC DISEASES IN KENYA. A CASE STUDY OF MOYALE SUB COUNTY  
HOSPITAL**

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OF AFRICA.**

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## **DECLARATION**

### **Declaration by Student.**

This research project is my original work and has not been presented for award of diploma in any other university.

**Sign**..... **Date**.....

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**DHD/13/00077/3/23**

### **Declaration by Supervisor**

This research project has been submitted with my approval as Management University of Africa Supervisor.

**Sign**..... **Date** .....

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**THE MANAGEMENT UNIVERSITY OF AFRICA.**

## **DEDICATION**

This project is dedicated to my parents who supported me throughout my life. May God grant them health, happiness, peace and longevity. And most importantly, may God bless you with His everlasting love.

## **ACKNOWLEDGEMENT**

To God, who without His grace, mercies and answered prayers I would not have completed this journey. To my supervisor, Mr. Hillary Kipkorir who tirelessly and dedicatedly advised and guided me through this diploma journey and beyond. To my very dedicated and beloved family who stood with me through the challenges and achievements of this Diploma. To the Moyale Sub-County Hospital participants who without their help this research would not have been feasible.

## **ABSTRACT**

Although mortality from communicable diseases and poor nutrition have been declining, non-communicable diseases have been on the rise in developing countries. Consequently, this poses a serious challenge to health programming. There are predictions that NCDs will continue to rise in the coming years resulting to at least 9 million deaths every year. This death rate would occur among people who are below 60 years of age in sub-Saharan Africa. NCDs are associated with some underlying risk factors of which most of them can be tackled through clear policy intervention. The specific objectives of the study sought to determine the impact of nutrition education, frequent physical activities, and level of awareness on prevention of chronic lifestyle diseases in Moyale Sub-County Hospital. A descriptive research design was adopted. The population of study includes 160 staffs of Moyale Sub-County Hospital where a sample of 64 individuals was selected using a Stratified random sampling. The data collection tools consist of questionnaires and data was presented using graphs and tables for better interpretation and analysis.

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## **LIST OF ABBREVIATIONS**

<b>CDs</b>	Communicable Diseases
<b>CVDs</b>	Cardiovascular Diseases
<b>CHAs</b>	Community Health Administrators
<b>CHVs</b>	Community Health Volunteers
<b>CUs</b>	Community Units
<b>MoH</b>	Ministry of Health
<b>MNCH</b>	Maternal, Neo-natal and Child Health
<b>NCDs</b>	Non-Communicable Diseases
<b>DALYs</b>	Disability-Adjusted Life Year

## OPERATIONAL DEFINITION OF TERMS

### **Non Communicable Diseases**

These are diseases or ailments that are non-communicable and caused mainly by sedentary lifestyles.

### **Community-based interventions**

These are solutions that are offered by the community members within a setting to problems faced within their locality. These solutions are based on user-experiences.

### **Co-Design**

This is a methodology of co-creating solutions to problems with the end user in mind. The end-user helps identify the problem and offers solutions viable and feasible to them.

# CHAPTER ONE

## INTRODUCTION

### 1.0 Introduction

The chapter presents the background of the study, statement of the problem which forms the main discussion of the proposal, both general and specific objectives, significance of the study, scope and summary of the chapter.

### 1.1 Background of Study

Non-communicable diseases (NCDs), also referred to as chronic diseases, are not contagious and cannot be passed from one individual to another. Non-communicable diseases (NCDs) are responsible for around 40 million deaths every year, making up about 70% of all global deaths. These factors, such as genetics, physiology, environment, and behavior, all contribute to their development. Some of the most prevalent non-communicable diseases include cancer, cardiovascular diseases, and chronic respiratory diseases. Diseases such as cardiovascular disease (CVD), stroke, diabetes, and certain types of cancer are commonly known as lifestyle diseases due to their strong association with lifestyle choices. These tend to have a prolonged duration and typically advance at a gradual pace. There are four primary categories of non-communicable diseases, which include cardiovascular diseases like heart attacks and strokes, cancer, chronic respiratory diseases such as chronic obstructive pulmonary disease and asthma, and diabetes. There are four significant behavioral risk factors to consider: tobacco use and exposure, unhealthy diet, physical inactivity, and harmful alcohol use. Every year, cardiovascular diseases claim the lives of 17.7 million individuals, solidifying their status as the most fatal illnesses worldwide. Every year, millions of lives are tragically lost to cancer, respiratory diseases, and diabetes. These four groups of diseases are the leading causes of death among all non-communicable diseases. Additional non-communicable diseases that are significant in Africa are haemoglobinopathies, mental disorders, violence and injury, mouth and eye diseases, and chronic diseases of infectious origin like rheumatic heart disease. (Report from WHO, Brazzaville, 2011). NCDs have a significant impact on low- and middle-income countries, with approximately 80% (29 million) of NCD deaths occurring in these regions. They are responsible for the majority of deaths in

every region except Africa. However, it is projected that Africa will experience the highest rise in deaths caused by non-communicable diseases by 2020. By 2030, the number of deaths caused by non-communicable diseases in African countries is expected to surpass the number of deaths caused by infectious and nutritional diseases, as well as maternal and perinatal deaths. (NCD Fact Sheet WHO 2013).

Kenya, similar to many other developing nations, grapples with the challenge of both communicable and non-communicable diseases. Although data availability and quality are limited, it is evident that infectious diseases, particularly HIV, and peri-natal conditions remain the primary causes of death in terms of both absolute numbers and DALYs. Cerebro-vascular diseases account for 6.1% of all causes of death, while RTA and violence contribute to 2.5% of deaths and 3.6% of DALYs. Depression, on the other hand, accounts for 1.5% of DALYs (KHSSP 2013). In 2012, NCDs were responsible for over 50% of hospital admissions and more than 55% of hospital deaths in Kenya, according to HMIS 2012.

The rise of lifestyle diseases poses a significant challenge to the socio-economic well-being of nations worldwide. It is crucial to implement effective measures to address and manage these diseases in a timely manner. Effective management of lifestyle diseases involves accurate diagnosis, thorough screening, and appropriate treatment, along with compassionate palliative care for individuals in need. Efficient lifestyle disease interventions should be implemented using a primary healthcare approach that emphasizes early detection and suitable treatment.

Health promotion and education play a crucial role in empowering individuals and communities to proactively address their health. Health education involves sharing health information and knowledge with individuals and communities, as well as teaching them skills to willingly adopt healthy behaviors (Kumar & Pritha, 2012).

There are still significant gaps in the prevention and management of non-communicable diseases (NCDs), which are often referred to as 'lifestyle diseases'. There are four significant risk factors that often contribute to the emergence of lifestyle-related diseases. These include an unhealthy diet, exposure to environmental and household pollution, excessive alcohol and tobacco consumption, and a lack of physical activity. Similar to other low- and middle-income countries, Kenya's health sector

lacks a comprehensive strategy for preventing chronic diseases (Achoki, 2019). The growing prevalence of lifestyle-related diseases is a cause for concern within impoverished communities due to various factors. Insufficient knowledge and limited availability of high-quality medical services. These communities face significant challenges in accessing preventive services and often have to allocate a large portion of their income towards medical expenses for chronic conditions (Oti et al, 2014).

Based on future projections, it is anticipated that the mortality rate could potentially decrease by 360,000 deaths per year (14%) by 2030, provided that there is a continued emphasis on policies and interventions targeting infectious diseases. While the distribution of diseases may differ across various areas, the number of infectious diseases stands at 140,000. In terms of sheer numbers, non-communicable diseases were responsible for 170,000 deaths and 60,000 injuries. This marks a significant 48% decline in deaths caused by infectious diseases. However, there has been a concerning 55% rise in deaths attributed to non-communicable diseases, while mortality rates from infectious diseases have seen a 25% increase. Physical harm and aggression

Regular health screenings and examinations are crucial for detecting diseases at an early stage, which greatly improves the chances of successful treatment and recovery. Although most development assistance is focused on infectious diseases and maternal conditions, there are strong arguments for LMICs to prioritize the prevention of lifestyle diseases. In sub-Saharan Africa, the rise of non-communicable diseases is expected to surpass the decline in communicable diseases. The estimates have significant economic implications for countries that already have limited health resources (Probst-Hensch, 2011). Thus, it is crucial to prioritize cost-effective prevention in order to address various health issues.

### **1.1.1 Profile of Moyale Sub County Hospital**

Moyale Sub county Referral Hospital is a Ministry of Health primary care hospital located in Moyale Township, Moyale in Marsabit County. As of 2021, the facility was fully operational with a capacity of 120 beds. It is regulated by Ministry of Health under registration number 12544.

## **1.2 Statement of the Problem**

Non-communicable illnesses have been overlooked for a long time. The 2011 UN High Level Assembly endorsed the Political Declaration on the Prevention and Control of Infectious illnesses, recognizing the global burden and danger of non-communicable illnesses as one of the most pressing development concerns of the twenty-first century. The General Assembly and WHO have been charged with spearheading this worldwide effort. Low levels of community illness education, along with a lack of resources, pose significant challenges to effective health promotion, particularly in Kenya's urban informal settlements. Furthermore, the function of community health volunteers in spreading health information through health workers is seldom employed to raise awareness about the prevention and management of lifestyle illnesses. WHO created the NCD worldwide Action Plan 2013-2020 and a comprehensive worldwide monitoring system for NCD prevention and control. The Global NCD Monitoring Framework includes 9 goals and 25 indicators. The Sustainable Development Goals (SDGs) have focused worldwide attention on the neglected non-communicable disease (NCD) epidemic. To promote healthy lives and increase the well-being of all people of all ages, SDG 3 contains a particular aim (aim 3.4) on NCDs to reduce premature death by half. On September 27, 2018, the United Nations General Assembly held its third high-level meeting on non-communicable diseases, with the theme "Time to Act: Accelerating our response to NCDs for the health and well-being of current and future generations." The political declaration commits to reducing NCD fatalities by one-third by 2030, as well as increasing financial and international responses to treat and prevent NCDs.

The present health promotion strategy, which promotes a healthy lifestyle to minimize the prevalence of lifestyle illnesses, exacerbates the ineffectiveness of knowledge about these diseases. Reframing such a current healthcare approach is critical for developing healthcare and communication strategies that match the end user's profile, which can be a "bottom-up approach" to public health decision-making that focuses on lifestyle disease awareness, prevention, and management techniques.

## **1.3 Objectives of the study**

### **1.3.1 General objective**

The general objective of this study will be assessing community based health programs for prevention of chronic diseases in Kenya. A case study of Moyale Sub County Hospital.

### **1.3.2 Specific Objectives**

- i To find out how nutrition education helps in prevention of chronic diseases at Moyale Sub-County Hospital
- ii To determine how frequent physical activities helps in prevention of chronic diseases at Moyale Sub-County Hospital.
- iii To establish the effect of level of awareness on prevention of chronic diseases at Moyale Sub-County Hospital.

### **1.4 Research questions**

- i. What is the influence of nutrition education on prevention of chronic diseases at Moyale Sub-County Hospital?
- ii. To what extent do frequent physical activities influence prevention of chronic diseases at Moyale Sub-County Hospital?
- iii. What is the influence of level of awareness on prevention of chronic diseases at Moyale Sub-County Hospital?

### **1.5 Significance of the study**

This research will be used in the Moyale Sub-County Hospital department of chronic diseases. The hospital needs to understand where failure is despite the solid information base, an organized method of dissemination in the hospital, support structures for the messages and an evaluation subsystem for the hospital program. The recommendations shall benefit Moyale Sub-County Hospital from the initiatives of the health program, identification of the institutional development successes and development strategy being impacted by the health practice.

This research study is an integral part of problem solving. It is an independent academic research that will contribute greatly to major stakeholder in the health sector, governments' departments of public health, hospital nutrition and dietetics departments and especially the Kenya ministry of health. The findings of this research may provide a significant basis for further academic research on the topic of health choices in regards to lifestyle diseases.

## **1.6 Scope of the study**

The study was limited to moyale sub-county hospital and focused mainly on nutrition education, frequent physical activities and level of awareness with an aim to establish the influence the same on prevention of lifestyle chronic diseases. A case study of Moyale Sub-County Hospital. The study targeted 160 staffs of Moyale Sub-County Hospital that will be drawn from management and general staff. The study was done from January 2024 to April 2024.

## **1.7 Chapter Summary**

The chapter comprised of the background of the study that presented the basis of the study, the problem statement that identified the problem that the study addresses, the study objectives that forms the research questions and the variables of the study, why the study is important and then the scope of the study.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

This chapter involves an assessment of secondary information that has been presented by other researchers in relation to the subject of study. It also summarizes the literature and related literature concerning the study variables.

#### **2.1 Theoretical Literature Review**

Theories are developed to explain, predict, and understand phenomena, as well as to challenge and extend existing knowledge within the limits of critical boundary assumptions (Swanson, 2013).

##### **2.1.1 Health Believe Model (HBM) Theory**

This study aims to utilize the health belief model (Becker, 1974) as the theoretical framework to investigate the impact of NE on individuals' selection of healthy food. The core premise of the health belief model centers around six principles. The fundamental principles encompass the assessment of an individual's perceived vulnerability and severity of a certain disease, their perception of the threat posed by the disease, and the evaluation of the perceived advantages and obstacles associated with the prescribed preventive health behavior. An additional principle to consider is self-efficacy and signals to action. Each of these principles functions inside the cognitive framework of the individual who has been exposed to a potential health hazard and is inclined to react to the circumstance by engaging in proactive measures for prevention. The impetus to modify unhealthy eating habits might originate from students themselves, members of the school community, or even society as a whole due to the mutually beneficial connection between schools and society. The anticipated outcome of this study is the selection of nutritious meals. The perceptions can be influenced by modifying circumstances and signals, but the decision-making process is the result of the reciprocal interplay of all six principles.

The principles of Health Belief Model (HBM) in the context of this study pertain to the perceived vulnerability to experiencing health consequences resulting from non-compliance with appropriate

dietary choices, which may pose a significant risk of acquiring non-communicable diseases (NCDs). Another principle to consider is the perceived severity of health problems that may arise as a result of making bad eating choices. Another principle is the level of perceived severity of a non-communicable illness (NCD) that may increase when an individual gets worried about how the sickness is impacting their family life, social relationships, employment, and education.

Adhering to healthy eating choices is linked to perceived benefits, such as a life free from non-communicable diseases (NCDs). Obstacles that individuals see as preventing them from eating and following healthy food choices, which might be influenced by elements in their social or physical surroundings. Self-efficacy refers to an individual's conviction in their ability to effectively adhere to healthy dietary choices. Cues to action encompass several elements, such as bodily symptoms associated with a health condition or environmental stimuli that can serve as motivators for individuals to adopt good eating choices. These tactics may also serve as effective means to encourage the adoption of healthier dietary choices.

## **2.2 Empirical Literature Review**

### **2.2.1 Nutrition education and prevention of lifestyle diseases.**

Nutrition education (NE) is an information-based food-based strategy that empowers the community. According to Contentto (2011), it is "any combination of educational strategies, accompanied by environmental supports, intended to facilitate the voluntary adoption of health-promoting food choices and other nutrition-related behaviors."

A number of advantages are associated with nutrition education and healthful living. These encompass maintaining a healthy lifestyle through the consumption of nutrient-dense foods, which may reduce the incidence of malnutrition and noncommunicable diseases; a nutritious and sufficient diet strengthens the immune system, which may contribute to a reduction in hospitalizations and illnesses. Healthy students have a tendency to concentrate more intently in the classroom. This will also enhance academic performance in schools by increasing completion rates, retention, and concentration. Moreover, individuals within the community will increase in productivity as a labor force (Sherman

and Muehlhoff, 2007). Nutritional Educational Programs (NEPs) facilitate the exchange of knowledge that has the potential to enhance an individual's standard of living. Nutrition education serves as a mechanism to encourage individuals to adopt more health-conscious dietary practices through the provision of knowledge and instruction on how to select and preserve foods that are rich in nutrients (FAO, 2008).

Nutrition education contributes to the improvement of self-efficacy and knowledge among elementary school pupils regarding the selection of nutritious food options that promote a healthy lifestyle. Lack of early education regarding healthy food selections can increase children's vulnerability to non-communicable diseases (NCDs), including but not limited to cancer, type II diabetes, and cardiovascular diseases (Nutrition Standards, 2012).

When effectively managed, nutrition education can serve as a cornerstone for health by promoting the adoption of a healthy lifestyle. Because decisions determine one's fate, it is not possible to assume that selecting the appropriate food is a given (WHO, 2013). Alarming is the current epidemic of diabetes, which has even spread to minors. It is necessary to investigate the tangible results of nutrition education provided in schools; doing so will reveal the deficiency that is influencing students to select unhealthy foods.

Maintaining a healthy diet provides numerous health advantages, such as the ability to carry out productive activities without incurring significant medical expenses due to non-communicable lifestyle diseases (NCLDs) (World Bank, 2011). NCLSDs are primarily caused by an individual's lifestyle, particularly their dietary choices. Nonpathogens are the cause of these noninfectious diseases (WHO, 1013). The terminology encompasses a wide range of conditions, including but not limited to obesity, cancer, cardiovascular diseases, diabetes, respiratory diseases, and bone diseases.

On a global scale, NCLSDs causing a significant proportion of disabilities account for half of all fatalities (WHO, 2013:3). The key to leading a healthy life is consuming nutritious foods and avoiding the fat present in the majority of animal meats. Additionally, the incidence of NCLSDs will decrease. Globally, obesity has escalated to epidemic proportions, resulting in the annual mortality of a minimum of 2.8 million individuals. Obesity, which was once prevalent in high-income nations, is now

widespread in low- and middle-income countries as well (WHO, 2013). Over the past three decades, childhood obesity has more than doubled in children and quadrupled in adolescents. A "caloric imbalance" determines whether an individual is overweight or obese; it occurs when the number of calories burned falls short of the number of calories consumed. Approximately 2.6 million fatalities are attributed to excessive cholesterol, 7.5 million to high blood pressure, and the number of annual deaths from NCLSDs is projected to increase to 52 million by 2030 (WHO, 2013).

A population that is adequately nourished will have robust members, who will subsequently promote economic growth. An education in affective nutrition will increase societal returns on its human capital (World Bank, 2009). A population that is both robust and well-educated is the primary driver of progress and stability. This promotes societal longevity, productivity, and socioeconomic development. Ensuring that children receive an education that encompasses not only fundamental academic abilities but also health-related knowledge, attitudes, and skills is imperative for their overall physical, psychological, and social welfare (World Bank, 2009). By imparting nutritional knowledge, attitudes, and skills, nutrition education establishes a solid groundwork for the lifelong healthful development of children. It is possible for nutrition education to mitigate the health risks associated with NCLSDs. Educational institutions are dynamic entities capable of adapting to shifting conditions and surroundings (Groot & Maasen, 2006). Given the transformative nature of the academic years, the environment presents an optimal prospect for fostering nutritious understanding, attitudes, and behaviors regarding food.

### **2.2.2 Frequent physical activities and prevention of lifestyle diseases.**

The World Health Organization defines physical activity as any skeletal muscle-generated motion that demands the expenditure of energy. Physical activity encompasses any form of motion, whether performed for recreation, transportation, or occupational purposes. Physical activity of both moderate and vigorous intensity is beneficial to health.

It is widely acknowledged on an international level that physical inactivity is a significant risk factor for non-communicable diseases (NCDs) including cancer, cardiovascular disease, and diabetes (Cecchini et al., 2010; Rütten et al., 2013). Risk factors such as hypertension have been the subject of prior research

(Lachat et al., 2013; Pratt et al., 2010; Fallis, 2013; Kruger et al., 2005). The majority, if not all, non-communicable diseases (NCDs) have been linked to physical inactivity (Unwin et al., 2006; Baleta & Mitchell, 2014; Horton, 2013; Bauman et al., 2006). Therefore, it is incumbent upon governments to encourage physical activity for the benefit of the general populace. Physical activity is also crucial in combating noncommunicable diseases (NCDs) such as cardiovascular disease, hypertension, diabetes, and cancer, according to the existing literature. While certain analysts (Rütten et al., 2013) contend that physical inactivity impacts a significant segment of the general populace, alternative research emphasizes the criticality of physical activity in enhancing the quality of life for the elderly (SRSA, 2011) and highlights the escalating problem of overweight and obesity among children (Pienaar, 2015; Cezar, 2008). Inequality and health inequity are factors that contribute to physical inactivity in low-income and middle-income nations (Di Cesare et al., 2013). Fallis (2013), Pratt et al (2010), and Sparling et al (2000) all support the promotion of physical activity as a preventative and regulatory strategy against non-communicable diseases (NCDs). This report argues that physical activity is a crucial, low-cost or no-cost intervention that aids in the control and prevention of noncommunicable diseases (NCDs) among the general population when implemented effectively. Policies, programs, and strategies regarding physical activity in relation to noncommunicable diseases must incorporate MSA into their design and implementation in order to be effective. The development context of PA policies, strategies, and programs in Kenya is crucial for determining the degree to which multisectoralism is incorporated into their conception and execution.

Physical activity promotion guidelines were formulated by the DOH Directorate of Chronic Diseases, Disabilities and Geriatric in an effort to alleviate the burden of degenerative conditions associated with advancing age. The objective is to furnish elderly individuals with flexibility, strength, endurance, and balance so that they may age in comfort. Potential program outcomes include a reduction in premature mortality, a decrease in chronic disease-related disabilities, a decrease in medical and treatment care costs, an increase in the number of individuals enjoying a high quality of life, and an increase in the active engagement of the elderly in social, cultural, economic, and political spheres as they age. The Directorate states that the program is amenable to both formal and informal implementation. A health worker oversees the organization and conducts formal activities at a specifically designated facility. Informal activities, including housecleaning, gardening, and walking, are an integral part of the daily

regimen. As a result of the policy's implementation, numerous initiatives were developed to encourage senior citizens to engage in physical activity, including the Golden Games.

Regular physical activity has been shown to aid in the prevention and management of certain malignancies, heart disease, stroke, and diabetes, among other noncommunicable diseases. In addition to these benefits, it has the potential to regulate body weight, prevent hypertension, enhance mental health, and elevate overall well-being (WHO, 2021).

Research has shown that engaging in physical activity can significantly enhance an individual's antioxidant capacity (Franzoni et al., 2015) and, as a result, their ability to eliminate free radicals that possess a carcinogenic effect (Dreher and Junod, 2016). Additionally, engaging in physical activity prolongs bowel transit time, which further reduces the duration of contact between fecal carcinogens and colonic mucosa, thereby potentially averting the development of colon cancer (Shann, 2018). Physical activity has been found to mitigate the carcinogenic effects of specific hormones, such as testosterone, which is associated with an increased risk of developing prostate cancer. Furthermore, consistent physical activity has been associated with a 50–60% improvement in the survival rate of individuals diagnosed with breast and colon cancer (Shann, 2018). Hordern (2020) recommends that individuals with diabetes engage in a minimum of 210 minutes of moderate-intensity exercise per week or 125 minutes of vigorous intensity exercise per week, with resistance training comprising two or more sessions per week (Hordern et al., 2012). It is also recommended that diabetic patients do not go without exercise for more than two consecutive days. Hence, it is preferable that exercise prescriptions for diabetic patients be formulated and overseen by professionals possessing the requisite expertise and credentials.

### **2.2.3 Level of awareness and prevention of life styles diseases.**

Health communication has been found to improve the target audience's understanding and awareness of health concerns, challenges, and solutions (Freimuth and Quinn, 2014). Health communication may also affect perceptions, beliefs, and attitudes, thereby changing societal norms and driving action toward behavior change while dispelling myths and misconceptions. Public health communication

efforts have been attributed with raising awareness about the risks of chronic and infectious diseases (Guttman et al., 2014).

African countries confront several constraints and problems in implementing health promotion programs and disease preventive and control interventions. Health care workers have traditionally approached their jobs with three goals in mind: cure, care, and prevention (Govender, 2015). Health literacy is one of the most significant barriers to successful health promotion. WHO (2020) defines health literacy as "the cognitive and social skills that determine an individual's motivation and ability to gain access to, understand, and use information in ways that promote and maintain good health." Nutbeam (2021) defines health literacy as the comprehension and ability to analyze, filter, and use information supplied in the context of one's own life.

Health promotion and education are critical tools for enabling individuals and communities to take control of their health. Health education is the process of equipping individuals and communities with health information and knowledge, as well as skills that will allow them to adopt healthy behaviors on their own will. Some major factors that have influenced effective community awareness and access to health education include irrelevant information, education, and communication (IEC) content, conflicting health education messages, language barriers, and messages that do not consider religious and cultural beliefs (Parker et al., 2012; Govender, 2014).

A research conducted in four major Kenyan cities found a significant lack of diabetes knowledge among community people. The studies focused on the degree of health promotion for the majority of chronic lifestyle conditions. There was a widespread lack of understanding of the significance of leading a healthy lifestyle that included good foods, physical activity, and better health-seeking behavior (Maina et al., 2010). This lack of information was attributed to low reading skills (the IEC material did not make much sense to them) and a lack of exposure to awareness programs. Given this, it is critical to identify treatments that reinforce people's views regardless of their level of knowledge about a given issue.

People with low health literacy should receive public health messages and interventions from the health-care system. Information should be based on a more thorough understanding of the needs and skills of people with low health literacy (Smith-Greenaway, 2015).

Educational and screening programs, as well as community-based interventions, can help to raise awareness as part of preventative efforts. These will inspire lifestyle adjustments, reducing the burden of lifestyle illnesses.

Public awareness campaigns and educational programs are critical for teaching people about the hazards and consequences of illnesses associated to a certain lifestyle. The primary aim of these programs should be to promote healthy lifestyle choices such as regular exercise, a balanced diet, quitting smoking, and moderate alcohol use (Janakiram & Dye, 2020).

Regular health screenings can detect early indicators of lifestyle-related disorders, allowing for prompt treatments. Screening programs should focus on high-risk individuals and stress the significance of early diagnosis and treatment (Pankaj, 2020).

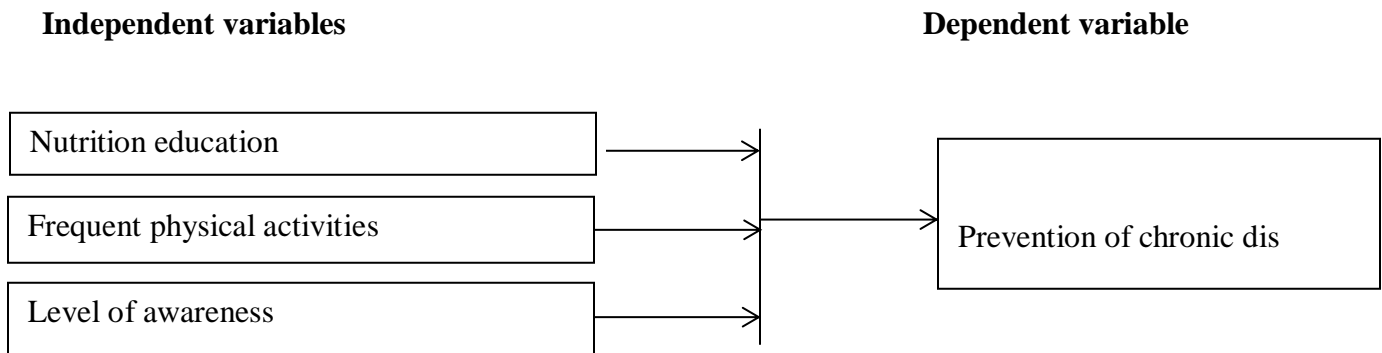
Improving access to healthcare services, particularly in underprivileged regions, is critical for the successful prevention and treatment of lifestyle illnesses (Bekele et al., 2020). This involves assuring access to medical facilities, diagnostics, and inexpensive treatment alternatives.

### **2.3 Summary and Research Gaps**

Adewale et al. (2015) conducted a study in Nigeria on the prevalence of physical activity among adults in a metropolitan Nigerian city and discovered that the proportion of Nigerian adults who met the WHO recommendations and guidelines for physical activity varied significantly by socioeconomic characteristics. The study also found that people who were divorced or separated, did not possess a car, and had a lower socioeconomic standing (as measured by low income, poor education level, and blue collar work) were more likely to be physically active. Their conclusion was that interventions based on the ecological model of health behaviors may be essential to promote physical activity among Nigerian adults. The previous study was undertaken in Nigeria, whilst the current one would be carried out in Kenya, resulting in a study gap.

## 2.4 Conceptual Framework

Conceptual framework is the diagrammatic representation to show the relationship between dependent variable and independent variable (Cooper and Schinder, 2013).



**Figure 1 : Conceptual Framework**

## 2.5 Operationalization of variable

### 2.5.1 Nutrition education

Nutrition education gives people correct information about the nutritional value of food, quality and safety of food, methods of storage, processing and handling, preparation and eating of food and helps them to make the best food choices for a suitable diet.

### 2.5.2 Frequent physical activities

Physical activity consists of any movement of the body that activates muscles and demands more energy than a state of rest. Gardening, walking, running, dancing, swimming, and yoga are all forms of physical activity. Engaging in regular physical activity has been shown to reduce the risk of chronic diseases and mortality, as well as enhance overall health. Globally, physical inactivity has a significant impact on health. A proportion of 31 percent of the population aged 15 years and older is categorized as physically inactive. Physical activity among the global population could prevent between four and five million fatalities annually. 2.6 million of the fatalities resulting from physical inactivity occur in low and middle-income countries (LMICs). Although physical inactivity is more widespread in high-income and middle-income nations, it remains one of the top ten risk factors leading to mortality even in low-income countries.

### **2.5.3 Level of awareness**

Awareness in philosophy and psychology is a concept about knowing, perceiving and being cognizant of events. Another definition describes it as a state wherein a subject is aware of some information when that information is directly available to bring to bear in the direction of a wide range of behavioural actions. The concept is often synonymous to consciousness and is also understood as being consciousness itself.

The states of awareness are also associated with the states of experience so that the structure represented in awareness is mirrored in the structure of experience.

### **2.6 Chapter summary**

The chapter has discussed the literature review that is relevant to this study. Among the literature the researcher looked include the theoretical framework. The researcher also looked at the general literature. The chapter also provided the empirical literature and the conceptual framework for this study. In the next chapter, the research methodology for this study will be provided.

## CHAPTER THREE

### RESEARCH DESIGN AND METHODOLOGY

#### 3.0 Introduction

This chapter outlines the methodology utilized in the study. The study primarily focuses on the following aspects: research design, study area, target population, sampling techniques, research instruments, pilot study, data collection, and data analysis.

#### 3.1 Research Design

Eriksson and Kovalainen (2008) define research design as a strategic blueprint that directs the collection, analysis, and interpretation of observations; it specifies the instruments and methods that will be utilized to gather and evaluate data in order to address the study's research questions. A research design combining descriptive and explanatory methodologies was utilized for the study. In addition to describing the investigated phenomenon, this design offers an explanation for it. Deducing the cause-and-effect relationship between variables is a common objective of the research designs that are commonly implemented (Pinto, Lein, & Mahoque, et al., 2018).

#### 3.2 Target Population

A study population, according to Bernard (2017), is a well-defined collection of humans or things with similar qualities and, in most cases, a common, binding attribute or trait. The research sample included people in top management, middle management, and support jobs.

**Table 1 : Target Population**

<b>Population Category</b>	<b>Target</b>	<b>Percent (%)</b>
Top management(CEOs)	20	13
Middle management (Doctors)	50	31
Supportive staff (Nurses )	90	57
<b>Total</b>	<b>160</b>	<b>100</b>

### 3.3 Sample and sampling technique

Sampling is the procedure by which a subset of a broader population is chosen. A sampling frame, as defined by Fei (2015), is an exhaustive enumeration of every element comprising a study population, from which the sample is subsequently drawn. As emphasized by Vaitkevicius and Kazokiene (2013), when the target population deviates from the total population, it is critical to guarantee that the sample frame is representative and comprehensive of the entire study population. In this research, stratified random sampling was implemented to address the heterogeneous attributes of the population from which the sample was drawn. In order to generate an ideal sample, the population was partitioned into distinct strata or subpopulations, from which samples were subsequently drawn. A random selection was made of the sample items from each stratum (Kothari, 2014). An estimated 40% of the target population demonstrates a positive disposition.

**Table 2 : Sample and Sampling Technique**

<b>Population Category</b>	<b>Target population (N)</b>	<b>Sample population (n)</b>	<b>Percentage (%)</b>
Top management	20	8	14
Middle management	50	20	29
Supportive staff	90	36	57

### 3.4 Data Collection Instruments

The research process involved gathering primary data via the administration of structured questionnaires. This facilitated the acquisition of dependable and impartial data by the researcher, which was crucial for evaluating the effectiveness of the data collection instruments and the data interpretations (Onwuegbuzie & Leech, 2016). The surveys employed in this research were organized in a questionnaire format and comprised closed-ended inquiries. The selection of structured questionnaires was justified for this research endeavor on the grounds that they have the capacity to augment the rate of responses. This is due to the simplicity with which respondents can furnish their responses when utilizing these questionnaires. The application of a

structured questionnaire enabled improved workflow efficiency during the data analysis and coding phases. Moreover, it facilitated the evaluation of the respondents' viewpoints on the research variables and helped to dispel any possible misunderstandings that the participants may have had concerning the study's concept (Cooper & Schindler, 2018). The electronic questionnaire, which was disseminated to participants through a hyperlink, was utilized to conduct the survey on a digital platform. As a consequence, participants were granted sufficient time to respond to every inquiry contained in the survey.

### **3.5 Pilot Study**

A pilot test involves performing an initial evaluation of data collection instruments and protocols in order to detect and rectify any possible complications or inaccuracies. The purpose of this process is to detect ambiguous inquiries and imprecise directives, collect insightful feedback and suggestions, and improve the effectiveness of instruments used for data collection. The results obtained from a pilot study provide the opportunity to refine and adapt the instruments and protocols required for the main data gathering phase (Mohamed, 2018). A pilot study was undertaken as part of the investigation, utilising a sample size of ten individuals who were subsequently excluded from the target group. The aforementioned value corresponds to an estimated 10% of the total sample size. The validity and reliability of the research instrument were ascertained by examining the results of the pilot study that Sekaran (2015) conducted.

#### **3.5.1 Validity**

Validity refers to the degree to which data instruments are suitable for use with the specific population being studied (Kothari, 2014). The study utilized criterion validity to ascertain that the measure accurately assesses the intended variable and is not influenced by any other factors. In order to enhance the validity of this study, the researcher sought the input of research experts to obtain their comments on the appropriateness of the study.

#### **3.5.2 Reliability test**

The concept of reliability in an instrument pertains to its ability to consistently produce similar results when used repeatedly. The achievement of reliability in an instrument is indicated by

consistent results obtained on a variable, even after multiple administrations. According to Miller (2015), reliability refers to the tendency for consistency. The studies utilized re-test method as a statistical measure to assess the internal consistency and reliability of the research instrument.

### **3.6 Data Collection Procedure**

A study permission was secured from The Management University of Africa before undertaking fieldwork in the selected departments of Moyale sub-county hospital to collect data. After receiving the requisite authorization, the researcher traveled to the selected field to begin data collecting. Before delivering the surveys, the researcher asked respondents' approval for their desire to participate. The surveys were distributed to respondents in person, using the correct process of getting consent before distributing them. The questionnaires were gathered separately for examination.

### **3.7 Data Analysis and Presentation**

Data analysis is the systematic investigation and assessment of data with the goal of gaining useful insights, making educated interpretations, and supporting successful decision-making (O'Neil & Schutt, 2013). The data that was obtained was thoroughly examined to verify its integrity and inclusion. Following the initial phase, the data was rigorously aggregated, coded, tabulated, and then loaded into the SPSS (Statistical Package for the Social Science) software to allow for complete analysis. Descriptive statistics, especially frequencies and frequency percentages, were used to improve comprehension and interpretation of the data, revealing patterns and trends. The goal of this method was to increase the comprehension and significance of the findings from the data analysis.

### **3.8 Ethical Considerations**

According to Saunders et al. (2016), ethics refers to the moral rules that regulate moral assessments in interpersonal relationships. The study followed ethical criteria to assure the research's integrity. The researcher began the process of obtaining consent to conduct the study by sending a formal letter to The Management University of Africa. The study followed strict confidentiality standards to guarantee that data was collected from participants while maintaining their anonymity. The participants are given the choice to complete the questionnaire in a way

that protects their confidentiality. A formal letter was submitted to Moyale Sub-County Hospital expressing the intention to participate in the research and ensuring that informed consent for study participation was obtained.

### **3.9 Chapter Summary**

The chapter provided an overview of the research methodology employed in the investigation. The study employed a descriptive design in order to align with the nature of the investigation. The target population, sample size, sampling process, research instrument, data collection procedure, and analytic procedures have all been thoroughly described.

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION AND INTERPRETATION

#### 4.0 Introduction

The chapter presents the results of the study. The results are organized according to the objectives of the study and presented using tables.

#### 4.1 Presentation of findings

##### 4.1.1 Response Rate

The researcher distributed the organization with a total of 64 questionnaires. Many of the participants fully filled out and returned the questionnaires. This is the response rate from the results:

**Table 3 : Response rate**

<b>Response rate</b>	<b>Frequency/ No of questionnaires</b>	<b>Percentage (%)</b>
Responded	58	91
Not responded	6	9
<b>TOTAL</b>	<b>64</b>	<b>100</b>

A survey consisting of 64 questionnaires was delivered at Moyale Sub-County Hospital as a component of the research investigation. Following the conclusion of the data collection phase, a total of 58 questionnaires were positively returned, representing a participation rate of 91% out of 64 questionnaires distributed. A proportion of 9% of the respondents, failed to submit their questionnaires. A response rate of 93% was considered to be adequate for the purpose of analysis. According to Cresswell (2014), it is advisable to consider a response rate of no less than 60% as satisfactory for the purposes of analysis.

##### 4.1.2 Background information

#### 4.1.2.1 Gender

The objective of the research was to ascertain the gender of the participants. This decision was made in order to mitigate any gender bias in the research.

**Table 4 : Gender of respondents**

<b>Gender</b>	<b>Frequencies</b>	<b>Percentage (%)</b>
Male	32	55
Female	26	45
<b>TOTAL</b>	<b>58</b>	<b>100</b>

The research results indicate that 55% of the participants who responded to the survey were identified as male, while 45% were identified as female. The study's results indicate a balanced distribution of genders as no gender is more than two-thirds of the total sample.

#### 4.1.2.2 Level of Education

The educational class of the individuals significantly impacts their own understanding and perception of several matters. The participants were instructed to provide details pertaining to their educational credentials in order to evaluate their capacity to reply the study queries in an appropriate manner.

**Table 5 : Level of Education**

<b>Level of Education</b>	<b>Frequency</b>	<b>Percentage (%)</b>
College	30	52
University	24	41
Post- University	4	7
<b>TOTAL</b>	<b>58</b>	<b>100</b>

The results indicated that a substantial fraction of the participants, precisely 52%, had attained or were already engaged in pursuing higher education at the college. On the other hand, it is noteworthy that the proportion of respondents at the university level was 41%, whilst the representation of individuals at the post-university level was the lowest, standing at 7%. The results of the study indicate that all participants demonstrated a high level of proficiency in addressing the research inquiries, without facing any notable challenges it simplify that the individuals were conversant with health issues and body conditions in general.

#### 4.1.2.3 Age bracket

Individuals from different age groups may have different views on various issues; therefore, the researcher, collected information regarding the respondents' age groups for further analysis.

**Table 6 : Age bracket**

<b>Age bracket</b>	<b>Frequency</b>	<b>Percentage</b>
18 – 25	11	19
26 – 35	25	43
36 – 45	14	24
Above 45	8	14
<b>TOTAL</b>	<b>58</b>	<b>100</b>

According to the statistics presented in table 5 above, 19% of the respondents inside the organization were between the ages of 18 and 25. Furthermore, 43% of respondents were between the ages of 26 and 35, while 24% were between the ages of 36 and 45. Finally, 14% of respondents were 45 years of age or older. The data indicate that the stakeholders in Moyale Sub-County Hospital were ranged in age, showing a degree of maturity that allowed them to properly execute their roles and duties in their work station.

#### 4.1.3 Nutrition education and prevention of chronic diseases

The researcher sought to examine how nutrition education influences prevention of chronic

diseases at Moyale Sub-County Hospital. The study findings are discussed using descriptive statistics to show the responses.

**Table 7 : Respondents view on how nutrition education influences prevention of chronic diseases at Moyale Sub-County Hospital.**

	<b>S A</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
The level of parental understanding on the integration of nutritious foods into family mealtime is likely to have influenced the enhancement of healthy food selections.	65%	30%	5%	0%	0%
Introduction of the nutrition subject in the new syllabus and curriculum so as young pupils can be equipped with knowledge on healthy foods at tender age	53%	44%	3%	0%	0%
There is less awareness of the balanced diet within the area as malnutrition is prominent	50%	26%	4%	10%	10%

The first question of the study examined whether the level of parental understanding on the integration of nutritious foods into family mealtime is likely to have influenced the enhancement of healthy food selections and 65% of the respondents strongly agreed, 30% agreed, 5% remained neutral, and none strongly disagreed or agreed. The second question pertaining to this variable investigated whether introduction of the nutrition subject in the new syllabus and curriculum so as young pupils can be equipped with knowledge on healthy foods at tender age and 53% strongly agreed, 44% agreed, and 3% remained neutral. None of the respondents strongly disagreed or agreed with this statement. The last objective of the study was to investigate if there is less awareness of the balanced diet within the area as malnutrition is prominent and the findings revealed that 50% of the respondents strongly agreed with this notion, 26% agreed, 4% remained neutral, while 10% of the respondents disagreed, and 10%

strongly disagreed.

#### 4.1.4 Frequent physical activities and prevention of chronic diseases

The study sought to examine the influence of frequent physical activities on prevention of chronic diseases at Moyale Sub-County Hospital. The study findings are discussed using descriptive statistics to show the responses.

**Table 8 : Respondents view on the influence of frequent physical activities on prevention of chronic diseases at Moyale Sub-County Hospital**

	SA	A	N	D	SD
Frequent exercising leads to relaxation of the body and ease of bore down.	45%	35%	10%	8%	2%
exercise participation improves myocardial function by increasing myocardial strength and oxygen delivery while decreasing myocardial oxygen demand	40%	34%	5%	14%	7%
The daily physical exercise would optimally improve the health of bone and increase the density of bone minerals. The above intervention can be offered in cases of osteoporosis as a prevention and cure in order to reduce these risks of bone broken fracture in the future.	10%	80%	3%	7%	0%

The first inquiry of the study aimed to determine whether frequent exercising leads to relaxation of the body and ease of bore down. The responses obtained were as follows: 45% of the respondents strongly agreed, 35% agreed, 10% remained neutral, 8% disagreed and 2% strongly disagreed.

The study also investigated whether exercise participation improves myocardial function by increasing myocardial strength and oxygen delivery while decreasing myocardial oxygen demand The results indicate that 40% strongly agreed, 34% agreed, 5% were neutral, 14%

disagreed, and 7% strongly disagreed with this statement. The final statement of the study investigated the extent to which the daily physical exercise would optimally improve the health of bone and increase the density of bone minerals. The above intervention can be offered in cases of osteoporosis as a prevention and cure in order to reduce these risks of bone broken fracture in the future. The results indicated that 10% of participants strongly agreed, 80% agreed, 3% were neutral, 7% disagreed, and 0% strongly disagreed.

#### 4.1.5 Level of awareness on prevention of chronic diseases

The study sought to examine the influence of level of awareness on the prevention of chronic diseases at Moyale Sub-County Hospital. The study findings are discussed using descriptive statistics to show the responses.

**Table 9 : Respondents view on the influence of level of awareness on the prevention of chronic diseases at Moyale Sub-County Hospital.**

	<b>S A</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
Continuous campaigns by health organizations on healthy lifestyles leads to reduction of chronic diseases.	17%	70%	5%	7%	1%
Media plays a crucial role in information dissemination of lifestyle diseases	31%	57%	10%	2%	0%
Provision of ready access to health facilities which deals with earlier screening and detection of the lifestyle diseases for better management and treatment is critical	27%	58%	9%	6%	0%

The study enquired if Continuous campaigns by health organizations on healthy lifestyles leads to reduction of chronic diseases and 17% strongly agreed, 70% agreed, 5% were neutral, 7% disagreed and 1% strongly disagreed with the statement. The study also investigated if Media plays a crucial role in information dissemination of lifestyle diseases and 31% strongly agreed, 57% agreed, 10% were neutral, 2% disagreed and none of them strongly disagreed. The last statement enquired if Provision of ready access to health facilities which deals with earlier screening and detection of the lifestyle diseases for better management and treatment is critical and 27% strongly agreed, 58% agreed, 9% were neutral, 6% disagreed and none of them strongly disagreed.

#### **4.2 Chapter Summary**

The chapter contains the response rate, presentation of the findings which was analyzed both qualitatively and quantitatively by the researcher. The chapter also highlights limitations of the study.

## CHAPTER FIVE

### SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

#### 5.0 Introduction

This part of the study summarizes the research outcomes, recommendations and conclusion. The outcomes are summarized in line with the study variables.

#### 5.1 Summary of findings

##### 5.1.1 Background Information

A survey consisting of 64 questionnaires was delivered at Moyale Sub-County Hospital as a component of the research investigation. Following the conclusion of the data collection phase, a total of 58 questionnaires were positively returned, representing a participation rate of 91% out of 64 questionnaires distributed. A proportion of 9% of the respondents, failed to submit their questionnaires. A response rate of 93% was considered to be adequate for the purpose of analysis. According to Cresswell (2014), it is advisable to consider a response rate of no less than 60% as satisfactory for the purposes of analysis. The research results indicate that 55% of the participants who responded to the survey were identified as male, while 45% were identified as female. The study's results indicate a balanced distribution of genders as no gender is more than two-thirds of the total sample. The results indicated that a substantial fraction of the participants, precisely 52%, had attained or were already engaged in pursuing higher education at the college. On the other hand, it is noteworthy that the proportion of respondents at the university level was 41%, whilst the representation of individuals at the post-university level was the lowest, standing at 7%. The results of the study indicate that all participants demonstrated a high level of proficiency in addressing the research inquiries, without facing any notable challenges it simplify that the individuals were conversant with health issues and body conditions in general. According to the statistics presented in table 5 above, 19% of the respondents inside the organization were between the ages of 18 and 25. Furthermore, 43% of respondents were between the ages of 26 and 35, while 24% were between the ages of 36 and 45. Finally, 14% of respondents were 45 years of age or older. The data indicate that the stakeholders in Moyale

Sub-County Hospital were ranged in age, showing a degree of maturity that allowed them to properly execute their roles and duties in their work station.

### **5.1.2 What is the influence of nutrition education on prevention of chronic diseases at Moyale Sub-County Hospital?**

The first question of the study examined whether the level of parental understanding on the integration of nutritious foods into family mealtime is likely to have influenced the enhancement of healthy food selections and 65% of the respondents strongly agreed, 30% agreed, 5% remained neutral, and none strongly disagreed or agreed. The second question pertaining to this variable investigated whether introduction of the nutrition subject in the new syllabus and curriculum so as young pupils can be equipped with knowledge on healthy foods at tender age and 53% strongly agreed, 44% agreed, and 3% remained neutral. None of the respondents strongly disagreed or agreed with this statement. The last objective of the study was to investigate if there is less awareness of the balanced diet within the area as malnutrition is prominent and the findings revealed that 50% of the respondents strongly agreed with this notion, 26% agreed, 4% remained neutral, while 10% of the respondents disagreed, and 10% strongly disagreed.

### **5.1.3 To what extent do frequent physical activities influence prevention of chronic diseases at Moyale Sub-County Hospital?**

The first inquiry of the study aimed to determine whether frequent exercising leads to relaxation of the body and ease of bore down. The responses obtained were as follows: 45% of the respondents strongly agreed, 35% agreed, 10% remained neutral, 8% disagreed and 2% strongly disagreed.

The study also investigated whether exercise participation improves myocardial function by increasing myocardial strength and oxygen delivery while decreasing myocardial oxygen demand. The results indicate that 40% strongly agreed, 34% agreed, 5% were neutral, 14% disagreed, and 7% strongly disagreed with this statement. The final statement of the study investigated the extent to which the daily physical exercise would optimally improve the health of bone and increase the density of bone minerals. The above intervention can be offered in cases

of osteoporosis as a prevention and cure in order to reduce these risks of bone broken fracture in the future. The results indicated that 10% of participants strongly agreed, 80% agreed, 3% were neutral, 7% disagreed, and 0% strongly disagreed.

#### **5.1.4 What is the influence of level of awareness on prevention of chronic diseases at Moyale Sub-County Hospital?**

The study enquired if Continuous campaigns by health organizations on healthy lifestyles leads to reduction of chronic diseases and 17% strongly agreed, 70% agreed, 5% were neutral, 7% disagreed and 1% strongly disagreed with the statement. The study also investigated if Media plays a crucial role in information dissemination of lifestyle diseases and 31% strongly agreed, 57% agreed, 10% were neutral, 2% disagreed and none of them strongly disagreed. The last statement enquired if Provision of ready access to health facilities which deals with earlier screening and detection of the lifestyle diseases for better management and treatment is critical and 27% strongly agreed, 58% agreed, 9% were neutral, 6% disagreed and none of them strongly disagreed.

## **5.2 Conclusions**

This is a comprehensive review of the lifestyle diseases as they affect world health. The lifestyle diseases are without doubt the largest killer of the world population in the 21st century and hence they are to be addressed with very aggressive approaches to their treatment since they are non-communicable diseases that take a significant amount of time in their development. The plot weaves through obesity, diabetes, and hypertension by explaining the description, prevalence, and the indispensable role of lifestyle choices and changeable risk factors in the development of these diseases. The study suggests several interventions that could be offered for the prevention and/or treatment of the diseases through a lifestyle approach. Put differently, key compliance and awareness, health screening, access to healthcare, reform in regulations, and cooperative initiatives represent key elements integral as components participating in the cure of lifestyle diseases. This study is in agreement with many other public health researches in the broader sector, both insisting on tightening global, regional, national, or local effort to continue reducing the burden of such conditions and lower the risk associated with predisposing to lifestyle

diseases and help in other health outcomes. This work contributes practical information in the infinite efforts of the world toward reducing the impacts of lifestyle illnesses and paving healthy societies in general.

Educational interventions are effective in improving the knowledge of adolescents regarding healthy lifestyle as schools are supposed to be an important platform in imparting knowledge on health promoting lifestyle diseases, initiatives should be taken at school level including curriculum modification and conducting lifestyle modification programs so that the students in their early life may adopt healthy lifestyle habits.

### **5.3 Recommendations**

Future training curriculum for health care providers should include topics on: strategies to improve patient motivation to exercise, current exercise recommendations, exercise prescription, exercise screening and information regarding determining patient's stage of change for readiness to exercise. Policy changes for exercise promotion by health care providers in developing countries is necessary. Policy is needed to influence the recognition of the benefits of physical activity and its proven association with prevention and control of non-communicable diseases.

### **5.4 Suggestions for Further Studies**

The report recommends further research is needed regarding the promotion, implementation of the Exercise Is Medicine initiative by health care providers in developing nations. Future studies need to examine the effects of both Exercise is Medicine-specific training for health providers and interventions in these populations using Exercise is Medicine.

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