ATTITUDES AND PRACTICE OF HEALTH PROMOTION FOR NON-COMMUNICABLE DISEASES AMONG HEALTHCARE WORKERS AT KENYATTA NATIONAL HOSPITAL

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DECLARATION

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ABBREVIATIONS AND ACRONYMS

BMI	Body mass index
DALYs	Disability Adjusted Life Years
HCWs	Healthcare workers
HP	Health promotion
HPH	Health promoting hospitals
HPM	Health promotion model
KNH	Kenyatta national hospital
KNH/UON-ERC	Kenyatta National Hospital and University of Nairobi- ethics & research committee
LMICs	Low- and middle-income countries
NCDs	Non-communicable diseases
PI	Principal Investigator
SPSS	Statistical Package for the Social Science
WHO	World Health Organization

OPERATIONAL DEFINITION OF TERMS

Attitude: the way in which healthcare workers think and behave with regards to health promotion

Competence: This is a combination of theoretical knowledge and practical skills that enable an individual to perform effectively in a given situation

Healthcare worker: Licensed health professionals who are directly engaged in the care, treatment and management of patients. For this study the term will apply to doctors, and nurses.

Health promotion: The process of enabling people to increase control over, and to improve their health (WHO, 1986). In this study the term refers to the opportunistic application of preventive measures for NCDs by healthcare workers to their patients. These measures include counselling and advocacy to enable people, individually and collectively, to increase control over their own health.

Health promotion practices: these are interventions undertaken by healthcare workers through verbal information or instruction to assist patients to alter/ modify negative lifestyle practices in order to improve health and well-being.

Health Services: These are services dealing with diagnosis, treatment and management of diseases with the goal to restore and maintain health of patients.

Incentives: These are factors within a healthcare workers' work environment that enable, encourage and/ or motivate them to carry out their duty effectively

Lifestyle Practices: A set of habitual behaviors which affect either positively or negatively, the health of an individual**.** This study will focus on lifestyle practices pertaining to tobacco use, alcohol consumption, diet and physical activity.

Non communicable diseases: These are diseases that result in long term health management, are caused by multiple risk factors and have a non-contagious origin. They may also be termed as chronic diseases (WHO 2015 a).

Risk Factors: Is any attribute, characteristic or exposure of an individual that increases the likelihood of developing a disease or injury (WHO 2015 a).

ABSTRACT

Introduction: The rising burden of non-communicable diseases poses a great health system challenge in Kenya. Healthcare workers have a critical role to play in health promotion, in addressing patients' lifestyle risk factors. However, their own lifestyle habits can influence their attitude and practices towards patient care. Opportunistic counselling of patients by health professionals signifies one of the most cost effective medical interventions in combatting non-communicable diseases.

Objective: To determine the attitudes and practice of health promotion for the prevention and management of non-communicable diseases among healthcare workers at the Kenyatta national hospital.

Methods: A cross-sectional mixed method study was carried out from June to July 2016 at Kenyatta National Hospital.

For the quantitative method, one hundred and eighty five doctors and nurses in the department of reproductive health and medicine were recruited through stratified sampling. Data on healthcare workers; socio-demographic characteristics, lifestyle practice, attitude, and practice of health promotion was collected through self-administered questionnaires. Frequency and percentage distributions tables were used to initially describe the study population while, Chi- square test of significance was used to evaluate the association between healthcare workers attitudes and practice of health promotion and their socio-demographic features.

Secondly, a total of 12 doctors and nurses were purposively selected based on age, gender and profession of participants for the qualitative method. Data on healthcare workers perspective on health promotion and organizational support factors were collected through in-depth interviews. The recorded interviews were transcribed and data analysis was done using content analysis of thematic areas. A verbatim approach was used to describe study findings.

Results: 69.2% of the respondents were females, mean age was 36 years and the median years in profession was 12 years. The respondents exhibited good lifestyle practices with alcohol and tobacco prevalence at 30.8 %and 3.8% respectively. 72% of the respondents demonstrated a positive attitude towards health promotion while, 31% showed good health promotion practices. Less than half of the respondents inquired about a patient's lifestyle practices during routine visit. The study found that healthcare workers with a positive attitude were four times more likely to have good health promotion practices (OR = 3.54, $p<0.001$). Lastly findings from the in depth interviews revealed that staff had no written guidelines on health promotion and that the hospital management had abolished the health promotion unit.

Conclusion: The results indicated that a positive health professional attitude is a precursor to good health promotive practices.

Recommendation: Efforts to build capacity and support for health promotion in health services should be encouraged. Additionally, health Promotion programs for non-communicable disease should not only target the health of general population but also the health of health care workers.

CHAPTER ONE: INTRODUCTION

1.1. Introduction

The global health disease profile is rapidly evolving with deaths and disabilities from non-communicable diseases (NCDs) surpassing those from infectious diseases, resulting in a double burden of diseases (WHO, 2013a). It is estimated that about 80% of cardiovascular diseases and type 2 diabetes could be prevented through adoption and maintenance of healthier lifestyle practices, such as, tobacco cessation, healthy dietary habits, and reduction in alcohol consumption (Holmberg et al., 2014). Therefore, healthcare settings offer an ideal entry point for health promotion, as 80% of the general population visits a hospital one or more times each year (Spanou et al., 2010). In addition, healthcare workers are deemed to be trustworthy thus are at a vantage point to provide lifestyle counselling opportunistically to both at risk patients and the general population (Brotons et al., 2005; Johansson, Stenlund, Lundström, & Weinehall, 2010).

1.1.1. Non-communicable Diseases Prevalence

Non-communicable diseases (NCDs) account for 60% of global deaths, with cardiovascular disease, cancers, chronic respiratory disease and diabetes constituting approximately 80% of all NCD-attributable deaths. (WHO, 2014a). In Kenya, NCDS account for 28% of the total deaths, the leading causes of NCD mortality are; cardiovascular disease (8% of total mortality), cancers (7%), chronic respiratory disease (1%) and diabetes (2%) (WHO, 2014b).

The burden of NCDs has been linked to exposure to four modifiable lifestyle risk factors; these are tobacco use, alcohol consumption, unhealthy diet and physical inactivity. It has been stated that 80% of cardiovascular disease, 90% of type 2 diabetes, and 30% of

all cancers are preventable if the four lifestyle risk factors were reduced or eliminated. (WHO, 2014a). Therefore, preventive strategies which will ensure primary prevention of NCDs as well as minimizing the consequences of the disease are of great importance.

1.1.2. Health Promotion for Non Communicable Diseases

The rising trends in NCDs have been shown to exert constraints on individuals, household and communities by heightening poverty and increasing health inequities, consequently putting at risk the gains of social and economic development(Robinson & Hort, 2012). In addition, a retrospective study on the public health implications of diabetes in low- and middle-income countries showed that the double burden of diseases imposes an enormous strain on the existing healthcare system, as both conditions compete for limited finances and political attention (Hall, Thomsen, Henriksen, & Lohse, 2011).

Despite the devastating social, economic and public health impact of NCDS, studies have shown them to be preventable (Aikins et al., 2010; Robinson & Hort, 2012; WHO, 2014a) For prevention of NCDs to be most effective, focus must be on activities that encourage healthy living and limit the initial onset of NCDs. Prevention should also embrace early detection efforts, such as screening at-risk populations, as well as strategies for appropriate management of existing diseases and related complications(WHO, 2013a) . To achieve this, there is a need for adoption of holistic interventions to address NCDs, through raising awareness and empowering people to take charge of their health and well- being. This captures the essence of health promotion, whose aim is enabling people to take control over their health (Dobe, 2012).

There has been an increasing recognition that curative interventions alone cannot guarantee better health considering, health is greatly influenced by factors outside the scope of the health sector, such as social, political and economic factors. These factors impact the way in which people live, work, and age (Coe & Beyer, 2014; Kumar & Preetha, 2012). Thus, the attainment of the highest possible standard of health depends on a holistic approach involving communities, health providers and the population at large (Kemppainen, Tossavainen, & Turunen, 2013). Therefore, to reduce and halt the rise of NCDs, it is essential to have a coordinated, and holistic prevention approach that promotes healthy behaviours, expands early detection and diagnosis of disease, and eliminates health disparities (Dobe, 2012; Kumar & Preetha, 2012).

1.1.3. Importance of Health Promotion in Health services

The concept of health promotion in health services was introduced more than 20 years ago with an aim to reorient health services to adopt health promotion activities (McHugh, Robinson, & Chesters, 2010). Evidence suggests that brief lifestyle interventions delivered within healthcare facilities are highly effective (Harris, 2008; Laws et al., 2008; Spanou et al., 2010).

Health promotion significantly relies on mediation and advocacy through, creating an enabling environment for people, individually and collectively, to increase control over their health and its determinants. These enabling environments are vital for the prevention and control of NCDs (Dobe, 2012).

Healthcare facilities offer an ideal setting for health promotion, as about 80% of the general population visits a hospital one or more times each year (Jonsdottir, Börjesson, & Ahlborg, 2011). Therefore, healthcare workers (HCWs) are at a vantage point to

provide health promotion counselling opportunistically, that is, when patients visit them for any reason (Spanou et al., 2010).

A look at the stages of the disease continuum shown in figure 1, identifies the distinct levels in which approaches to health promotion can be applied.

Figure 1: Health promotion in different levels of prevention

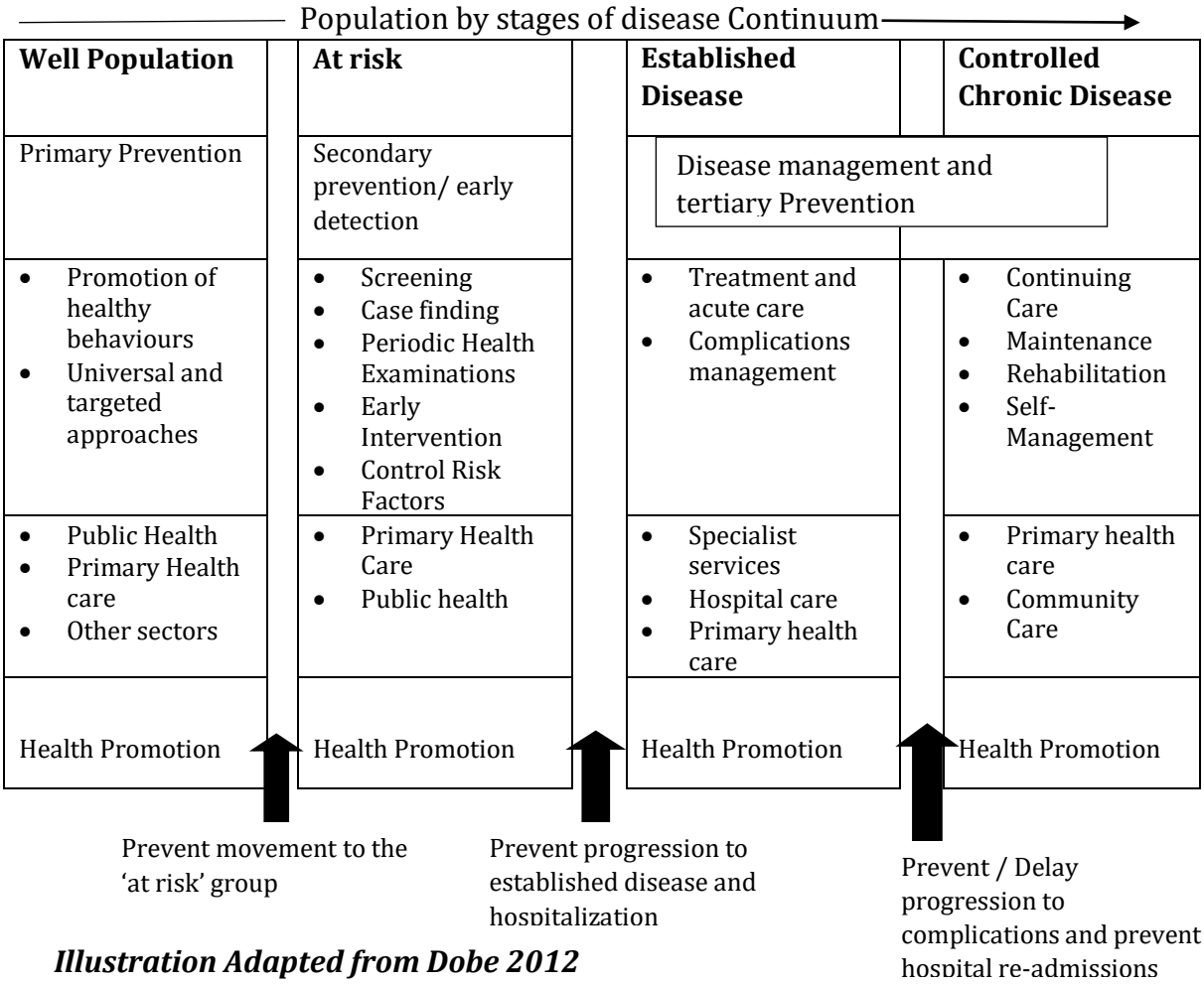


Illustration Adapted from Dobe 2012

This continuum emphasizes the critical role of HCWs in patient care. Furthermore, behavioural scientist proved that people's decisions are heavily influenced by who communicates the information (Blumenthal-Barby & Burroughs, 2012), Several studies corroborate these findings on impact of HCWs on influencing patients lifestyle practices

(Bakhshi & While, 2014; Bleich, Bennett, Gudzune, & Cooper, 2012; Frank, Dresner, Shani, & Vinker, 2013; Laws et al., 2009; Oberg & Frank, 2009; Stead et al., 2009).

1.1.4. Lifestyle Practices among Healthcare workers

Lifestyle practices characterize modifiable behaviour that affect either positively or negatively, the health of an individual. The lifestyle one adopts is based on a multitude of causes, from childhood determinants, to personal history, to influences in the cultural, physical, economic, and political environments (Sharma, Anand, Kishore, Dey, & Ingle, 2014). Thus in this section, the focus will be on lifestyle practices which impact on NCDs, these include: Smoking, alcohol consumption, diet and physical activity.

Healthcare workers have, in numerous studies, been shown to report healthier lifestyles than the general population (Frank et al., 2013; Frank & Segura, 2009; Klein, Guenther, & Ross, 2016) however, not all studies correspond with this notion, some studies show that HCWs don't consistently report healthier lifestyle with regard to smoking, physical activity, and dietary habits, when compared to other individuals (Jonsdottir et al., 2011). A South African study on obesity among HCWs indicated 75% of the study population was overweight, obese or severely obese (Skaal & Pengpid, 2011). Another study on alcohol use among healthcare workers, showed that a significant proportion of HCWs have high rates of alcohol use, with increase of consumption over time (Bakhshi & While, 2014).

A study done in Kenya on lifestyle related risk factors showed 78% of the doctors surveyed consumed alcohol frequently while only 17% engaged in moderate or physical activity (Omar, 2007). NCDs among HCWs has been attributed to; higher disposable incomes, and adoption of western culture and lifestyle (Skaal & Pengpid, 2011). Thus

successful interventions to encourage healthier lifestyle behaviours', including physical activity and diet, among HCWs, is of great importance, as HCWs serve as precursors of how the general population perceive harmful lifestyle practices (Tyzuk, 2012).

1.1.5. Healthcare workers attitudes and practice to Health promotion

Healthcare workers play a central role in health promotion and behaviour modification towards patients. It has been shown that a majority of people would most likely adopt healthy lifestyles when recommended by a HCW than any other profession (Oberg & Frank, 2009).

A cross-sectional study on smoking cessation practices among healthcare workers in Kenya indicated that 97% of the HCWs believed that it was their responsibility to assist and motivate patients, however, only 35% provided smoking cessation interventions (Gichuki, 2014). This observation is evident in numerous studies where despite overwhelming consensus on the importance of lifestyle behaviour counselling to patient, very few HCWs apply the principles of HP in their daily practice(Laws et al., 2009; Paz & Luquis, 2014; Stead et al., 2009).

Research indicates that for successful implementation of health promotion within health services, the health promotion goals need to be more compatible with the HCW's own values, norms and perceived needs (Johansson et al., 2010). For instance, the HCWs' attitudes and practice to HP has been found to be influenced by their belief and confidence in their own effectiveness in ultimately promoting lifestyle behavioural change in patient. For instance, doctors who viewed HP as not part of their responsibility did not engage in it or may suggest the role to be taken on by other health professionals (Laws et al., 2009).

CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

This chapter reviews the literature relevant to the study. It will include three main sections; the first section will review literature on the influences of lifestyle risk factors, on the global NCD epidemic as well as the resultant economic pressures on healthcare. The second section will review literature related to reorientation of HP in health services as well as lifestyle practices among HCWs. The third section will focus on health system factors that influence uptake of HP in health settings.

2.2. Influence of Lifestyle Risk Factors on Burden of Non Communicable Diseases

NCDs represent the single largest global cause of mortality in people of working age, resulting in more than 14 million NCDs attributable deaths in people between the age of 30 and 70 years of age(WHO, 2013a). Preventable lifestyle risk factors such as smoking, physical inactivity, poor dietary habit and alcohol consumption underlie most NCDs (WHO 2013). This section will therefore assess the lifestyle practices among the general population, hence form the basis for increasing health promotion awareness in healthcare settings.

Tobacco use is one of the leading causes of NCD attributable deaths, it accounts for 6 million annual deaths, globally. In addition, tobacco use represents 7% of all female and 12 % of all male deaths(WHO, 2014a). In Kenya, tobacco use accounts for 5% of all NCD attributable mortality (Ministry of Health, 2014a). Tobacco use has been associated with increased risk to cancer, hypertension, coronary heart disease and other chronic conditions (WHO, 2014a).

WHO estimates 5.9% (3.3 million) of all deaths worldwide and 5.1% of disability-adjusted life years (DALYs) were attributable to alcohol consumption. With 25% of the total deaths occurring in people between the age of 20-39 years (WHO, 2014a). Alcohol has been linked to cancers and cardiovascular diseases, with the risk gradually increasing with the volume consumed. For instance 1 standard drink (equates to 120ml of wine or 30ml of distilled spirit) is associated with an increase of 7% in the relative risk of breast cancer among females (Parry, Patra, & Rehm, 2011).

Physical inactivity has been ranked the fourth lead cause of NCD mortality globally, it accounts for 3.2 million deaths and represents approximately 2.8% of the global DALYs. Adults who lead sedentary lives have a 20-30% increased risk for NCDS, whereas 150 minutes of moderate physical activity per week reduces the risk of ischaemic heart disease by approximately 30%, the risk of diabetes by 27%, and the risk of breast and colon cancer by 21–25%. Furthermore, physical activity lowers the risk of stroke, hypertension and depression. (WHO, 2014a)

WHO estimates that 1.7 million deaths globally are attributed to low fruit and vegetable consumption(WHO, 2010). Improving dietary intake of fruit and vegetables has been shown to reduce cancers by 30 to 40%. Additionally, excess consumption of dietary salt has been associated with increased risk of hypertension and cardiovascular diseases. A reduction of salt intake to less than 5g/day has been shown to reduce risk for blood pressure, coronary heart diseases and stroke. (WHO, 2014a).

In 2014, WHO estimated that more than half a billion adults worldwide were classified as obese, in addition 2.8 million people die each year as a result of overweight and obesity(WHO, 2014a). Research shows that increase in body mass index(BMI) is

directly proportional to increased risk for coronary heart disease, stroke, hypertension and type 2 diabetes(WHO, 2015).

Raised blood pressure is estimated to cause 9.4 million deaths globally and results in 7% of the NCD disease burden. Raised blood pressure is a key cardiovascular risk factor (WHO, 2014a). Research has shown significant health benefits of lowering blood pressure using chemo-prophylactics such as Aspirin, for instance, a reduction in systolic blood pressure of 10 mmHg is linked with a 22% reduction in coronary heart disease and 41% reduction in stroke (Law, Morris, & Wald, 2009).

2.2.1. Economic Impact of Non Communicable diseases on Healthcare

Communicable diseases remain uncontrolled, and together with NCDs have resulted in a double burden of disease, which imposes a strain on the health care system as they compete for limited finances and political attention(Hall et al., 2011). In addition, health care system in LMICs lack capacity for early detection of chronic diseases resulting in a high proportion of undiagnosed cases that end up with irreversible long term complications. Therefore, imposing a huge economic burden to the individual, community and in the health care system as a whole (Nugent, 2008).

Evidence shows that NCDs pose an enormous burden on the entire economic system through long term health costs, negative effects on productivity and labour supply and decreased human capital accumulation (Gustafsson-wright, Duynhouwer, Gaag, & Schultsz, 2012). For instance, one study estimated the direct cost of treating diabetes, ranged from US dollars($)2,302 to US$3,207 per person (Kirigia, Sambo, Sambo, & Barry, 2009). With the health expenditure for NCDs in Kenya accounting for 6.2% of total health expenditure (Ministry of Health, 2015a), this indicates a significant discrepancy between the cost of treatment and available expenditure.

Additionally, WHO estimates that in the next 15 years NCDs will result in cumulative economic losses of US 7 trillion in LMICS (WHO, 2013a). Health services need to be urgently reoriented toward efficiently tackling prevention and control of NCDs as investing in health promotion results in more affordable healthcare (Dobe, 2012).

2.3. Reorientation to Health promotion in Health services

The Ottawa Charter of 1986 addressed reorientation of health services as one of the five action areas to effectively contribute to population health, the aim was to shift focus from solely focusing on curative-disease based care to a more holistic health care that incorporates the principles of health promotion(WHO, 1986).

In 2004, WHO outlined five core standards for health promoting hospitals and health services (HPH), namely: 1) "Management policy: Calls for a written organizational policy for health promotion which aims at improving health outcomes". 2) "Patient assessment: Ensures that healthcare professionals, in collaboration with patients, continuously assess needs for health promotion activities". 3) "Patient information and intervention: Declares that the organization should provide patient with adequate information on significant aspects concerning their disease or health condition and health promotion activities are integrated in all patient pathways". 4) "Promoting a healthy workplace: The management should create an enabling environment for the development of the hospital as a healthy workplace". 5. "Continuity and cooperation: Calls for a systematic approach to collaborate with other healthcare service sectors and institutions" (WHO-EURO 2004).

Health promotion strategies in healthcare settings create an opportunity for an immense public health impact as nearly 80% of the general population visits a hospital one or more times each year. Thus HCWs are at a vantage point to provide HP

counselling opportunistically when a patient visits them for any reason (Spanou et al., 2010).

Research indicates that the rural-urban comparisons of obesity-driven type 2 diabetes in LMICs are 2 to 5-fold higher prevalence in urban areas. Furthermore, the total urban population in LMICs is anticipated to double by the year 2020 resulting in 487 million individuals living in urban areas (Kaduka et al., 2012). Therefore, given the rising burden of NCDs, the medical approach of care and treatment of patient is now insufficient.

To accomplish the integration of HP in a clinical setting, HCWs will have to provide the following services: collection of patient history to determine susceptibility to NCDs, motivational counselling for behaviour change among at risk patients ; and screening tests to detect diseases early, at an asymptomatic stage for risk factors (Johansson et al., 2010).

2.3.1. Healthcare Worker's Role In Promoting Healthy Lifestyle Practices

According to a report done by WHO it estimated that 80% of cardiovascular disease, 90% of type 2 diabetes, and 30% of all cancers could be prevented if lifestyle risk factors such as tobacco cessation, healthy dietary habits, reduction in alcohol consumption, and regular exercising, were eliminated through successful adoption of healthy behaviours (WHO, 2005). HCWs have been recognized as a key group for health promotion, as they are considered to be a highly credible source of information. Moreover, empirical research indicates that lifestyle interventions delivered in a healthcare setting are more effective (Jonsdottir et al., 2011).

A growing body of evidence suggests that HCWs lifestyle behaviours not only affect their own health but also their provision of health promotion services to their patients

(Oberg & Frank, 2009). One study assessing the association between a doctor's personal health practices and those of their patient, indicated that patients whose doctors' were compliant with the preventive practices were significantly more likely to also have undergone these preventive measures, than patients with noncompliant doctors. Furthermore, doctors who were trying to improve their lifestyle habits counselled significantly more and with more confidence than HCWs not attempting to improve their behaviours (Frank et al., 2013).

One study explored the potential effect of a doctor's advice on patient responses to behavioural change intervention. The study estimated that 56% of the patients were more likely to change their lifestyle habits when they received educational material combined with doctor's advice, as compared to 24% whose change was based solely on educational material on the same habits (Kreuter, Shobhina, & Bull, 2009). With regards to physical activity, 85% of the patients were more willing to comply when a doctor prescribed a written exercise regimen (Lobelo & Quevedo, 2014). Additionally, studies show that normal weight doctors were two times more likely to provide weight-loss advice to their patients than overweight/obese doctors (Bleich et al., 2012).

A meta-analysis on effectiveness of smoking cessation by doctors, found that patients were 1.6 times more likely to quit when advised by doctors as compared to no advice (Stead et al., 2009). A similar study on personal lifestyle intervention among health care providers on their patients showed significant improvement in dietary practices of patients, with decrease in the intake of salt, red meat, solid margarine and trans-fat consumption (Shai et al., 2012).

The growing body of evidence indicate that HCWs health practices are a key, independent correlate, and may predict the manner in which they counsel and influence

their patients' behaviour on preventive measures such as smoking cessation, alcohol consumption, diet improvement, physical activity or regular health screenings (Frank et al., 2013; Klein et al., 2016; Lobelo & Quevedo, 2014).

2.3.2. Healthcare Workers Attitudes to Health promotion

A number of studies have demonstrated an overwhelming consensus from HCWs on health promotion being the responsibility of the entire healthcare system. Additionally, many support and believe that HP is ideal to promote population health and could have a lasting impact on quality of life (Bleich, Bennett, Gudzune, & Cooper, 2009; Blumenthal-Barby & Burroughs, 2012; Oberg & Frank, 2009). Interestingly, studies also indicate that many do not apply the principles of HP especially on lifestyle behaviour change, in their daily practice (Holmberg et al., 2014; Paz & Luquis, 2014). In addition research states that for successful implementation of health promotion within health services, the health promotion goals need to be more compatible with the HCW's own values, norms and perceived needs (Johansson et al., 2010). For instance, it has been shown that significant variances in providing advice to patients, was based on the doctor's competency level on a given risk factor. Taking the example of nutrition, most doctors in the study stated lack of knowledge in providing dietary advice hence were more likely to hand out written brochures to their patients and not provide any additional counsel (Ampt et al., 2009). Additionally, doctors who felt competent about their knowledge on smoking were more likely to screen their patients and provide smoking cessation counselling(Stead et al., 2009).

HCWs attitudes to HP have been found to be influenced by their belief in their own effectiveness in ultimately promoting lifestyle behavioural change in patient. For

instance doctors who viewed HP as not part of their responsibility did not engage in it or may suggest the role to be taken on by other health professionals (Laws et al., 2009).

Finally, perceptions on availability or unavailability of time to discuss about lifestyle intervention during routine consultations has been found to be associated with rates of HP counselling among HCWs. Several studies indicate a lack of time as major barrier to implementation of HP activities (Bleich et al., 2009; Holmberg et al., 2014; Johansson et al., 2010; Spanou et al., 2010; Ulla et al., 2010). One study indicated that the available consultation time was limited as doctor's spent more time discussing the acute illness that brought the patient to the hospital(Paz & Luquis, 2014). Furthermore a study focusing on German physicians revealed that HP counselling happened more frequently when patients came for wellness clinic or for a regular health check-up rather than during normal consultation visits (Holmberg et al., 2014).

2.3.3. Healthcare Workers Practice of Health Promotion

Health promotion practices are aimed at a holistic approach that focus on patient centred interventions as opposed to the current disease based care and treatment practices that only focuses on physical health (Kemppainen et al., 2013).

Evidence suggests that brief behavioural interventions which refer to lifestyle advice and counselling, delivered opportunistically by health care providers during routine consultations, can be effective when applied to a single or multiple risk factors (Spanou et al., 2010).

One of the widely adopted approach for behavioural risk factor management in health settings is the 5 A's model. Initially developed for reduction in alcohol consumption, but can be adapted for the management of all the behavioural risk factors(Harris, 2008) . The five components of the 5A's model are to:

ASK all patients about their smoking, diet, alcohol or physical activity practices

ASSESS patient's readiness to change behaviour or beliefs towards smoking, alcohol, diet or physical activity

ADVICE patients based on the perceived health risks

ASSIST patients to anticipate barriers by providing motivational counselling as well as educational material

ARRANGE follow up for the patient's willingness to change their behaviour. In addition offer group lifestyle programs or individual provider (dietician or exercise physiologist)

2.3.4. Healthcare Workers Socio-Demographic characteristics influence on their Health Promotion practice.

Age, gender and the number of years in practice among healthcare workers have been found to be significantly associated with their attitudes and practice of health promotion activities. For instance, a study on identifying gender differences on diabetic patients quality of care, found that female doctors to be more willing to devote extra time to their patients unlike male doctors (Kluger, 2014). Additionally, female HCWs were more likely, to perform self-routine screen tests for NCDs than male doctors (Dresner, Frank, Baevsky, Rotman, & Vinker, 2010).

Research has found that more years in clinical training was significantly associated with HCWs confidence to provide health promotion counselling(Vickers, Kircher, Smith, Petersen, & Rasmussen, 2007). Furthermore, evidence shows that young HCWs, aged 30 years and below, have better attitudes and are more willing to take up health promotion in their general practice(Abdullah et al., 2006). However, older doctors, aged 40 years and above, were more likely to adhere to guidelines, as well as have better lifestyle

practices such as regular exercise and healthy diets than their younger counterparts (Bazargan, Makar, Bazargan-Hejazi, Ani, & Wolf, 2009).

With reference to job cadre, research states that nurses play a crucial role in facilitating and conducting part or all of the health checks in general practice(Harris, 2008). Studies showed that doctors showed more reluctance to taking up health promotion activities as part of their daily practice when compared to other health professional cadres (Johansson, Weinehall, & Emmelin, 2009). In contrast, a cross-sectional study on participation in health promotion activities among hospital staff found nurses to have more unhealthy behaviours and they had the lowest participation in health promotion activities when compared to doctors and the other health professionals groups (Chiou, Chiang, Huang, & Chien, 2014).

2.3.5. A review of Lifestyle Practices among health care workers

Healthcare workers have been shown to be generally healthier than the general population. However, studies report that this population does not constantly report healthier lifestyle related behaviours like smoking, dietary habits and alcohol consumption, when compared to other individuals (Jonsdottir et al., 2011). This section presents a summary of what is known in relation to physical activity, nutrition, tobacco use, and alcohol consumption

1. **Physical Activity and BMI**

A study done in South Africa showed that 75 % of the healthcare workers in the stated health facility were overweight or obese, consequently one out of three HCW was stated to be suffering from diabetes and hypertension (Skaal & Pengpid, 2011). This study corresponds with a similar study done in Nigeria among HCW where 72 of the HCWs were either overweight/obese (Iwuala et al., 2015). A study on obesity among American

nurses showed, 54% of the nurses in the study were overweight/ obese, out of this 53% reported lack of motivation to change their lifestyle practices and another 76% stated that they do not advice their overweight or obese patient on lifestyle interventions (Miller, Alpert, & Cross, 2008).

Several studies have attributed HCW BMI with their sedentary nature of work (Klein et al., 2016; Lobelo & Quevedo, 2014; Ulla et al., 2010). In addition, the association between a doctor's BMI and their obesity care practices, has been show to indicate that doctors with normal BMI were more confident to provide diet and exercise counselling to their obese/ overweight patients (Bleich et al., 2012).

2. Dietary habit

In the wake of growing cases in overweight and obesity focus has shifted on the eating habits among healthcare workers. Studies suggest that HCWs do not eat or drink properly during work hours (Poulsen, Cleal, Clausen, & Andersen, 2014; Shai et al., 2012; Tyzuk, 2012). Furthermore, research has shown that there is a positive association between workplace nutrition and cognition. One study indicated that HCWs with inadequate nutrition exhibited emotional stress such as frustration, irritability; as well as slow decision making and difficulty in concentration (Tyzuk, 2012).

3. Tobacco use and Alcohol Abuse

Smoking and alcohol abuse among HCWs has been documented to be generally lower than in general population (Frank & Segura, 2009; Saeys & Cammu, 2014). However research indicated that alcohol abuse in healthcare professionals is related to various factors such as age, gender, personality traits and working long hours (Bakhshi & While, 2014).

2.4. Organizational Factors which Influence Reorientation to Health Promotion in Health Services

This section will discuss factors which have been noted to influence health care workers to take up more health promoting activities in their daily practice.

2.4.1. Organizational Support

The long-term nature of NCDs demands a comprehensive health system response that brings together a trained workforce with appropriate skills, reliable supplies of medicines, referral systems and enabling people for self-care, all over a continuous period of time (WHO 2010)

According to the WHO standard for health promoting hospital on management policy, it emphasizes on the importance of organizational support and commitment of health services to truly participate in health promotion activities (WHO-EURO, 2005). A clear and focused HP strategy has been shown to be needed for prioritization and subsequent resourcing of services that will contribute to enabling and empowering patient- focused interventions(Johnson & Baum, 2001; McHugh et al., 2010), this was evident in a Beijing study which found that organizational support, through formulation of rules and regulations, is needed for the development of HP programs within the health facility (Guo et al., 2007).

Strong leadership signifies organizational commitment and ensures a strategic and operational plan for HP activities, which then become integrated into the roles of staff throughout the organization, additionally it ensures resources are allocated accordingly (McHugh et al., 2010). In addition, strong leadership determines the extent to which different population are able to access and utilize health services(Johnson & Baum, 2001). This is crucial in ensuring availability of services to offer primary, secondary and

tertiary prevention, in order to encourage healthy behaviour, prevent readmission and maintain quality of life of patients (McHugh et al., 2010). Strong organizational structures also impact on HCWs. It has been recognized that HP programs can improve the health of staff, reduce absenteeism and improves productivity thus it is crucial to keep HCWs motivated and ensure uptake and support of HP activities (Johansson et al., 2010)

2.4.2. Workforce Development

A skilled, diverse and dynamic health workforce is crucial to establish health promotion activities within healthcare facilities(Center for disease prevention, 2009). Research has shown that HP counselling among HCWs is more effective than outsourcing to a specialist, (Oberg & Frank, 2009). For HCWs to effectively motivate and counsel their patients on lifestyle modification, they need to believe in their abilities to do so, based on intrinsic factors such as knowledge, skills, experience and their own lifestyle habits. Self-confidence has been shown to determine the type of intervention offered to patients.(Laws et al., 2008).

An association between a doctors' participation in HP training and their reported level of engagement in lifestyle counselling was established in a study on smoking cessation practices among doctors. The study found that doctors who had received training on cessation interventions reported higher levels of patient engagement such as education material, follow- up support and advising on pharma-therapeutic interventions, than untrained doctors (Stead et al., 2009).

Strong organizational structures ensure proper distribution of resources. It has been recognized that HP programs can improve the health of staff, reduce absenteeism and improves productivity thus it is crucial to keep staff motivated and ensure uptake and

support of HP activities (Khowaja, Mistry, Agha, & Karmaliani, 2010).The use of incentives both fiscal and non-fiscal have increasingly been shown to affect the delivery of healthcare and motivate staff (Kingma, 2013).

Healthcare workers play a focal role in health systems as the gatekeepers for preventive and curative services, thus any influence exerted on their function has significant consequences for the entire health system(Kingma, 2013). A study on increasing health promotion practices among healthcare workers, found that economic incentives such as provide gift cards or money, have been efficient approximately 73% of the time. Incentives have been shown to produce finite changes, however it is not clear what size incentive is needed to yield a sustained effect (Anderko et al., 2012). A study across several European countries found that, on average, 40% of doctors gave lack of reimbursement/ Incentives as a reason for not undertaking health promotion(Stead et al., 2009). Thus it is crucial for healthcare workers to be well skilled and motivated to ensure uptake and support of health promotion activities.

2.5. Conceptual Framework

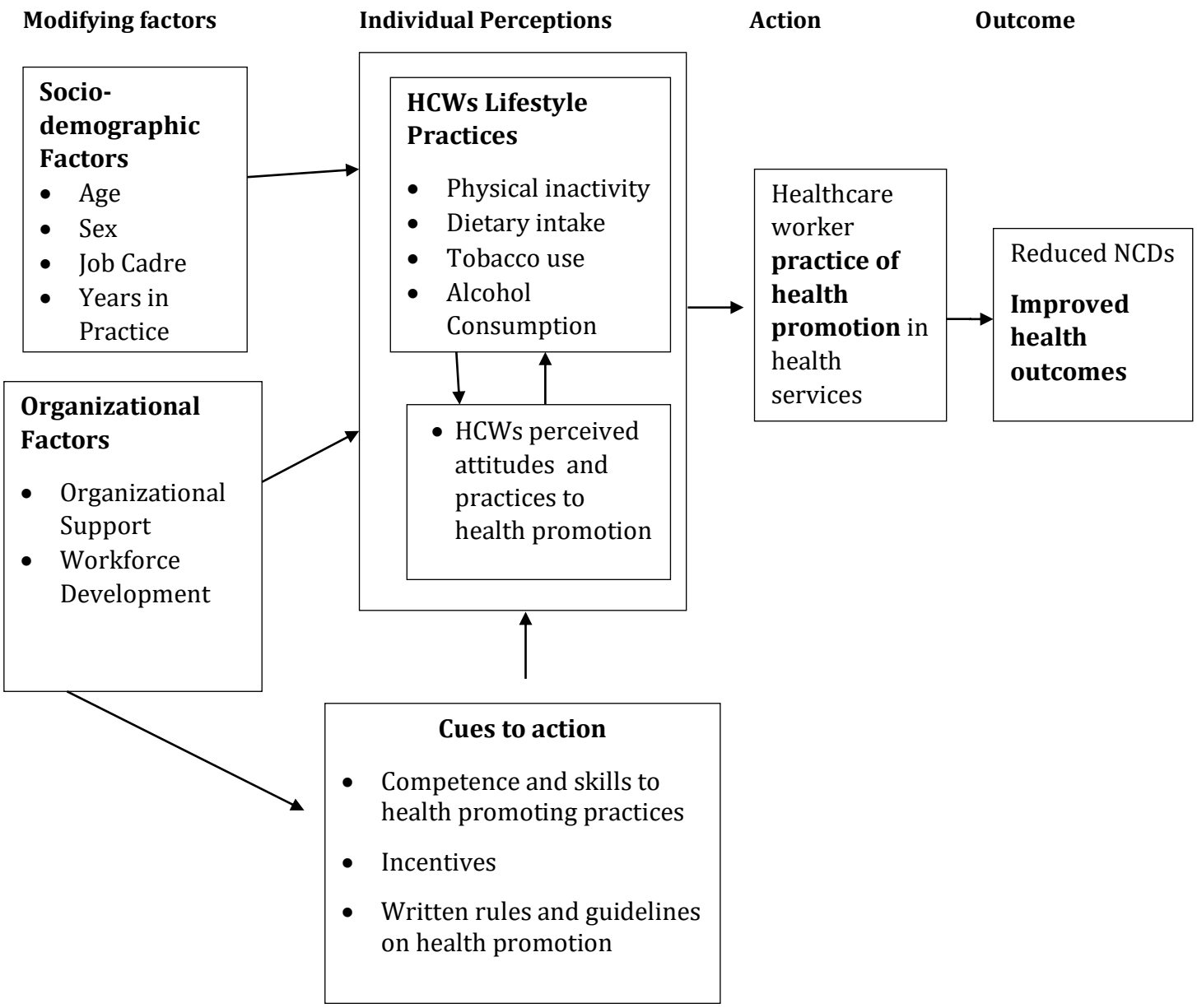
Using the health promotion model (HPM) by Nola Pender (2011) will be useful in identifying the background factors that influence health behaviours. The conceptual framework illustrated in figure 2 provides variables that will influence the likelihood of HCWs incorporating health promotion practices for the prevention and control of NCDs in health services.

The first variable, understating the modifying factors which include socio demographic status, where studies show that HCWs aged 30 or below and being female, were more willing to undertake preventive medicine in their general practice (Abdullah et al., 2006). Situational factors include; organizational factors, these are external environmental influences which can increase or decrease commitment of HCWs in taking up HP activities. These factors include stewardship, workforce development and service delivery.

The second variable, individual perceptions, as earlier stated HCW's own health practices heavily influence their health promotion practices towards their patients (Frank et al., 2013). Therefore, understating HCWs current lifestyle practices will be crucial as it will demonstrate personal commitment towards a given behaviour and how it will facilitate or impede health promotion counselling towards their patients.

The third variable, perceived belief and attitudes towards health promotion, it's been noted that perceived competence or self-efficacy to execute a given behaviour increases the likelihood of commitment to action (Pender, 2011). The cues to action will activate the readiness and stimulate overt behaviour among HCWs to take up health promotion in their medical practice.

Figure 2: Conceptual framework illustrating factors influencing the practice of health promotion among healthcare workers in Health services.



Conceptual framework model adapted from Nola Pender (2011)

CHAPTER THREE: STATEMENT OF THE PROBLEM

3.1. Statement of Problem

More than 80% of all NCDs mortality occur in LMICs, where NCD attributable mortality could be prevented through adoption and maintenance of healthier lifestyle practices, such as, tobacco cessation, healthy dietary habits, and reduction in alcohol consumption (WHO, 2014a). Research has shown that adoption of healthy practices could prevent 80% of cardiovascular disease, 90% of type 2 diabetes, and 30% of all cancers (WHO, 2005).

The healthcare sector faces a strain on delivery of services due to an increasing burden of NCDs for instance, people living with diabetes require at least two to three times more healthcare resources than most people(Hall et al., 2011). In Kenya, NCDs collectively represent 50 to 70% of all hospital in patient and up to half of all out patient cases (Ministry of Health, 2014b). This was attributed to many patients presenting at hospitals when NCDs have reached acute care or complication stage, it's been estimated that two thirds of population with diabetes are not aware of their condition (Ministry of Public Health and Sanitation, 2010). Therefore, if incidences of NCDS can be decreased by promotion of health, the present cost of services will either reduce, or at least the degree of increase will diminish. Consequently, investing in health promotion is likely to lead to improved health for patients and more affordable healthcare overall (Dobe, 2012; Hall et al., 2011)

The study aimed to determine the extent to which HCWs engage in healthy lifestyle practices as well as explore the personal views and perspective of HCWs attitudes and practices in relation to incorporating health promotion activities in their daily practice.

3.2. Study Justification

The rising burden of non-communicable diseases poses a great challenge to health system in LMICS. Furthermore, WHO estimates in the next 15 years NCDs will result in cumulative economic losses of US$ 7 trillion in LMICS (WHO, 2013a). Health services therefore, need to urgently reorient towards efficiently tackling prevention and control of NCDs as investing in health promotion results in more affordable healthcare (Dobe, 2012).

Kenyatta National Hospital (KNH) is the one of two teaching and referral hospitals in the country and it is at the apex of the national healthcare delivery system (Republic of Kenya, 2012). Hence, it is expected to set standards in healthcare that other health institutions may emulate. Furthermore, healthcare workers are often deemed to be a credible source of health information thus, they can play an important role in increasing awareness among patients regarding lifestyle changes (Frank et al., 2013; Jonsdottir et al., 2011)Therefore undertaking the study at KNH provided an insight of the current attitudes and practices to health promotion for the prevention and management of NCDs.

In an effort to halt and reverse the increasing burden of NCDs, the Government of Kenya, through the Ministry of Health launched a five year national strategy for the prevention and control of NCDs. Some of the strategic interventions include: to promote healthy lifestyles and implement interventions to reduce modifiable risk factors (Ministry of Health, 2014c). The study findings not only complement this efforts by the Government but also denote the cost effective strategies aimed at the control and prevention of NCDS through building support for reorientation of health promotion in health services.

3.3. Research Questions

1. What is the attitude of healthcare workers towards health promotion for non-communicable diseases at Kenyatta National Hospital?
2. What is the level of practice of health promotion for non-communicable diseases by healthcare workers at Kenyatta National Hospital?

3.4. Broad Objective

To determine the attitudes and practice of health promotion for non-communicable diseases among healthcare workers at Kenyatta National Hospital.

3.4.1. Specific Objectives

1. To describe healthcare workers' lifestyle practices at Kenyatta National Hospital
2. To assess attitudes to health promotion for NCDs among healthcare workers at Kenyatta National Hospital
3. To determine level of practice of health promotion for NCDs by healthcare workers at Kenyatta National Hospital
4. To identify the influence of organizational factors on health promotion activities at Kenyatta National Hospital

CHAPTER FOUR: METHODOLOGY

4.1. Introduction

This chapter presents a description of how the study was carried out. It describes the study design, sampling procedure, data collection process and data analysis techniques. In addition, it outlines the ethical considerations which applied to the study.

4.2. Study Design

A cross-sectional study was conducted to describe and explore the perspective of healthcare workers attitudes and practice of health promotion for non-communicable diseases at Kenyatta National Hospital (KNH). The study employed both qualitative and quantitative methods.

4.3. Study Area

The study was conducted at Kenyatta National Hospital, it is currently the largest hospital in the country and its role as national referral and teaching hospital places it at the apex of the national healthcare delivery system(Republic of Kenya, 2012). Due to its high-ranking position, the Hospital plays a vital role in setting national healthcare service delivery standards.

The KNH's organizational structure, is headed by a chief executive officer, who governs three operational directorates namely: clinical services, nursing services and administrative services. Each directorate is divided into divisions. Of relevance to this study, was the directorate of clinical service, where the study was based at the division of surgical services and medical services as shown on Appendix 1 (Kenyatta National Hospital, 2015).

The study focused on the Department of Reproductive Health/Obstetrics and Gynaecology, and Medical, each representing the division of surgical services and medical services respectively. The selection of these two department was done purposively based on the availability of out-patient clinics. The department of reproductive health consists of three maternity wards, an antenatal and post-natal clinic, family planning clinic and ward 1D for acute gynaecological care. While the Medical department consists of: eight inpatient wards and six outpatient clinics.

4.4. Study Population

The target population for this study were healthcare workers from two health cadres, namely doctors, and nurses within the Departments of Medicine and Reproductive Health at Kenyatta National Hospital.

4.5. Sampling

4.5.1. Sample Size Determination

The desired sample size was calculated using the Fisher's statistical formula (Daniel 2009) for determining sample size for a cross-sectional study.

$$n_0 = \frac{z^2 p(1-p)}{d^2}$$

Where

n_0= desired sample size
Z= critical value with 95% confidence interval, i.e. 1.96
P= Prevalence of outcome variable (practice of health promotion for NCDS).
The prevalence rates used to calculate the sample size was derived from a study carried out by (Gichuki, 2014) which found the prevalence to be 35%

d= margin of error i.e. 0.05

Therefore, the calculated sample size was:

$$n_0 = \frac{1.96^2 \times 0.35 \times 0.65}{0.05^2} = 349.586 \approx 350$$

Using finite correction for prevalence studies the sample size was calculated as follows:

$$n = \frac{1}{\frac{1}{n_0} + \frac{1}{N}}$$

Where

n= is the final sample size,

n_0= is the initial sample size

N= is the finite population size

$$n = \frac{1}{\frac{1}{350} + \frac{1}{393}} = 185.13 \approx \mathbf{185}$$

4.5.2. Selection of Study Participants

Stratified sampling procedure was used to enlist participants for the study. This was done to avoid bias in the selection process by ensuring that the study participants are equally represented from the medical and reproductive health departments respectively.

Healthcare workers were stratified per their representative department. Proportionate allocation based on number of HCWs in each unit of their respective department was used to determine the number of HCWs to be sampled from each department (Table 1). Healthcare workers from each stratum were then selected using simple random sampling technique.

Table 1: Selection of Study Participants

	Medical Department Actual number (Sample number)		**Reproductive health** Actual number (Sample number)	
Doctors	24 (12)		25(12)	
Nurses per ward/unit				
	7A	20 (10)	**1A**	19(8)
	7B	28(14)	**1B**	18(7)
	7C	18(8)	**1D**	26(11)
	7D	20(10)	**GFA**	18(7)
	8A	20(10)	**GFB**	22(10)
	8B	20(10)	**Labour Ward**	44(18)
	8C	21(10)	**Clinic 18**	9(4)
	8D	20(10)	**Clinic 66**	12(5)
	staff clinic	7(3)		
	Medical Out-patient Clinic	16(6)		
	TOTAL	**190(91)**	**TOTAL**	**168(70)**

Retrieved from: Departments of Reproductive health and Medicine at KNH

4.5.3. Selection of Participants for Qualitative Method

The study participants were selected purposively based on their age, gender and health cadre. The sampling of respondents for interviews were stopped when theoretical saturation of a given concept is achieved (Sargeant, 2012). A total of 12 respondents were approached to be interviewed.

4.5.4. Inclusion criteria

The criteria for eligibility to participate in the study included:

1. Healthcare workers in the departments of reproductive health and medical at Kenyatta National Hospital who gave consent to take part in the study.
2. Healthcare workers employed full time in departments of reproductive health and medicine at Kenyatta National Hospital

4.5.5. Exclusion criteria

1. Healthcare workers not within the two cadres
2. Healthcare workers not involved in providing patient care, that is, are in administrative positions.

4.6. Ethical Considerations

Permission to conduct the study was obtained from Kenyatta National Hospital and University of Nairobi Ethics and Research Committee (KNH-UON-ERC) (Appendix 2). Further approval was sought from the KNH research and programs department, this was to allow the research to be conducted at the hospital. Additional approval was sought in each department where the study was conducted. Respondents' informed written consent was sought out individually (Appendix 3, and 4). Confidentiality was maintained for the information given as no names or personal identifications were used. Data collected was treated with confidentiality through use of codes in the questionnaires.

4.7. Data Collection

4.7.1. Pilot study

A pilot study to ensure validity and identify modifications needed on the research tools before commencement of the actual study, was conducted for two days at the Accident and Emergency department at KNH and consisted of 10 randomly selected participants consisting of five nurses and five medical officers, completed the questionnaire. The respondents were then interviewed individually regarding the clarity and sensitivity of items in the questionnaire, as well as the length of the questionnaire. Revisions of the questionnaire were made to improve on the clarity of the questions.

4.7.2. Quantitative Data Collection

Data was collected for two months, from 1st June to 29th July 2016, through self-administered questionnaires which were distributed to the study respondents at their respective ward/ units (Appendix 5). Different distribution strategies were used, in order to increase the likelihood of participation. Selected participants were approached for recruitment by the principal investigator at their respective wards/ units after obtaining verbal clearance from the in charges. In some wards/units the in-charges were responsible for the distribution of the questionnaires to the selected participants in their respective ward/unit department. The questionnaires were collected from the respondents at their work station at a time convenient to them or were left with the in-charges of each ward/unit.

4.7.3. Qualitative Data Collection

Data was collected through in-depth interviews (Appendix 6). Selected participants were briefed on the study and consent forms were provided to the respondents before carrying out the interview. Upon receipt of the signed consent, the in-depth interview

was conducted on the selected health care workers using an open ended interview guide (Appendix 4). The sessions were conducted privately at a time convenient with the respondent and were audio- recorded, except on two occasions where the respondents declined to be voice recorded, thus comprehensive notes were written down to obtain the information. The interviews were conducted in English and lasted between 15- 30 minutes.

4.8. Data Management

At the end of each day during the data collection period, questionnaires were checked for completeness, clarity and consistency. In addition, each verified questionnaire was sequentially coded according to date of collection for ease of storage and to ensure anonymity.

Qualitative data was transcribed on MS Word document, and the audio recordings were downloaded and stored online on a computer folder.

4.9. Data Analysis

4.9.1. Quantitative Data Analysis

To provide an initial description of the study population, the data was tabulated using frequency and percent distributions for the predictor variables; this included socio-demographic characteristics and behavioural practices.

To determine the general attitude towards health promotion, points were awarded for the responses where a strong agreement with a positively worded constructs awarded a weight of 5 points while strong disagreement with a positively worded constructs awarded 1 point. These scores were then summed up and graded such that a score less than or equal to 10 points were deemed to be negative attitude, scores between 11 and 20 were deemed neutral, while scores more than 21 were deemed positive attitude.

Subsequently, Pearson's Chi- square (χ^2) test was used to establish a statistical significance between a HCWs attitudes to health promotion and their socio-demographic characteristics.

To determine the level of practice to health promotion, scores were awarded to the activities performed by HCWs to engage and motivate patients to take up healthy lifestyles. This was done such that, healthcare workers who inquired about lifestyle practices every time they saw a patient were awarded 3 points, HCWs who inquired about lifestyle practices on patients who were 'at risk' were awarded 2 points, HCWs who inquired about lifestyle practices from patients with chronic illness were awarded 1 point while health workers who never sought information from patients were not awarded any point. These resultant points were then summed up for information on tobacco use, alcohol consumption, dietary habits and physical activity. The sum were then ranked such that health workers scoring 4 points and below were deemed to have poor health promotion practices, health workers scoring between 5 and 7 points were deemed to have average health promotion practices while health workers scoring more than 8 points were deemed to have good health promotion practices. Subsequently, Pearson's Chi- square (χ^2) test was used to establish a statistical significance between a HCWs practice of health promotion and their socio-demographic characteristics, in addition, chi- square was used to establish statistical significance between NCD competency of healthcare workers and their frequency of inquiry of lifestyle risk factors to their patients the HCW competency . The level of significance was set at 95%

Lastly, to establish if a healthcare worker's attitude was associated with their practice of health promotion, bivariate analysis was carried using SPSS version20.

4.9.2. Qualitative Data Analysis

The audio- recorded interviews were transcribed by the principal investigator onto a Microsoft word document. Coding was done manually to identify running themes. Texts that were indicators of themes corresponding to the research objectives were highlighted within the coded transcripts. A narrative approach was used to describe the findings of the study so as to better elaborate the views and experiences of the healthcare workers.

CHAPTER FIVE: STUDY RESULTS

5.1. Introduction

The study targeted 185 healthcare workers however, the number of questionnaires returned were 166. Of the returned questionnaires, 10 were incomplete hence were excluded from the study resulting in 156 completed questionnaires, yielding a response rate of 84.3%.

5.2. Socio- Demographic characteristics of the respondents

Of the 156 respondents, the majority were female 108 (69.2%) thus, giving a male to female ratio of 2:3. Three out of five respondents were married at the time of the research. The respondents' age ranged from 25 to 60 years (median age 36). The least experienced respondent had practiced for only one year while the most experienced one for 35 years thus the median number of years in practice was 12 (Table 2).

Table 2: Socio- Demographic Characteristics of study participants

Variable	Profession					
	Medical officer (n = 20)		Nurse (n = 136)		Total (n = 156)	
	F*	%*	F	%	F	%
Gender						
Female	13	65	95	69.9	108	69.2
Male	7	35	41	30.1	48	30.8
Marital Status						
Not yet married	11	55	43	31.6	54	34.6
Currently married	9	45	85	62.5	94	60.3
Separated/divorce	0	0	4	2.9	4	2.6
Widowed	0	0	4	2.9	4	2.6
Age in years						
<=25	0	0	3	2.2	3	1.9
26 - 35	16	80	71	52.2	87	55.8
36 - 45	3	15	37	27.2	40	25.6
46 - 55	1	5	21	15.4	22	14.1
> 55	0	0	4	2.9	4	2.6
Years of experience						
<= 3	5	25	17	12.5	22	14.1
4 - 7	8	40	40	29.4	48	30.8
8 - 10	5	25	15	11	20	12.8
> 10	2	10	64	47.1	66	42.3

*F= Frequency, %= percentages

5.3. Healthcare Workers' Lifestyle Practices

5.3.1. Tobacco Use

To assess the smoking practices among the respondents, the study found a majority (91%) had never smoked at the time of the research (Table3). Of those who were currently smoking 2(33.3%) smoked daily, 2(33.3%) smoked 2-3 times a week and 2(33.3%) smoked rarely. Only 1(16.6%) of current smokers had tried to quit smoking during the past 12 months.

Table 3: Tobacco Use among Respondents

n=156	Medical officer		Nurse		Total	
	F	%	F	%	F	%
Smoking experience						
current smoker	0	0	6	4.4	6	3.8
Ex-smoker	2	10	6	4.4	8	5.1
Never smoked	18	90	124	91.2	142	91.0

Of the respondents who were non-smokers, inclusive of ex- smokers, a majority 101(67.3%) of them had been exposed to secondary smoke within the past 30 days.

5.3.2. Alcohol Consumption

An assessment of alcohol consumption revealed that slightly over a half of the respondents, 85(54.5%) had never consumed alcohol while 48(30.8%) consumed alcohol at the time of the research. Over half, of those who were currently consuming alcohol 42(59.2%) consumed it occasionally and took an average of 3 bottles on this occasion. However, only 3(4.2%) of the current alcohol consumers felt like they needed a drink in the morning to get themselves going for the day. (Table 4)

Table 4: **Alcohol consumption among study participants**

Variable	Profession					
	Medical officer		Nurse		Total n=156	
	F	%	F	%	F	%
Alcohol consumption						
Currently consuming	7	35.0	41	30.1	48	30.8
Quit consuming	2	10.0	21	15.4	23	14.7
Never consumed	11	55.0	74	54.4	85	54.5
Frequency of having at least one standard alcoholic drink during the past 12 months						
Daily	2	22.2	9	14.5	11	15.5
Weekly	0	0.0	7	11.3	7	9.9
1-3 times a month	3	33.3	8	12.9	11	15.5
Occasionally	4	44.4	38	61.3	42	59.2

5.3.3. Dietary Intake

The study sought to reveal the dietary habit of study participants through an assessment of their fruit and vegetable intake, dietary salt intake and meals not prepared at home.

Study participants were queried on their fruit and vegetable consumption in a typical week. The study showed on average the participants took fruits 4 times a week composing averagely of 3 servings, where one serving consists of one whole fruit, or ¼ cup of fruit juice. With regards to vegetable consumption, they averagely took vegetables five times a week in 4 servings, where one serving consists of 3 tablespoons of cooked vegetables (Table 5).

Table 5: Average number of fruits and vegetables consumed by study participants

Variables	Average number (n=156)
No. of times Fruits taken in a week	4
No. of times vegetables taken in a week	5
Serving of fruit	3
Serving of Vegetables	4

A look at the salt intake and consumptions of meal not prepared at home by study respondents showed that, 27.5% of respondents' always and often added salt to their food while, 11.5 % often ate processed food high in salt. Over half of the medical officers ate on a daily or almost daily basis meals that were not prepared at home compared to only slightly less than a third of nurses who ate meals not prepared at home (Table 6).

Table 6: Dietary salt intake and consumption of meals not prepared at home by study respondents

Categories	Profession					
	Medical officer		Nurse		Total	
	F	%	F	%	F	%
Add salt or a salty sauce to food right before eating or during eating						
Always	1	5	17	12.5	18	11.5
Often	10	50	15	11.0	25	16.0
Sometimes	6	30	46	33.8	52	33.3
Rarely	2	10	33	24.3	35	22.4
Never	1	5	25	18.4	26	16.7
Eat processed food high in salt						
Always	0	0	4	2.9	4	2.6
Often	6	30	12	8.8	18	11.5
Sometimes	12	60	44	32.4	56	35.9
Rarely	2	10	60	44.1	62	39.7
Never	0	0	16	11.8	16	10.3
Consumption of meals not prepared at a home						
Daily or almost daily	11	55	37	27.2	48	30.8
Weekly	8	40	26	19.1	34	21.8
Monthly	0	0	33	24.3	33	21.2
Less than a month	1	5	35	25.7	36	23.1
Never	0	0	5	3.7	5	3.2

5.3.4. Physical Activity

An assessment of the physical activities among the study respondents showed that slightly over half, (56%) of the respondents stated that their work involved mostly sitting or standing with walking for no more than 10 minutes at a time. In addition, 87(55.8%) participated in some form of physical activity during the past 30 days. The most common form of physical activity undertaken included; brisk walking, 61(66.3%) while the least common physical activity was aerobics, 10(10.9%). On average, the respondents took 44 minutes to exercise the physical activity of their choice (Table 7).

Table 7: Physical activity among study participants

	Medical officer		**Nurse**		**Total (n=156)**	
Variable	F	%	F	%	F	%
Work mostly involve sitting or standing						
Yes	11	55.0	77	56.6	88	56.4
No	9	45.0	59	43.4	68	43.6
Participation in any physical activity during the past 30 days						
Yes	11	55.0	76	55.9	87	55.8
No	9	45.0	60	44.1	69	44.2
Type of physical activity undertaken						
Brisk walking	7	63.6	54	66.7	61	66.3
Running	5	45.5	20	24.7	25	27.2
Aerobics	2	18.2	8	9.9	10	10.9
Gym sessions	0	0.0	13	16.0	13	14.1

In addition, the study sought to reveal the self-perception about body weight among the study respondents. The study revealed, a majority 110(70.5%) of the respondents

considered their weight to be normal while, 40(25.7%) considered their weight as either obese or overweight (Table 8).

Table 8: Weight Perceptions among study respondents

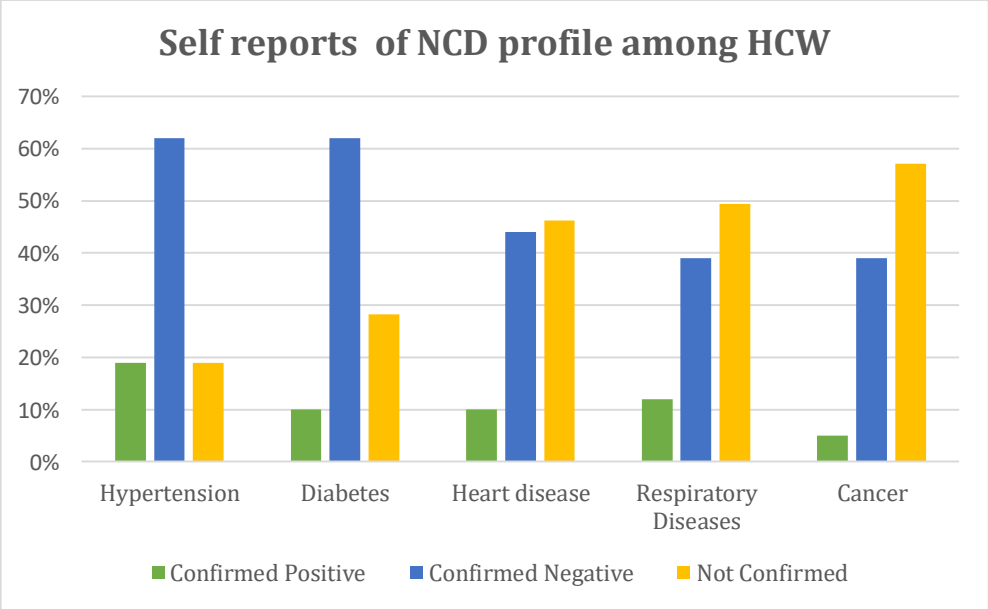
Variable	Profession					
	Medical officer		Nurse		Total	
	F	%	F	%	F	%
Underweight	1	5	5	3.7	6	3.8
Normal weight	14	70	96	70.6	110	70.5
Overweight	5	25	31	22.8	36	23.1
Obese	0	0	4	2.9	4	2.6

5.3.5. Health screening practices among healthcare workers

The study sought to identify the diseases and health conditions currently affecting healthcare workers through self-reporting by the respondents in addition, frequency of going for medical check-up was assessed.

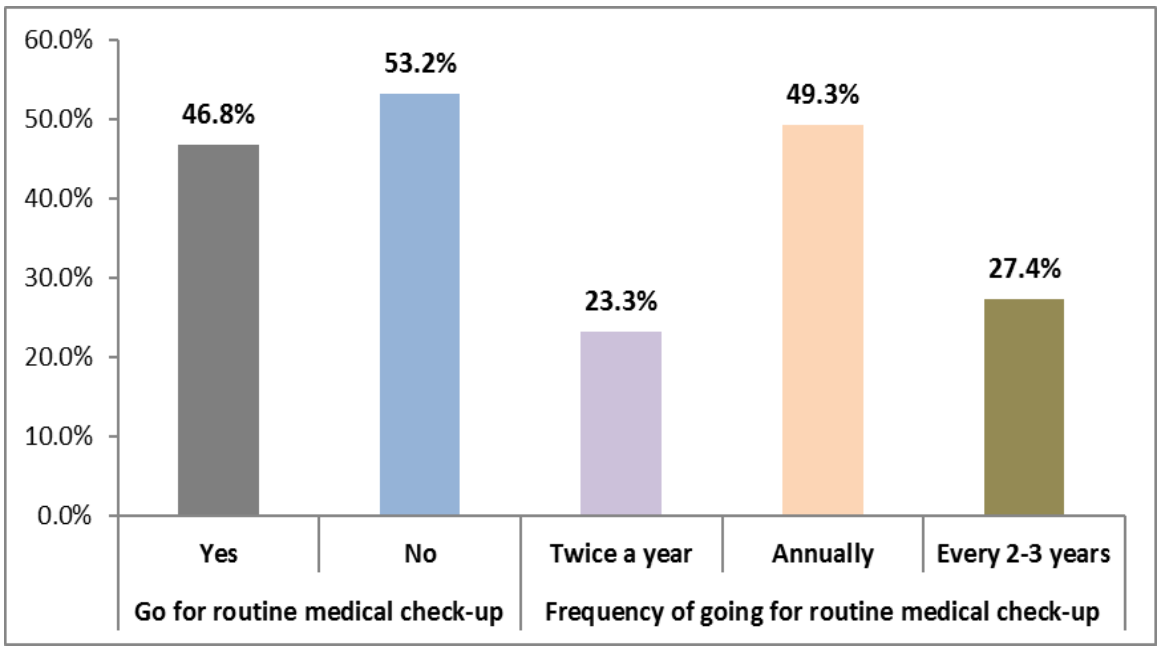
The findings revealed that, three fifths of the respondents reported that they were not hypertensive (62.2%) or diabetic (61.5%). However, slightly over half of the respondents have never tested for cancer (57.1%), also less than half (46.2) did not test for heart diseases (Fig 3).

Figure 3: Self- reported non-communicable disease profile among study participants



Seventy three (46.8%) of the respondents were going for check-ups. Among these respondents nearly half 36(49.3%) were annually attending medical check-ups while slightly over a quarter 20(27.4%) were attending medical check-ups every 2 to 3 years (Figure 4).

Figure 4: Self-reported health Check-up rates among study participants



5.3.5.1. Qualitative Findings of Screening Practices among Healthcare Workers

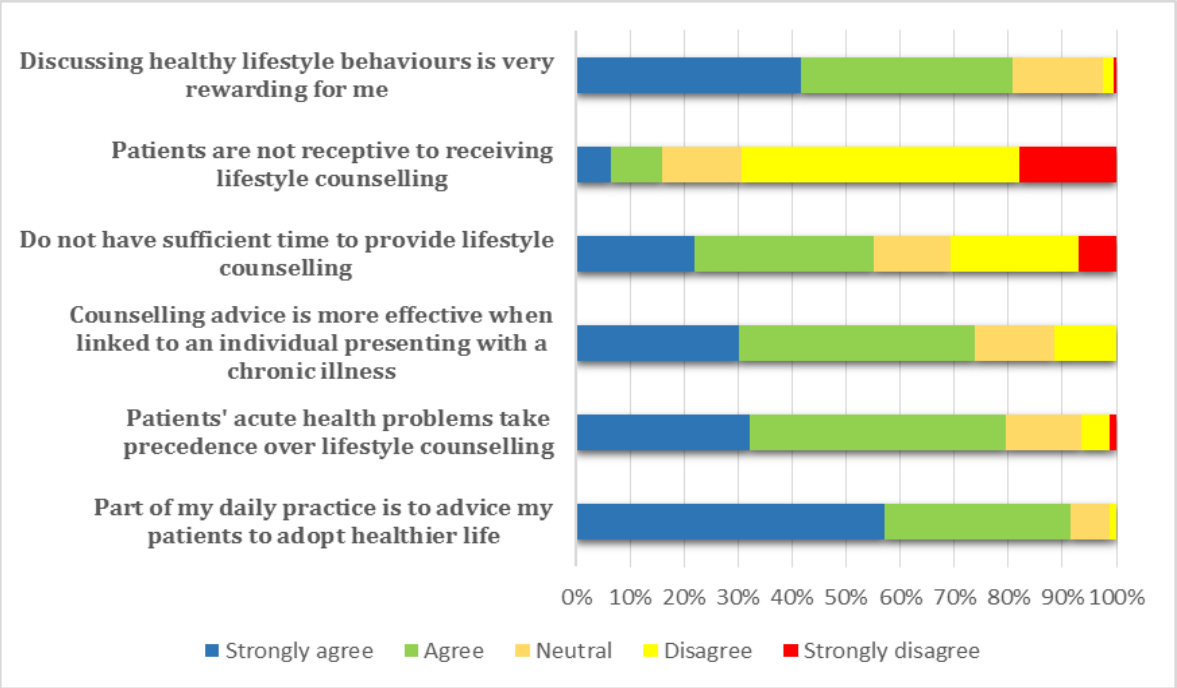
The interviews revealed that health care workers seldom went for the medical check-ups despite it being available and provided for by the hospital. One of the responses is shown below;

> *HCW 5: "We are actually encouraged by Kenyatta to have a medical check-up every year and it's free but what do we do? We are supported because medical care is free. If I go for exercises it's free here in Kenyatta in our physiotherapy department, it is free. The only thing they don't pay is gym. Do you know we are entitled to do a pap smear? But us (staff)… the fear! Even Pap smear people don't go. We are diagnosed when you are in third stage"*

5.4. Healthcare Workers' Attitudes to Health Promotion for NCDS

The general attitude of healthcare workers on health promotion was assessed. Over half (57.1%) of the respondents strongly agreed that it was a part of their daily practice to offer lifestyle counselling to their patients. However, a third (33.3%) of the respondents agreed that they did not have sufficient time to do so. Furthermore, 65(41.7%) of the respondents strongly agreed that discussing healthy lifestyle behaviours with their patients was very rewarding for them. Finally, a majority of the respondents (78.8%), indicated that all health workers were responsible for providing health promotion information to patients (Figure 5).

Figure 5: Healthcare Workers' Attitude to Health Promotion



In order to provide an overview of the attitude of healthcare workers to health promotion, scores were provided. The results indicated that majority 113(72.4%) of the health workers had positive attitude while 43(27.6%) had neutral attitude and none had negative attitude towards health promotion.

5.4.1. Relationship between Attitudes to Health Promotion and Socio-demographic Characteristics

To determine the association between various sociodemographic characteristics and the respondents' attitudes to health promotion, bivariate analysis was carried out. The results revealed that the respondents' gender, profession, marital status, age and years of experience were not statistically significant (Table 9).

Table 9: Relationship between attitudes to health promotion and socio-demographic factors

Predictor variables	Health promotion attitude		Chi-square Test (χ^2)	P- Value
	Neutral n (%)	Positive n (%)		
Gender				
Female	30(27.8)	78(72.2)	3.662	0.074
Male	13(27.1)	35(72.9)		
Profession				
Medical officer	5(25)	15(75)	0.461	0.622
Nurse	38(27.9)	98(72.1)		
Marital Status				
Not yet married	15(27.8)	39(72.2)	0.667	0.982
Currently married	24(25.5)	70(74.5)		
Separated/divorced/ Widowed	4(50)	4(50)		
Age categories				
<=35	23(25.6)	67(74.4)	5.040	
36 - 45	14(35)	26(65)		0.261
46 - 55	5(22.7)	17(77.3)		
> 55	1(25)	3(75)		
Years of experience				
<= 3	5(22.7)	17(77.3)	2.887	
4 - 7	9(18.8)	39(81.3)		0.411
8 - 10	8(40)	12(60)		
> 10	21(31.8)	45(68.2)		

5.5. Healthcare workers' Practice of Health Promotion

The study assessed the healthcare workers approach to ask and assess a patient's health practices, as well as how they assist their patients adopt healthy lifestyles, in addition to arranging follow up for at risk patients.

5.5.1. Level of practice of health promotion among healthcare workers

In an effort to assess practice the study found that 68(43.6%) of the respondents inquired about tobacco use and 70(44.9%) inquired about alcohol consumption, every time they saw a patient. However, 27(17.3%) of the health workers never inquired about patient's physical activity. (Table 10).

Table 10: HCWs response on inquiring about a patient's lifestyle behaviours

Variable **n=156**	**Every time I see a patient** **n (%)**	**To patients who are 'at risk'** **n (%)**	**If the patient presents with a chronic illness** **n (%)**	**Never** **n (%)**
Tobacco use	68(43.6)	64(41.0)	19(12.2)	5(3.2)
Alcohol Consumption	70(44.9)	54(34.6)	26(16.7)	6(3.8)
Dietary Habits	46(29.5)	71(45.5)	31(19.9)	8(5.1)
Physical Activity	33(21.2)	59(37.8)	37(23.7)	27(17.3)

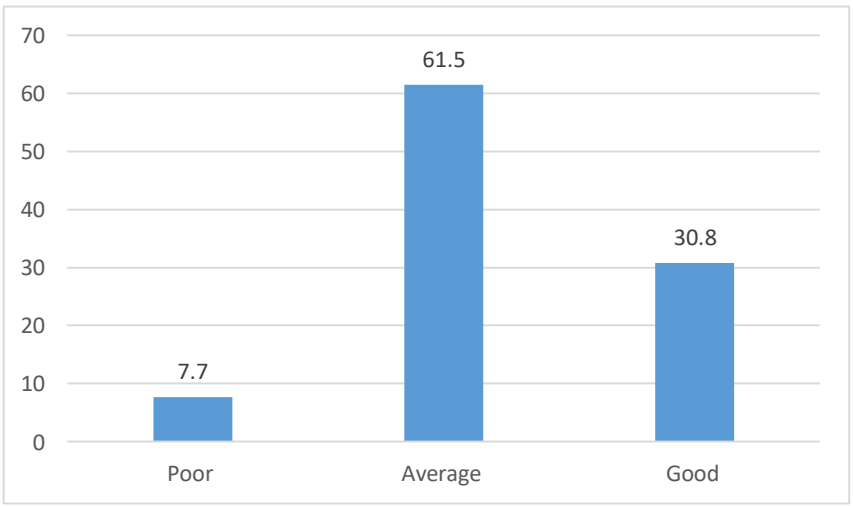
When respondents were asked in the in-depth interviews about counselling a patient who have not presented with the disease 6 out of 9 respondents stated that they focused more on secondary prevention rather than primary prevention.

> *HCW 4: "With that we are not very active, actually we concentrate on the secondary and not majoring on the primary because sometimes a patient will come here with probably hypertension, we are busy treating the hypertension and maybe we are not going to the nitty gritty like stress levels . We try bring the blood pressure without going into the root causes."*
>
> *HCW7: "You know I'm not quite sure that we go out of our way really to do health promotion. It's usually the patients who initiate wanting the information. We (*referring to staff*) educate ourselves, we do not go out of our way to educate patients because we believe that the way we treat our patients is, "How would you like me to help you?"... So a lot of them will tell you this is what I have, I have pain, I*

have no money, I have… so usually we make a list of what they want and then we try and address those problems".

In an effort to determine the general health promotion practices, scores were awarded based on the frequency of a healthcare worker to inquire and assess patients in order to motivate and encourage them to take up healthy life styles. . The results indicated that about three in five of the health workers had average health promotion practices. (Figure 6)

Figure 6: Level of practice to health promotion among study respondents



5.5.2. Follow up practices upon inquiring on patients' lifestyle practices

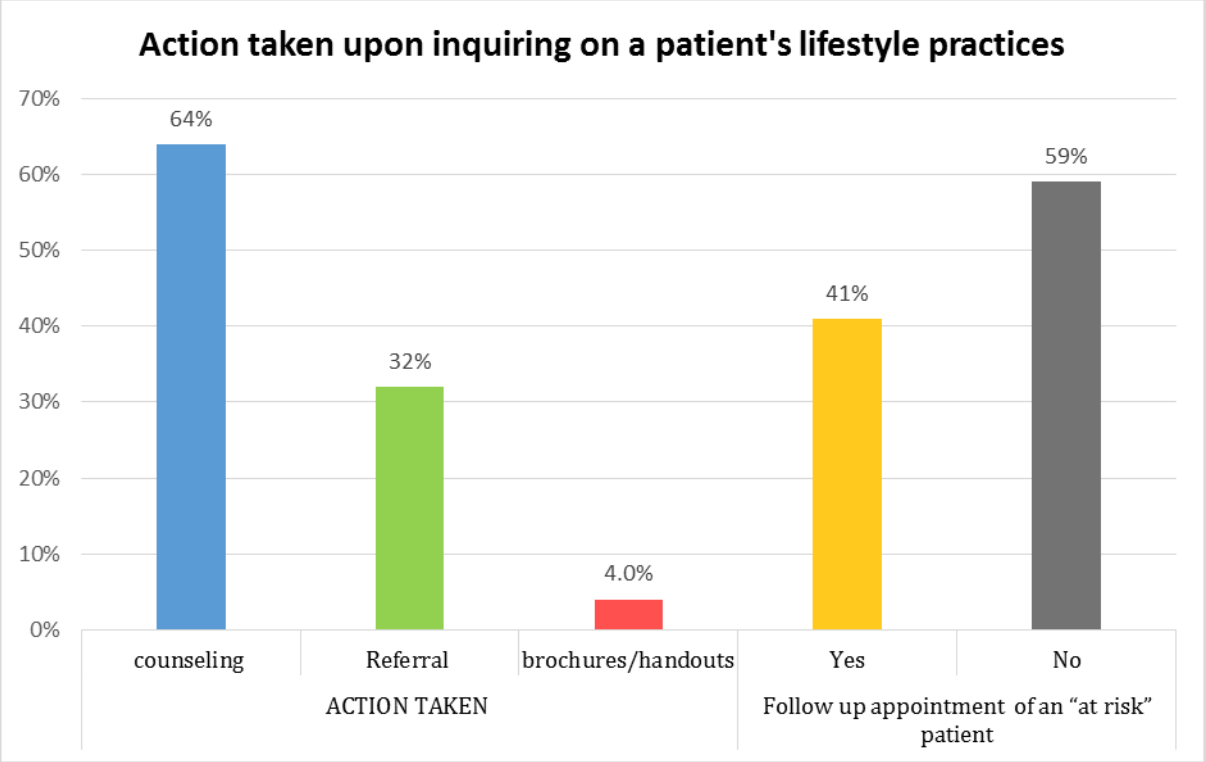
The study aimed to a on the practice of healthcare workers to arrange follow up for patients who were willing to change their behaviour or to those that were deemed at risk of developing a non-communicable disease.

Upon inquiring about the patient's lifestyle practices, the study found that a majority (64%), of the respondents took the patients through counselling on behaviour modification. However, more than half 92(59%), of the respondents did not set up a follow up appointment to review progress of 'at risk' patient. (Figure 7).

When the respondents were asked in the interviews whom they thought was more responsible to discuss lifestyle practices, 5 out of the 9 respondents stated that they usually refer patients to the nutritionist.

> *HCW 3: "You see when we realize, let me just talk for myself, if I realize that they (patient) need to change their lifestyle by diet we refer them to the nutritionist, if we identify where the problem is we refer".*

Figure 7: Action taken upon Inquiring about a patient's lifestyle practice



5.5.3. Relationship between the Practice of Health Promotion and Socio Demographic Factors

To determine the association between various sociodemographic characteristics and the respondents' practice of health promotion, bivariate analysis was carried out. The study showed that the respondents' gender, profession, marital status, age and years of

experience were not significantly associated with the healthcare worker's practice of health promotion (Table11).

Table 11: An Analysis of the Relationship between Sociodemographic Characteristics and Level of Practice of Health Promotion

Variables	Health promotion practice level		Adjusted Odds Ratio (AOR)	Chi-square Test (χ^2)	P value
	Poor/ Average (%)	Good (%)	AOR(95%CI)		
Gender					
Female	35.2	64.8	1.37(0.65-2.90)	2.562	0.273
Male	45.8	54.2			
Profession					
Medical officer	55.0	45.0	0.36(0.13-1.02)	5.239	0.051
Nurse	36.0	64.0			
Marital Status					
Not yet married	35.2	64.8	0.71(0.12-4.37)	5.028	0.503
Currently married	41.5	58.5	0.55(0.10-3.10)		
Separated/divorced /Widowed	25.0	75.0			
Age categories					
<=35	38.9	61.1	3.08(0.22-43.03)		
36 - 45	32.5	67.5	6.00(0.56-64.18)	9.222	0.270
46 - 55	40.9	59.1	4.19(0.37-47.41)		
> 55	75.0	25.0			
Years of experience					
<= 3	22.7	77.3	3.59(0.69-18.73)		0.077
4 - 7	45.8	54.2	1.25(0.32-4.93)	10.747	
8 - 10	35.0	65.0	1.89(0.42-8.48)		
> 10	39.4	60.6			

5.5.4. Relationship between level of practice and attitude to health promotion

A statistically significant relationship was identified between level of practice and attitudes to health promotion among the study respondents. The study showed respondents with a positive attitude were 3.5 times more likely to have good health promotion practices as compared to respondents who had neutral attitudes towards health promotion(OR=3.54, p=0.001). (Table 12)

Table 12: Relation between practice and attitudes to health promotion among study respondents

Attitudes to health promotion	Practice of health promotion		odds ratio(OR) (95%CI)	p-value
	Poor/Average	Good		
Neutral	26	17	3.54(1.71-7.39)	0.001
Positive	34	79		
Total	60	96		

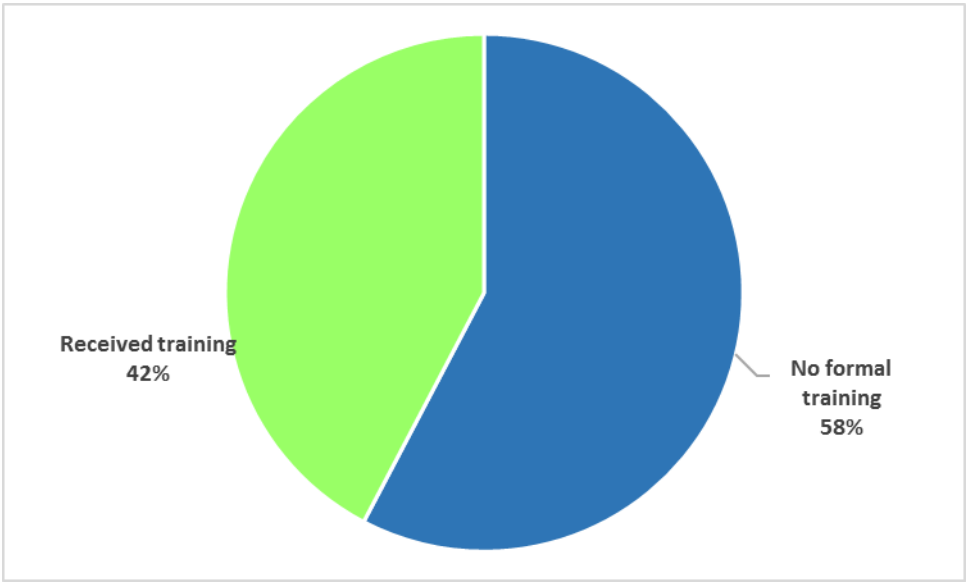
5.6. Influence of Organizational Factors on Health Promotion for Non-Communicable Diseases

To evaluate the influence of organizational factors on the attitude and practice of health promotion among healthcare workers, the study sought to assess the training levels of staff on health promotion, the HCW also rated their competency to offer counselling on lifestyle behaviours. In addition, the study aimed to reveal the available organizational structures in place which are geared towards support of health promotion practices among HCWs.

5.6.1. Workforce Development

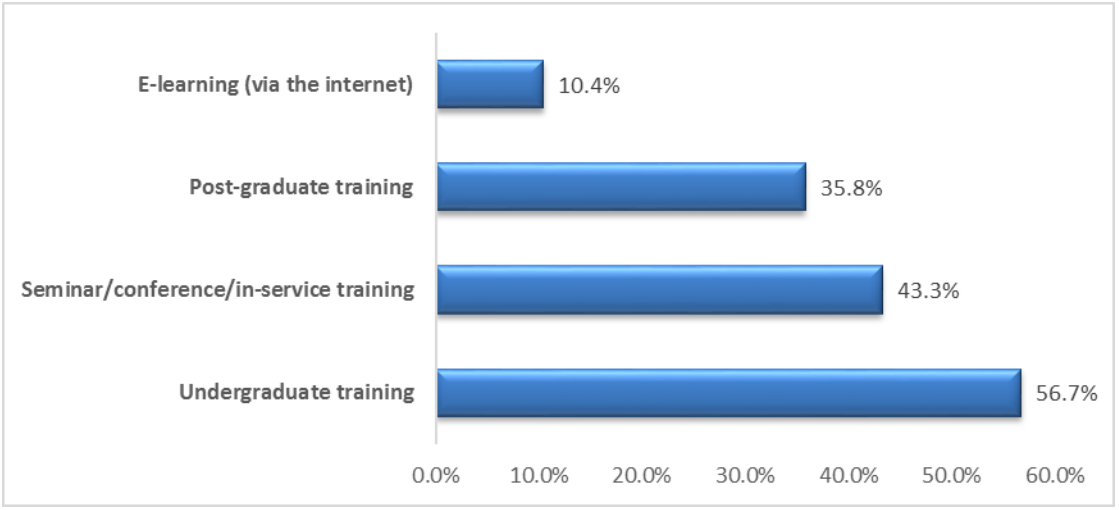
The study aimed to reveal the availability of trained staff. More than half, (58%) of the respondents stated that they had not received any formal training on health promotion methods for NCDs (Figure 8).

Figure 8: Training on health promotion among study respondents



With regards to training the respondents provided multiple answers where, 42% stated that they had received formal training while about half (56.7%) of the respondents stated that they received training during their undergraduate training. (Figure 9).

Figure 9: Source of formal training on Health Promotion



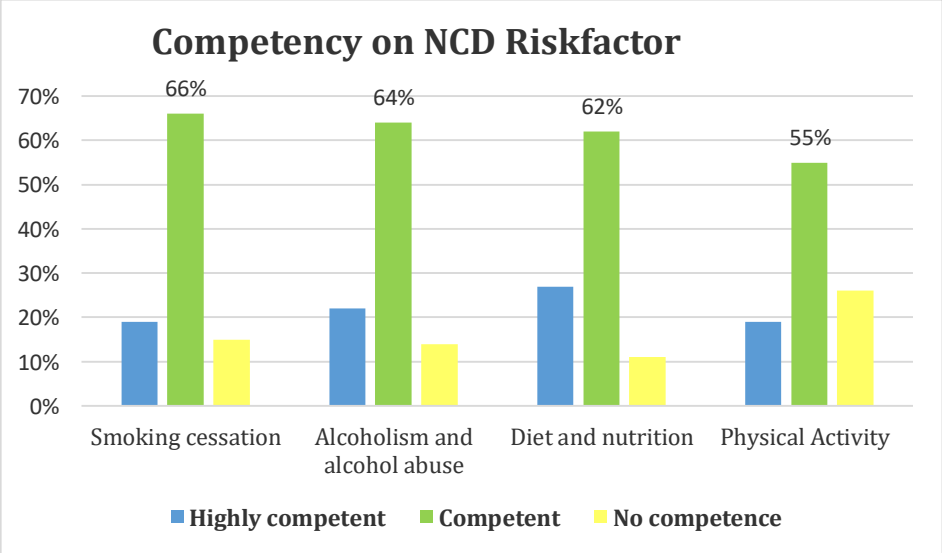
When asked if they require further training, a majority of the respondents (73.1%) would like to receive training on health risk assessment, 71.2% on diet and nutrition, 67.3%, on physical exercise and fitness, 58.3% on alcoholism and alcohol abuse

counselling and 46.8% on smoking cessation techniques. However 3.2% were not interested in all these trainings even if conveniently available.

5.6.1.1. Competency of Healthcare Workers

More than half of the respondents stated they were competent in providing counselling on; smoking cessation (66%), Alcoholism (64.1%), diet and nutrition (62.2%), and Physical activity (55.1%) (Figure 10).

Figure 10: HCW Self-reported competency on NCD risk Factors



Findings from the in-depth interviews further captured the varied interpretations of what the respondents understood of the term "health promotion". Some examples include:

HCW 8: "*Health Promotion is creation of awareness to people about health related issues on maybe how you can prevent the occurrence of certain diseases and in case you have them how to manage them in the first level of diagnosis. So that you prevent complications of the same".*

HCW 9*: "It's just these non-communicable diseases, how as in you as the health worker, how you manage them, that what I can just imagine of".*

5.6.1.2. Relationship between Healthcare Worker's NCD Competency and Their Inquiry of its Related Lifestyle Risk Factor

Upon conducting a bivariate analysis the study revealed there was significant association between health worker competence on counselling on physical activity and their inquiry of their patient's physical activity behaviour ($\chi^2 = 17.5$, $p = 0.007$). (Table 13). However, counselling on alcohol use, smoking cessation, and dietary intake was found to be not statistically significant (Appendix 7)

Table 13: Relationship between healthcare workers' competence on counselling physical activity and their inquiry practice of physical activity to patients

Point of inquiring about patient physical activity	Competence on counseling on physical activity					
	Highly competent		Competent		No competence	
	F	%	F	%	F	%
Never	3	10	13	15.1	11	27.5
If the patient presents with a chronic illness	3	10	22	25.6	12	30
To patients who are 'at risk'	10	33.3	36	41.9	13	32.5
Every time I see a patient	14	46.7	15	17.4	4	10

* F= Frequency

5.6.2. Organizational Support

Responses from the in-depth interviews revealed that there are no written polices or guidelines available to assist in the dissemination of information on health promotion;

HCW 1: "No there used to be. We had a health education unit which has since been abolished. They had good guidelines".

HCW 4: "Maybe, I don't know if we have. If there are, I don't have a copy. Maybe in the nutrition department, in counselling department but maybe they haven't escalated to us".

The study also found that 60.3% of the respondents were of the opinion that it would be very valuable to be provided for with guidelines and procedures to assist them to disseminate information on health promotion. They considered, literature for

distribution to be the least valuable tool/aid 18(11.5%) that would motivate them to practice health promotion (Table14).

Table 14: Responses on aides that would be valuable when working with patients on health promotion

Aides	Very valuable n(%)	Valuable n(%)	Not valuable n(%)
Guidelines and procedures to assist dissemination of health promotion information	94(60.3)	53(34.0)	9(5.8)
Provision of health risk assessment forms for recording patient lifestyle	77(49.4)	66(42.3)	13(8.3)
Literature for distribution to patients	73(46.8)	65(41.7)	18(11.5)
Training on specific subjects e.g. alcohol, exercise, and nutrition	90(57.7)	54(34.6)	12(7.7)
Information on where to refer patients	80(51.3)	65(41.7)	11(7.1)
Incentives for staff involved in health promotion	82(52.6)	60(38.5)	14(9.0)

Based on finding from the in-depth interview HCWs shared their visions and suggestions for what they think management needs to do in order for successful incorporation of health promotion activities. These are presented in Table 14 along with relevant quotes.

Table 15: Suggestions for incorporation of health promotion practices

SUGGESTION FOR IMPROVEMENT

Vision/ Suggestion	Quote
Reinstate Health education unit	*The hospital should reintroduce the health education unit. Those people were under-utilized. Their roles should be redefined it was very useful but it's useful to put the right people with the right job description and the right knowledge. ….pauses…. but it's us who thought they were not doing anything. It should be introduced but in a different way.-* HCW 1 *The health education unit used to be very useful. It should be brought back* –HCW 2 *We had a Kenyatta department for health education ... what happened I cannot tell. They were teaching. And they were following up. Just the way infection prevention unit is we are supposed to have that department like that in Kenyatta, it used to be there. HCW5* *We still need some improvement because sometimes we are not available to give that information (Health promotion) because the workload is too much. We need more people. Like now diabetic specialist to come and talk about it. Especially like hypertension they come and discuss they give the patient sort of a lecture. We need them HCW-6*
Increase of staffing levels	*There is shortage of staff…thus counselling becomes side-lined. We have no time , we need more staff HCW 2* *We are short of time because of health staffing because like now let me say we are three nurses and we have like 60 patients and we have many procedures that are going on within that shift... I don't think there would be time to stand and give a lecture like for 15 minutes or 10 minutes... So health staffing is an issue- HCW6*
Establish a Screening centre	*I think what should be done is, Kenyatta should have a place where ...ok like a screening centre. Which is run day in day out so that anybody even any member (staff) or the public can walk in and go for screening because like when you tell the patients to go for screening maybe it's a man you tell them to go and do the tumour markers… you know you have to tell them to go to a surgeon they write for you. You know there is no place in KNH you can refer them. The men where will you refer them to go be screened? Even the females ... if its pap smear you know where to refer them but where would you refer them if you wanted to check*

	them for CA colon? So I think KNH should have a screening centre would run from Monday to Friday and the public can walk in. –HCW3
Promote the health of staff	*To be serious with this idea of educating the staff on the importance of having health check-ups and more so in encouraging them in their own health promotion. It starts with them- HCW 9* *If we could get going with health promotion of our own health and stop thinking unhealthy situation happen to other people. There is a lot that needs to change- HCW7* *Maybe the hospital should have staff counsellors whom the hospital has put up and provide confidentiality for staff who will use it as will encourage staff to use it. –HCW 1*

CHAPTER SIX: DISCUSSION

6.1. Introduction

This chapter aims to deliberate on the major findings of the study in view of the stated objectives. The discussion is categorised into four main sections. The first section focuses on the lifestyle practices of healthcare workers, the second section looks at the attitudes to health promotion, while the third section focuses on the practice of health promotion. Lastly the fourth section focuses on the influence of health system factors on health promotion.

6.2. Lifestyle Practices of Healthcare Workers at Kenyatta National Hospital

This study aimed to describe some of the personal lifestyle practices and health- related behaviour of healthcare workers at Kenyatta National Hospital. This was important because studies have shown that they are more likely to counsel their patients about lifestyle behaviour change if they practice healthy behaviours themselves (Oberg & Frank, 2009)

6.2.1. Prevalence of Healthcare Workers' Alcohol Consumption and Tobacco Use

The prevalence of tobacco use among healthcare workers at Kenyatta National Hospital was 3.8%. This was relatively low compared to the national prevalence of tobacco use among Kenyan adults aged between 18-69 years, which was at 13% (Ministry of Health, 2015b). However, smoking prevalence was slightly higher when compared to a similar study done among healthcare workers in Kiambu County, whose prevalence was 2.7% (Gichuki, 2014).

The smoking prevalence may however not be indicative of the tobacco use among healthcare workers as not all healthcare professions were included in the study. Additionally, the study population consisted predominantly of women, and studies

show that women are less likely to be smokers than their male counterpart (Bazargan et al., 2009).

At the time of conducting the study, 30.8% of the respondents were current alcohol consumers, this was almost similar to the general population at 33% (Ministry of Health, 2015b). A 2007 survey of Swiss doctors indicated that they consumed two times more alcohol than the general population (Sebo, Bouvier Gallacchi, Goehring, Künzi, & Bovier, 2007). Several studies have identified high prevalence of alcohol use among HCWs and most authors attribute the high prevalence to long working schedules especially HCWs who work in inpatient wards have been shown to have tendencies of harmful alcohol consumption and higher disposable income(Montali, Campaniello, Fontechiari, Ferrari, & Vitali, 2016; Saeys & Cammu, 2014; Sebo et al., 2007).

6.2.2. Healthcare Workers Dietary habits and Physical activity

The WHO recommends at least 5 servings of fruits and vegetables per day(WHO, 2013b), the respondents in the study averaged about 3 and 4 servings of fruits and vegetables, respectively. These findings are similar to a Canadian study which showed that HCWS consumed on average 4.8 servings of fruits and vegetables.(Frank & Segura, 2009).

The study found that 56% respondents were sedentary during their work period. Despite this, 56% reported to being actively involved in exercise with brisk walking being the most common type of exercise. This study corresponds to a similar study done in South Africa where 70% of the respondents exercised occasionally with 2% exercising regularly (Montali et al., 2016).

Additionally, 70% of the healthcare workers perceived their weight to be normal with only 23 % stating to be overweight. However, a study done among HCWs in South Africa, found that the majority of HCW who were overweight or obese perceived

themselves as being of normal weight (Skaal & Pengpid, 2011). Thus proving there is a strong discrepancy between self-reporting and the actual situation. Thus further study is required on HCWs body mass index to determine actual situation.

6.2.3. Healthcare Workers Wellness Practices

A study on breast cancer screening practices revealed that women doctors who frequently screen themselves were also more likely to screen their patients and recommend breast self-examination (Thaker, Perrin, Daley, Vamos, & Patel, 2015). Despite availability to free health check-ups, slightly less than half of the healthcare workers in my study stated that they went for routine medical checks, additionally 57% of the respondents stated to have never tested for cancer.

Literature reveals that healthcare workers are deemed to be role models for their patients, and that HCWs who reveal healthy lifestyle practices are more likely to motivate their patients to adopt heathier practices. Thus HCWs have an obligation not only for improvement of public health, but also improve own health (Oberg & Frank, 2009).

6.3. Healthcare Workers' Attitudes to Health Promotion for NCDs

A majority of the respondents in this study strongly agreed that health promotion was the responsibility of all healthcare professionals, in addition, they found it personally rewarding to discuss the lifestyle behaviour interventions with their patients'. These findings were similar to previous studies (Ampt et al., 2009; Johansson et al., 2010; Paz & Luquis, 2014).

In contradiction, the study found that a majority of the HCWs agreed that lifestyle counselling was more effective when linked to an individual presenting with chronic illness. This is consistent with findings from a German study, which showed that the decision to discuss lifestyle behaviour change was based on the specific issue with

which the patient presented. In addition, the study noted that the prevention role of a doctor in a clinical setting was focused on secondary prevention rather than primary prevention (Holmberg et al., 2014).

Lack of time was considered as a factor that might hinder incorporation of health promotion in general practice. It was noted that demanding work schedules restricted respondent's time to give detailed counselling. According to numerous studies, lack of time has been consistently cited as a commonly experienced obstacle for health promotion in general practice (Johansson et al., 2010; Kemppainen et al., 2013; Lambe & Collins, 2010; McHugh et al., 2010). However, studies on smoking cessation practices among HCWs showed that brief interventions lasting less than 3 minutes could make significant impact when compared to no intervention (US Department of Health and Human Services, 2008).

This finding strongly point to a need to educate HCWs on the benefits of health promotion within the hospital/ clinical settings.

6.4. Healthcare Workers' Level of Practice of Health Promotion for NCDs

The first step in the practice of health promotion is to identify and establish a record of a patient's risk factor assessment (Harris, 2008). Findings from this study indicated that less than half of the respondents inquired about tobacco use and alcohol consumption every time they saw a patient, while dietary habits and physical exercise were mainly inquired upon to 'at risk' patients. Contrary to this, the Kenya STEPwise survey report on NCDs risk factors, stated that only 8% and 10% of the general population had received lifestyle advice on tobacco and alcohol cessation respectively (Ministry of Health, 2015b). This indicates a missed opportunity in the early detection of NCDs within the general population.

In addition, this study showed inadequate practice in the management of lifestyle risk factors, based on the interventions within the 5A's model. Most of the respondents performed the 'ask' and 'advice' components, while the 'assess', 'assist' and 'arrange follow up' components were mostly neglected. This corresponds to several studies which indicated that the 'assist' and 'arrange follow up' were the least practiced components (Gichuki, 2014; Harris, 2008; Paz & Luquis, 2014). However, an Australian based study found that it might be unrealistic for HCWs to effectively carry out the 5A's approach since most HCWs view lifestyle behaviour counselling as a peripheral component of their role as focus on care and treatment a patient's specific problem. Therefore, a minimal approach of asking and arranging referral would be effective in promoting lifestyle behaviour modification. The use of minimal approach is heavily dependent on have an efficient and reliable referral system (Laws et al., 2009).

Lack of training and low confidence in a HCW's ability to hinder the implementation of health promotion in a clinical setting (Ulla et al., 2010). This study showed that although less than half of the respondents had received formal training on health promotion at either undergraduate or post graduate level, most of the HCWs felt confident in the provision of lifestyle counselling. In addition, this study found statistical significance between healthcare worker's competence on counselling on physical activity and their inquiry of their patient's physical activity behaviour. Therefore signifying the importance of ensuring proper training, as this will have an impact on HCWS in imparting lifestyle counselling to their patients.

In addition, this study also indicated no statistical significance between HCWs health promotion practices and their socio- demographic factors such as years in practice, gender, and profession. In contrast a study done in Malta showed that the more years in clinical practice was significantly associated with HCWs confidence to provide lifestyle

counselling on behaviour change (Saliba, Sammut, Vickers, & Calleja, 2011). However, level of practice of health promotion was found to be significantly associated with the healthcare worker's attitude to health promotion this implies an interdependence of these two factors in the ensuring the practice of health promotion in a clinical setting.

6.5. Influence of Organizational Factors on Health Promotion Activities

This study found that not only were written policies and guidelines not available but that there was no department or personnel in the hospital organizational structure that dealt with health promotion. The respondents called for the reinstatement of the health promotion department additionally, 60% of the respondents noted that guidelines and procedures are very valuable to assist in dissemination of health promotion to patients thereby showing a willingness to undertake health promotive activities. Studies have indicated the importance of the hospital management team have a key role to ensure a clear vision and strategy is availed to HCWs and ensure commitment to implementation of health promotion activities in a clinical setting (Johansson et al., 2010; Kemppainen et al., 2013).

A confounding factor in this study was that there were different variations in the interpretation of what constitutes health promotion thus can lead to unnecessary misinterpretations between disease prevention and health promotion. Studies have shown that clarity is a crucial prerequisite in successful incorporation of health promotion practices in clinical settings (Holmberg et al., 2014; Johansson et al., 2009). Thus it's of importance to ensure adequate training of healthcare works.

The study found that there was disconnect between the HCWs and management. It was noted in the in-depth interviews that, changes took long to be implemented, and that the feedback process was found wanting, as most stated the process was bureaucratic

and in most instances the feedback was never obtained on a raised issues. Organizational structures is crucial in provision of clear leadership and creating an enabling environment where staff are more committed to effectively and efficiently meet organizational goals (McHugh et al., 2010). Thus, effective leadership is crucial in establishing health promotion practices.

6.6. Study Limitations

Lack of willingness to participate was a major limitation to the study. This might have affected the sampling as those who responded to the study might have been more enthusiastic to participating in health promotion. This may have led to an overestimation of their attitude and practice of health promotion. However, this was also a strength in that respondents were extremely knowledgeable about the study topic.

This study relied heavily on self-reports of healthcare workers attitudes and practice of health promotion as well as their behavioural practices. Thus some level of under/ over reporting, especially in alcohol consumption, physical activity and tobacco use, hence may have affected the results of the study as the responses given might have been socially desirable rather than a true account. This was mitigated by conducting a mixed method study which ensured triangulation of results in addition the assurances of confidentiality may however have limited such bias.

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CHAPTER SEVEN: CONCLUSIONS AND RECOMMENDATIONS

7.1. Conclusions

The study aimed to investigate the attitudes and practices of health promotion for non-communicable diseases among healthcare workers. The study found that a majority of the HCWs had a positive attitude to health promotion, with more than half of the respondents strongly agreeing that it was part of their responsibility to advice patients to adopt healthy lifestyles. In addition, the study revealed a strong willingness to take up more preventive measures in tackling the rise of NCDs. Contrary to this, the study found that only a third of the respondents exhibited good practice to health promotion. In addition, most respondents stated to provide counselling to patients on lifestyle practices, yet less than half reported to provide follow up information or referral to specialist or other healthcare professionals. The study found that a positive attitude was a predictor of acceptable HP practice, therefore policy makers should put in place strategies to change the attitude of all HCWs.

The study found that the respondents' lifestyle practices were much better when compared to general Kenyan population. However, there is room for improvement in their health seeking behaviours as less than half of the respondents go for medical check-ups, the in-depth interviews noted that despite accessibility to free medical services very few staff take up the services offered. There is need to further investigate this to ascertain why HCWs don't take up the readily accessible health services.

The study also found that organizational support was inadequate as evident in lack of guidelines furthermore a deficiency in training was noted. Thus signifying a need for a responsive and proactive hospital management team that will ensure reorientation of HP in health service

7.2. Recommendations

Based on the findings, the study recommends the following;

1. The Kenyatta National Hospital management, should ensure adequate training by all staff on health promotion be reinforced through in-service training programs.
2. The Kenyatta National Hospital management to develop wellness programs suited for healthcare workers, to ensure personal and mental well-being of healthcare workers.
3. The Kenyatta National hospital management team to revive the department of health promotion/education unit. The unit should ensure constant monitoring and supervision of healthcare workers in the delivery of health promotion activities

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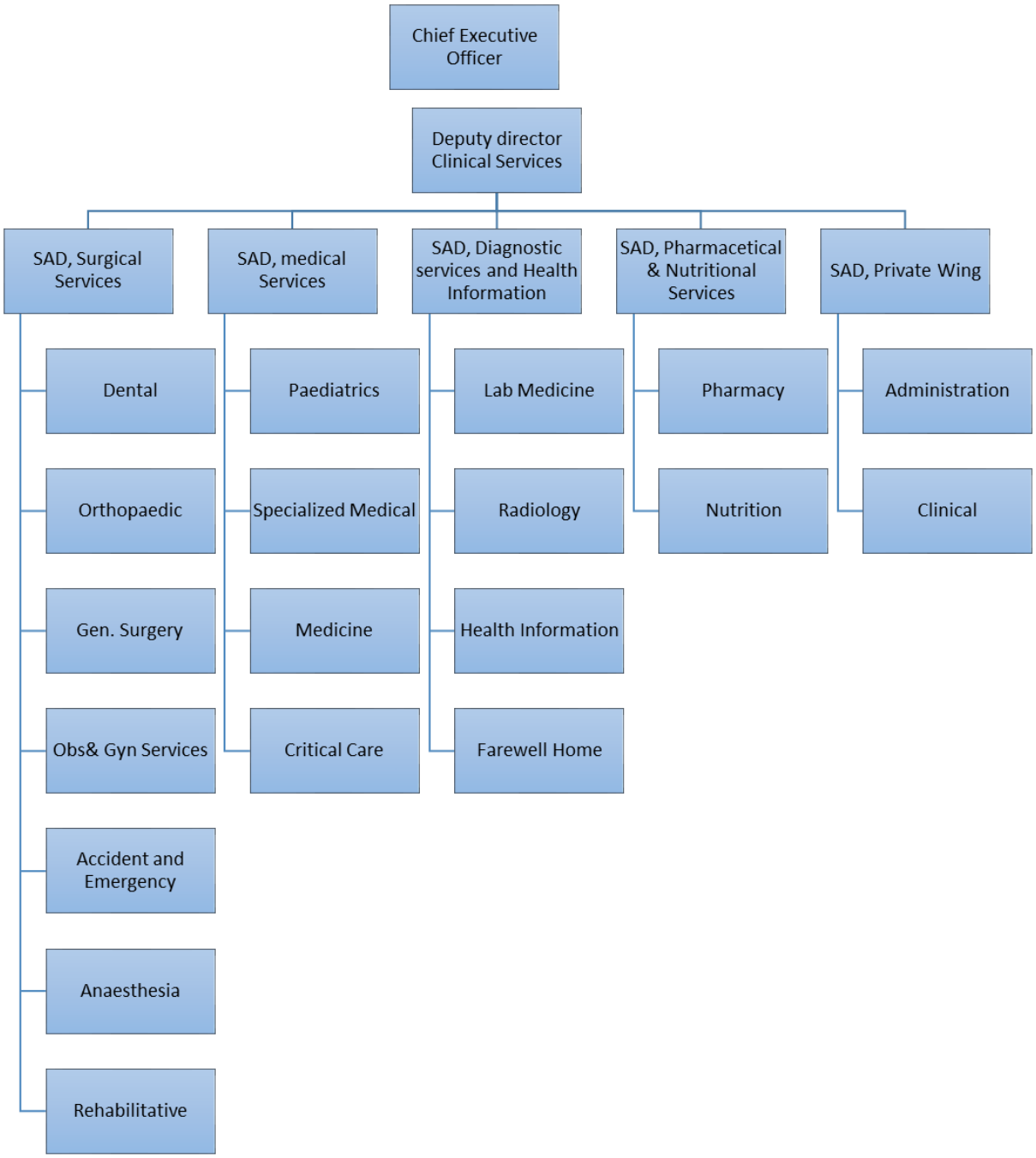
APPENDICES

Appendix 1 – The KNH Organizational Structure



Source: Accessed from KNH Website (knh.or.ke/wp-content/uploads/2013/10/KNH-Organisation-Structure-chart.pdf.

Appendix 2 – KNH-UON/ Ethics & Research Committee Approval Letter

Appendix 3 - Consent Form for Respondents

ATTITUDES AND PRACTICE OF HEALTH PROMOTION FOR NON COMMUNCIABLE DISEASES PREVENTION AMONG HEALTHCARE WORKERS AT KENYATTA NATIONAL HOSPITAL."

Introduction

Hello, my name is Elizabeth Kamau, I am a post graduate student at the School of Public Health, University of Nairobi, pursing Masters in Public Health. I am conducting a research and would kindly like to request you to take part in this study. I have sought approval from the Kenyatta National Hospital- University of Nairobi ethics and research committee to conduct this research in this institution

Purpose of study

To determine the attitudes and practice of health promotion for non-communicable diseases prevention among healthcare workers at the Kenyatta national hospital.

Procedure

If you agree to participate in this study, then a questionnaire will be administered either with the help of a research assistant or by myself.

During the interview, I or the research assistant will sit down with you in a comfortable place of your choice. If you do not wish to answer any of the questions during the interview, you may say so and the interviewer will move on to the next question. The information provided is confidential, and no one else except researcher and the interviewer will access to the information documented during your interview. The questionnaire will take 20-25 minutes to administer.

Voluntary participation

Your participation in this research study is voluntary. You may choose not to participate and you may withdraw your consent to participate at any time. You will not be penalized in any way should you decide not to participate or to withdraw from this study. You do not have to give us any reason for not responding to any question, or for refusing to take part in the interview

Risks and discomforts

I will be asking you to share with us some very personal and confidential information, and you may feel uncomfortable talking about some of the topics. You do not have to answer any question or take part in the interview if you don't wish to do so.

Potential benefits

There are no known direct benefits to you that would result from your participation in this research.

Protection of confidentiality

The information that we collect from this research project will be kept private. Any information about you will have a serial number on it instead of your name. Only the researcher will know what your number is and it will not be shared with anyone.

Contact information

If you have any questions or concerns about this study or if any problems arise, please contact the researcher: **Elizabeth Kamau** at **0721513055**. If you have any further questions, please contact the **KNH/UON-ERC** at 020-2726300 ext. 44355, 726300-9.

Declaration of Participant

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study

Print name of Participant _____

Participant's signature_____ **Date**: _____

Researcher's Statement

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily

Print Name of Researcher _____

Researcher's signature_____ **Date**: _____

Appendix 4- Consent Form for In-depth Interview

"ATTITUDES AND PRACTICE OF HEALTH PROMOTION FOR NON COMMUNCIABLE DISEASES AMONG HEALTHCAREWORKERS AT KENYATTA NATIONAL HOSPITAL."

I want to thank you for taking the time to meet me today. My name is Elizabeth Njoki Kamau. I am a postgraduate student from the University of Nairobi pursing a Master's in Public health. The aim of this interview is to get your perspective on health promotion for non-communicable diseases. The information you provide will help informing strategies for prevention of non-communicable disease.

The interview should take between 30 minutes to one hour. The session will be both audio-recorded and written down so as not to miss out any of your comments. Because the session will be taped, you will be required to speak up occasionally to help us not to miss out on your comments. The information you provide will be treated with strict confidentiality in the study. I will ensure that any information included in the study does not identify you as the respondent.

Please keep in mind that there is no direct benefit in participating except that the information you provide will be useful to policy makers and feedback concerning the study results will be given to you at the end of the study compilation, if you are interested. I will be asking you some very personal and sensitive information, if you feel uncomfortable talking about some of the topics, you may chose not answer them. In addition, you are free to leave at any time during the discussion. I may also need to interview you again if need be, in order to clarify some comments. Do you agree to participate in the discussion?

Contact information

If you have any questions or concerns about this study or if any problems arise, please contact the principal researcher: **Elizabeth Kamau** at **0721513055**. If you have any further questions, please contact the **KNH/UON- ERC** at 020-2726300 ext. 44355,

Declaration of Participant

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study

Print name of Participant _____

Participant's signature_____ **Date**: _____

Researcher's Statement

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily

Print Name of Researcher _____

Researcher's signature_____ **Date**: _____

Appendix 5–Questionnaire for Survey

ATTITUDES AND PRACTICE OF HEALTH PROMOTION FOR NON-COMMUNICABLE DISEASES AMONG HEALTHCARE WORKERS AT KENYATTA NATIONAL HOSPITAL.

IDENTIFICATION

Questionnaire Code: _____

Name of Unit: _____

Name of department: _____

Signature: _____

Date of Completion _____

PART A: SOCIO- DEMOXGRAPHIC INFORMATION

1. Gender : ☐ Female ☐ Male
2. Age in years ……..
3. What is your profession:

   ☐ Medical Officer

   ☐ Nurse
4. How many years have you been in this profession ……..
5. Marital Status(Tick where applicable)

   ☐ Not yet married

   ☐ Currently married

   ☐ Separated/ Divorced

   ☐ Widowed

   ☐ Other ……

PART B: HEALTH PROMOTION INFORMATION

SECTION 1: Attitudes to Health Promotion

This section addresses your perceptions on the role of healthcare providers in health promotion.
Please indicate if you agree or disagree with the following statements (Kindly tick where appropriate).

	Question	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Agree**
6.	It is part of my daily practice to advice my patients to adopt healthier lifestyles					
7.	My patients' acute health problems take precedence over lifestyle counselling					
8.	My lifestyle counselling advice is more effective when its linked to an individual presenting with a chronic disease					
9.	I do not have sufficient time to provide lifestyle counselling to all my patients who present with unhealthy lifestyle practices during routine consultations					
10.	Patients are not receptive to receiving lifestyle counselling from me					
11.	Discussing healthy lifestyle behaviours with my patients is very rewarding for me.					

12. Whom do you feel is most responsible for providing health promotion information to patients?

☐ Doctors
☐ Nurses
☐ Clinical Officers
☐ Public health specialists
☐ All the above
☐ Other (Specify)……

SECTION 2: Practice to Health Promotion

This section addresses the range of activities performed by healthcare providers to motivate and encourage patients to take up healthy lifestyles.

13. Do you ask patients about their lifestyle status on the following? (Tick where applicable)
    - ☐ Tobacco use
    - ☐ Alcohol consumption
    - ☐ Dietary habits
    - ☐ Physical exercise

14. Please indicate the point at which you gather the information in each of the following areas

		Every time I see a patient	To patients who are "at risk"	if the patient presents with a chronic illness	Never
a	Tobacco use				
b	Alcohol Consumption				
c	Dietary Habits				
d	Physical exercise				

15. After inquiring about a patient's lifestyle practices what do you do afterwards?
    - ☐ Take them through counselling on behaviour modificatioan
    - ☐ Refer them to a specialist
    - ☐ Given them Brochures/ handouts
    - ☐ Other (specify)……..

16. Do you set up a follow up appointment to review progress of an "at risk" patient on adoption of healthy lifestyle practices
    - ☐ Yes
    - ☐ No

SECTION 3: Training and Competence

This section addresses past training on any health promotion topic and your confidence in performing the various interventions strategies

17. Have you received any formal training on health promotion methods for non-communicable diseases and preventive approaches to use with your patients? (Please tick one)

☐ Yes ☐ No

If yes, when

☐ During my undergraduate training

☐ During my post graduate / Higher- diploma training

☐ In a seminar/conference/in-service training

☐ Through E-Learning (via the internet)

☐ Other ……

18. Please rate your competence in performing the following:

		Highly competent	**Competent**	**No Competence**
a	Counselling on smoking cessation			
b	Counselling on alcoholism and alcohol abuse			
c	counselling on diet and nutrition			
d	counselling on physical exercise			

19. If Continuing Medical Education (CME) courses were available at a convenient time, which courses would you take on the following subject areas (Tick all applicable)

☐ Smoking cessation techniques

☐ Alcoholism and alcohol abuse counselling

☐ Diet and nutrition

☐ Physical exercise and fitness

☐ Health risk assessment

20. Which of the following aides, if provided might assist and / or motivate you to work with patients on health promotion. Please indicate how valuable to you each of the following might be:

		Very Valuable	**Valuable**	**Not Valuable**
a	Guidelines and procedures to assist dissemination of health promotion information to patients			
b	provision of health risk assessment forms for recording patient lifestyle history			
c	Literature for distribution to patients			
d	Training on specific subjects e.g. alcohol, exercise, and nutrition.			
e	Information on where to refer patients			
f	Incentives for staff involved in health promotion			
	Other (Specify)…..			

PART C. HEALTH CARE PROVIDER'S BEHAVIOURAL PRACTICES

A. TOBACCO USE

	Question	Response	Remark
21.	Are you?	☐ A current smoker ☐ An ex-smoker ☐ Never smoked	skip to Q24 if response is an ex-smoker and never smoked
22.	If currently smoking, what is the frequency of your smoking?	1. Daily 2. 2- 3 times a week 3. Occasionally 4. Rarely	
23.	During the past 12 months have you tried to quit smoking	☐ Yes ☐ No	
24.	During the past 30 days, have you been exposed to secondary smoke, either at home or in public social places	☐ Yes ☐ No	

B. ALCOHOL CONSUMPTION

In measuring drink size, a 'drink' is defined as a 330ml bottle, 120ml glass of wine or 30ml of distilled spirit

	Question	**Response**	**Remark**
25.	Do you	☐ Currently consume alcohol ☐ quit consuming alcohol ☐ Never consumed alcohol	If response is never consumed or quit proceed to Q29
26.	During the past 12 months, how frequently have you had at least one standard alcoholic drink?	☐ Daily ☐ Weekly ☐ 1-3 times a month ☐ Occasionally	

27.	When you drank alcohol, how many standard drinks on average do you have during one drinking occasion?	Number……..	
28.	During the past 12 months, how often have you needed a first drink in the morning to get yourself going for the day?	1. Daily or almost daily 2. Weekly 3. Monthly 4. Less than monthly 5. Never	

C. DIET

i. Fruits and Vegetables

The next questions ask about the fruits and vegetables that you usually eat.
As you answer these questions please think of a typical week.

- *One Vegetable serving* --3 tablespoons of cooked vegetables
- *One Fruit serving* -- 1whole fruit / ½ cup of cut-up fruit or ¼ cup of fruit juice

	Question	**Response**	**Remark**
29.	In a typical week, how often do you eat fruits and vegetables	1. No. of Fruits/ week ……. 2. No. of Vegetables/ week ……..	
30.	How many servings of fruit do you eat on one of those days?	1. Serving of fruit …… 2. Serving of Vegetables ……..	

ii. Dietary Salts

	Question	**Response**	**Remark**
31.	How often do you add salt or a salty sauce such as soya sauce to your food right before you eat it or as you are eating it?	Always Often Sometimes Rarely Never	
32.	How often do you eat processed food high in salt? (for example packaged salty snacks, cheese, bacon and processed meat)	Always Often Sometimes Rarely Never	

33.	On average, how often do you eat meals that were not prepared at a home? By meal, I mean breakfast, lunch and dinner.	Daily or almost daily Weekly Monthly Less than monthly Never	

D. Physical Activity

Please answer these questions even if you do not consider yourself to be a physically active person.

	Question	**Response**	**Remark**
34.	Does your work involve mostly sitting or standing with walking for no more than 10 minutes at a time?	Yes No	
35.	During the past 30 days, apart from your regular job, did you participate in any physical activity example running, golf or brisk walking?	Yes No	If No, proceed to Q39
36.	What type of physical activity did you spend the most time doing during the past month?	Brisk walking Running/ Jogging Aerobics Gym sessions Other (Specify)……..	
37.	How frequently did you take part in this activity during the past month?	1. Daily 2. 2-3 times a week 3. Once a week 4. 1-2 times a month	
38.	How much time do you spend doing the physical activity on a typical day?	**Time** ……	
39.	How do you perceive your weight?	1. Under weight 2. Normal Weight 3. Overweight 4. Obese	

E. Health Status

40. The following question seeks to establish if you have ever undertaken a medical test to screen for the following conditions:

		Tested		Never Tested
	Diagnosis	**Positive**	**Negative**	
	Condition			
a	Hypertension			
b	Diabetes			
c	Heart disease			
d	Respiratory Diseases (Asthma, Chronic Respiratory pulmonary disease, Respiratory allergies)			
e	Cancer			

41. Do you go for routine medical check-up?
    Yes

    No

42. How often do you go for routine medical check-up?

- ☐ Twice a year
- ☐ Annually
- ☐ Every 2-3 years
- ☐ Other ……..
- ☐ Never

THANK YOU FOR YOUR TIME AND THOUGHTFUL RESPONSES

Appendix 6 – In-depth interview guide

IN-DEPTH INTERVIEW GUIDE FOR HEALTHCARE WORKERS ATTITUDES AND PRACTICE OF HEALTH PROMOTION FOR NON-COMMUNICABLE DISEASES AT KNH

Questions on Attitudes and practice of Health Promotion

1. Kindly give me an overview of what you do?
2. Kindly explain what you understand by term "health promotion for non-communicable diseases"
3. In your view what is the current health promotion practices being carried out within KNH
4. Do you discuss lifestyle risk factors for non- communicable disease to your patients?

   If Yes? Kindly state what prompted you to discuss the topic of lifestyle risk factors

   Probe on what prompted them to discuss on lifestyle practices

   No: Kindly state whom you feel is most responsible and why

   If No what factors limit you from discussing lifestyle risk factors with your patients
5. Which topics do you feel most comfortable discussing with your patients and why?
   a. Tobacco use
   b. Alcohol consumption
   c. Dietary Habits
   d. Exercise
6. What are your views on counselling a patient on behaviour modification for NCDs?

   Probe: When do you feel most comfortable to discuss behaviour modification?

   Do you feel you were well prepared to address health promotion?
7. From your experience does your own health status influence the type of lifestyle counselling you offer to your patients?
   a. If yes Please provide an example
   b. If no why do you think so?

Health system Factors that influence Health Promotion

8. Is there any written policy or guidelines on health promotion to assist healthcare workers to disseminated information to patients?
9. What are some of the steps taken towards addressing non-communicable diseases at the hospital?
   a. Do believe health services should make prevention the priority rather than treatments
10. What mechanisms are in place to promote the health of the staff working at this hospital?

11. Is there a forum where healthcare workers discuss their experiences and challenges in patient management and are the suggestions from these taken up by the hospital management team?
    a. If yes how frequent are suggestions implemented
    b. If No please explain the barriers

12. Is health promotion something you would consider taking up as part of your daily activities
    a. If yes what other support would you need to assist you to incorporate health promotion activities as part of your daily task?
13. Do you have any other question or suggestions you would like to share with me?

Appendix 7- Relationship between Healthcare workers counselling competency on NCDs and their inquiry to the corresponding NCD risk factor

(χ^2= 9.530, p = 0.111).

Point of inquiring about patient tobacco use	**Competence on counseling on smoking cessation**					
	Highly competent		**Competent**		**No competence**	
	F	%	F	%	F	%
Never	0	0	4	3.9	1	4.2
If the patient presents with a chronic illness	4	13.8	8	7.8	7	29.2
To patients who are 'at risk'	10	34.5	45	43.7	9	37.5
Every time I see a patient	15	51.7	46	44.7	7	29.2

(χ^2= 4.057, , p = 0.661).

Point of inquiring about patient alcohol consumption	**Competence on counseling on alcoholism and alcohol abuse**					
	Highly competent		**Competent**		**No competence**	
	F	%	F	%	F	%
Never	0	0	4	4	2	9.1
If the patient presents with a chronic illness	6	17.6	15	15	5	22.7
To patients who are 'at risk'	13	38.2	35	35	6	27.3
Every time I see a patient	15	44.1	46	46	9	40.9

(χ^2= 9.485, p = 0.123).

Point of inquiring about patient dietary Habits	**Competence on counseling on diet and nutrition**					
	Highly competent		**Competent**		**No competence**	
	F	%	F	%	F	%
Never	0	0	5	5.2	3	17.6
If the patient presents with a chronic illness	8	19	18	18.6	5	29.4
To patients who are 'at risk'	18	42.9	47	48.5	6	35.3
Every time I see a patient	16	38.1	27	27.8	3	17.6