SCHOOL OF MEDICINE AND HEALTH SCIENCES

ASSESSMENT OF AWARENESS AND ATTITUDES TOWARDS NON-COMMUNICABLE DISEASES AMONG KABWATA RESIDENTS, LUSAKA ZAMBIA

By

KUZAMAWA KAMANGA

BSPH1410148

BSc PUBLIC HEALTH

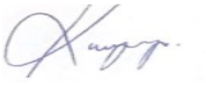
SUPERVISOR: JONATHAN SITALI

A research dissertation submitted to the University of Lusaka in partial fulfilment of the requirements of a Degree in Bachelor of Science in Public Health

DECLARATION

Name of student and ID: Kuzamawa Kamanga BSPH1410148

I declare that this dissertation is my creative work and to the best of my acquaintance has not been presented for a degree in any other institution.

Signature:  **Date: 10.10.2023.**

Supervisor Name:

This dissertation has been submitted with my approval as a University of Lusaka (UNILUS) supervisor.

School of Medicine and Health Sciences, Department of Public Health

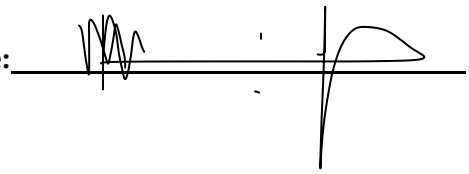
Signature:  **Date:** 17/10/2023.

TABLE OF CONTENTS

ACKNOWLEDGEMENT

I would like to acknowledge the following people who have been there for me during this research study. My supervisor who continuously pushed me to work extra hard in as much as I saw that as being harsh, I realize that it was for my own good it helped me to realize my potential and even work harder to perfect this document not only to the school's standards but making it extra ordinary and standout. I would also like to thank the various individuals that took part in the research, particularly the respondents, and my research assistant, who worked very hard to ensure that data was collected on time.

I also acknowledge with a deep sense of reverence, my gratitude towards my family members who have always supported me.

Last but not the least, my gratitude goes to all my friends who directly or indirectly helped me to complete the research study.

LIST OF TABLES

LIST OF FIGURES

DEDICATION

Firstly, I would like to dedicate this paper to God almighty, thank you for your guidance, strength, power of mind and for giving me good health.

LIST OF ABBREVIATIONS

CVDs	Cardiovascular Diseases
DALYs	Disability Adjusted Life Years
LDHO	Lusaka District Health Offices
LMICs	Low- and Medium-Income Countries
NCDs	Non-communicable diseases
UN	United Nations
WHO	World Health Organization

ABSTRACT

Background: The steady rise in non-communicable diseases (NCDs) worldwide is a key challenge on the global health agenda. The World Health Organization (2018b) estimated that 41 million of the 57 million deaths in 2016 were due to NCDs, the majority of which (78%) occurred in low- and middle-income countries (LMICs). The prevalence of major NCDs including cardiovascular diseases (CVDs), cancer, chronic respiratory diseases, and type 2 diabetes mellitus (T2DM) is increasing, and they remain a challenge for both high-income countries (HICs) and LMICs. In Zambia, Non-communicable diseases (NCDs) are a significant public health concern, as they are in many other countries. According to the World Health Organization (WHO), NCDs are estimated to account for approximately 31% of all deaths in Zambia. The four main types of NCDs in Zambia are cardiovascular diseases, cancer, chronic respiratory diseases, and diabetes.

Most studies that have been conducted in Zambia on NCDs have largely focused on quantifying the disease burden and the associated risk factors with little or no focus on the community awareness.

Method: A cross sectional study was conducted, and a total of 110 participants were randomly selected. Data was collected using structured questionnaire and analyzed using Microsoft excel and STATA version 14.0. The variables that were considered during the analysis included awareness, attitudes and risk factors associated with non-communicable diseases.

Results: The results showed that most of the participants had heard about NCDs (53%) and were aware of the risk factors associated with these diseases (85%). However, only 42% of the respondents had received information on prevention and management of NCDs. The study also revealed that most of the participants had a positive attitude towards NCD prevention and management, with 86% indicating a willingness to change their lifestyle to prevent NCDs.

Conclusion: Limited number of respondents were aware about NCDs related complications, risk factors and its treatment. In addition, attitudes of respondents about NCDs were favorable and thus suggesting some level of understanding about NCDs. Overall, the study highlights the need for increased education and awareness campaigns on NCDs in Kabwata. This will help to improve the knowledge and attitudes towards NCDs and ultimately reduce the burden of the disease in the community.

CHAPTER ONE

INTRODUCTION

1 Introduction

This chapter provides background information surrounding the research topic as well as the statement of the problem, rationale, main and specific objectives, research questions and definition of key concepts of the study.

1.1 Background

The steady rise in non-communicable diseases (NCDs) worldwide is a key challenge on the global health agenda. Not only are chronic pathologies the leading cause of mortality globally, but they represent an increasing burden of morbidity and mortality in the developing world (Alwan, 2010). World Health Organization (2015a) estimates show that age-specific death rates from non-communicable diseases are already higher in sub-Saharan Africa (SSA) than in established market economies. Moreover, overall mortality rates are higher in low- and middle-income countries (LMIC) than in high-income countries (HIC) (Lim *et al*, 2010).

The World Health Organization (2018b) estimated that 41 million of the 57 million deaths in 2016 were due to NCDs, the majority of which (78%) occurred in low- and middle-income countries (LMICs). The prevalence of major NCDs including cardiovascular diseases (CVDs), cancer, chronic respiratory diseases, and type 2 diabetes mellitus (T2DM) is increasing, and they remain a challenge for both high-income countries (HICs) and LMICs.

Non-communicable diseases (NCDs) are defined as diseases or conditions which affect individuals over an extended period (years, decades or even an entire lifetime) and for which there are no known causative agents that are transmitted from one affected individual to another (Daar *et al*, 2007). The main characteristic features of CNCDs include their chronic and insidious clinical manifestations and the resulting long-term disability.

According to the World Health Organisation, Non-Communicable Diseases (NCDs) are defined as chronic conditions that do not result from an (acute) infectious process and hence are “not transmittable.” It is a disease that has a prolonged course, that does not resolve spontaneously, and for which a complete cure is rarely achieved. They are preventable diseases through lifestyle modification of the common causes such as unhealthy diet, physical inactivity, tobacco use and excessive alcohol use.

World Health Organisation (2018), data demonstrate that NCDs affect all countries and leads to loss of output due to early deaths, and the single and national costs of addressing NCDs, act as key obstacles to poverty reduction and sustainable development.

In Zambia, there is adequate proof that the burden of NCDs is hurriedly growing, with main consequences on morbidity and death levels (HMIS 2014-2018, Zambia). Majority of the NCDs are linked with lifestyles like unhealthy diets, lack of physical activities, alcohol and substance abuse and tobacco use (NCDs Strategic Plan 2013-2016).

The major concern, however, is that NCDs are not getting adequate attention, if compared to communicable diseases. NCDs sensitisation and prevention, and in care and support for persons suffering from NCDs in the communities is a major gap in Zambia and other developing countries. The bigger population for Zambia lives in rural areas which is 60% and access to health care is a challenge, as the distances between people and health providers are big (ibid). It is assessed that, only about half of the rural population lives within five (5) kilometres of facilities offering health care. Human resources challenges are impaired by the large burden of HIV, malaria, and TB cases in the population found (MoH, 2014).

Currently, there is no published or on-going research that documents the level of knowledge and information the Kabwata residents have on NCD. Therefore, the primary aim of this research was to assess residents of Kabwata baseline knowledge of NCD and their attitudes toward incorporating NCD care into their existing roles.

1.2 Statement of the Problem

Despite the increasing burden of NCDs in Zambia, there is limited information on the level of awareness and attitudes towards these diseases in Kabwata, which could hinder effective prevention and control efforts. Therefore, this study aims to fill this gap by examining the knowledge and attitudes of the population towards NCDs, identifying factors that may influence awareness and attitudes, and providing recommendations for improving public health education and interventions in Kabwata."

For a long time, most of the disease burden was due to infectious diseases such as Tuberculosis, HIV/AIDS and Malaria (Kirigia and Barry, 2008). As a result, the health system in Zambia was adapted to responding to acute infections, with little place for control and prevention of chronic diseases (Aantjes *et al*., 2014). However, recent reports show that chronic NCDs like cardiovascular diseases, cancers and diabetes have been steadily adding to the disease burden of the countries' health system (WHO, 2014, MOH, 2014).

Most studies that have been conducted in Zambia on NCDs have largely focused on quantifying the disease burden and the associated risk factors (Goma *et al*., 2011, Mulenga *et al*., 2013, Nsakashalo-Senkwe *et al*., 2011, Nzala *et al*., 2011, Rudatsikira *et al*., 2012, Siziya *et al*., 2011, Siziya *et al*., 2012).

However, there is limited information in literature on awareness and attitudes towards non-communicable diseases, which has been demonstrated in such studies.

1.3 Justification/Rationale

This study is very vital in understanding the extent of the problem and it can be useful when designing intervention strategies targeted at promoting and upholding good awareness and attitudes towards NCDs toward Non-Communicable Diseases among residents of Kabwata.

It is with deep understanding that the study is a contribution of significant information for the Ministry of Health to develop a robust system that will see devolution of certain NCDs' health services to improve on NCDs prevention, management, and control in Kabwata and scale up to the rest of the districts in the country. The study also serves as a baseline for future evaluation of the prevention of NCDs, through promotion of behaviour change and systems strengthening.

1.4 Objectives of the study

1.4.1 General objective

The general objective of the study on assessing the knowledge and attitudes towards NCDs in Kabwata is to evaluate the level of awareness and attitudes towards non-communicable diseases among residents in the community. The study aims to provide insights into the level of understanding of NCDs, their risk factors, prevention, and management options, as well as the attitudes of residents towards NCDs. The study will help to identify gaps in awareness and attitudes towards NCDs and provide recommendations for improving awareness and education on NCDs in the community. Ultimately, the study aims to contribute to the reduction of the burden of NCDs in Kabwata through increased awareness and prevention efforts.

1.4.2 Specific study objectives

1. To assess the awareness of non-communicable diseases among residents of Kabwata.
2. To investigate residents' attitudes towards non-communicable diseases in Kabwata.
3. To determine the risk factors associated with non-communicable diseases among residents of Kabwata.

1.4.3 Research questions

1. What levels of awareness do Kabwata residents have about non-communicable diseases?
2. What are the attitudes of residents in Kabwata towards NCDs, (including their perceptions of preventability, severity, and willingness to change lifestyle behaviours)?
3. What factors are associated with non-communicable diseases do residents of Kabwata know?

CHAPTER TWO

LITERATURE REVIEW

2 Introduction

Many scholars around the world have conducted studies on issues to do with knowledge, attitudes, and perception toward non communicable diseases. To have a comprehensive understanding or to acquaint with the problem and relate the research to findings of other researchers who explored the same problem in Zambia and other countries but with a different methodology, this chapter aimed to look at the literature related to roles, knowledge and attitudes toward non-communicable diseases among residents of Kabwata.

2.1 Global perspective

In the study of risk factors trends in Switzerland by Galobardez *et al.*, (2005), it was further revealed that both men and women of low socioeconomic status possessed adverse risk factor profiles. For example, current smoking among females was inversely related to decreasing occupation level, while high physical inactivity levels were predominant among low socioeconomic status men, and mean BMI increased among men of high socioeconomic status.

A study conducted in United States of America by Gregg *et al.*, (2008), this status is currently being challenged by the declining rates in the eradication of non-communicable diseases as well as marked disparities in prevalence across racial and ethnic boundaries.

In a study to evaluate the cause-specific mortality rate in the United States, Europe and Australia by Unal, Critchley and Capewell (2005), it was revealed that cardiovascular diseases are the largest cause of death. In line with the findings of the global burden of disease study, the authors also reported a reduction in the mortality rate in Britain and most of the industrialized countries.

This is likely due to the impact of an improved primary health care system and advanced medical technology, as seen for example in New Zealand where Capewell, Beaglehole, Seddon and McMurray (2000) reported a 50–75% reduction in cardiac deaths following a population-wide prevention program and modernized cardiological treatments.

The profile and impact of non-communicable diseases across different economies is well recognized. In Latin America and the Caribbean countries, which form part of the middle-income group of countries, this emerging epidemic is no exception. A study by Perel, Casas,

Ortiz and Miranda (2006) indicated a 73% prevalence of mortality from non-communicable diseases and a 76% prevalence of disability-adjusted life years (DALYs), with the major contribution being from cardiovascular diseases.

Research in China found that women who had menopause at an early age or shorter reproductive years were at higher risk of CVD than those who had menopause late (Yang *et al.*, 2017). According to Reid and Emery (2006), an ideal family history assessment would involve asking about parents, aunts, uncles, siblings and grandparents from both maternal and paternal sides. Detailed family history information can be combined with other personal information relating to behavioural and biological risk factors to assess a person's risk (Claassen *et al.*, 2010).

Concerning knowledge of NCDs, studies conducted among diverse populations in different countries have revealed varying levels of knowledge of NCDs. Accordingly, a good level of knowledge was reported to be 81.2% in Malaysia (Ithnin *et al*., 2018), 57.9% in Bangladesh (Islam *et al*., 2020), 46.7% in Spain (Casariego *et al*., 2019), 43.8% in Saudi Arabia (Rahamathulla and Mohemmed 2020), 43% in Sri Lanka (Gamage and Jayawardana, 2017), 27.7% in Malaysia (Ithnin *et al*., 2020), 25% in China (Tian *et al*., 2011), and 12.5% in Myanmar (18. Thandar *et al*., 2019). Furthermore, a finding from China indicates chronic diseases knowledge varied from 29.5 to 90.2% (Song et al., 2013).

2.2 Regional perspective

Uganda is an example of an LMIC experiencing a growing burden of NCDs. The first nationally representative study of NCDs and their associated risk factors, completed in 2014 using the WHO STEPwise approach (STEPS), revealed that 25.8% of Ugandan men and 22.9% of women had hypertension; 9.5% of men and 19.5% of women were overweight (BMI ≥ 25 kg/m2); 4.6% of participants were obese (BMI ≥ 30 kg/m2); 3.3% had raised fasting glucose including diabetes; 6.7% had raised total cholesterol levels and 11% were current smokers (Guwatudde *et al.*, 2016: Bahendeka *et al*., 2016).

In the developing countries, non-communicable diseases are also emerging as a major public health concern, and this is believed to be an attribute of the effects of industrialization, e.g. adoption of a sedentary lifestyle, poor nutrition, cigarette smoking and risky alcohol intake, coupled with improved health care in infection control and improved general mean life expectancy (Yusuf, Reddy, Ouupun and Anand, 2001).

In the United Republic of Tanzania, Chande and Salum (2002) explored the correlation between alcohol consumption and various socio-demographics, including age, gender, occupation and level of education. The 25 – 35 years' age group showed a high prevalence, with a male predominance.

Koopman *et al*., (2016) claim that the increase of NCDs in developing countries is due to gene characteristics of the population that do not favour affluent conditions and therefore puts them at high risk of developing NCDs.

In South Africa, physical inactivity in 2000 is attributed to have caused 30% ischaemic heart disease, 27% colon cancer, 20% ischaemic stroke, 20% T2DM and 17% of breast cancers (Joubert, Norman and Lambert, *et al*., 2007).

Health surveys on university employees have reported a high prevalence of physical inactivity example, Okube and Omandi (2018) reported a prevalence of 90.7% in Kenya, while Agaba *et al.* (2017) reported 77.8% in Nigeria. However, another study in Nigeria reported a lower prevalence of 27.4% (Ige, Owoaje and Adebiyi, 2013). In South Africa, Reddy and Naidoo (2018) reported a 37.6% prevalence of physical inactivity in university staff in KwaZulu Natal, while Kolbe-Alexander, Conradie and Lambert (2013) and Hene *et al.* (2021) both reported a prevalence of 67% physical inactivity in South African employees from different sectors. In Hene *et al*. (2021) study, women had a significantly higher prevalence of physical inactivity than men.

2.3 Local perspective

Overall, the epidemic of NCDs poses challenging health consequences for individuals, families, and communities, and threatens to overwhelm healthcare systems. Moreover, knowledge gaps about NCDs and their risk factors in the general population are significant barriers to effective NCD prevention and treatment.

However, despite the enormous challenge that NCDs pose, the level of adequate knowledge, attitudes and associated factors remain unidentified in Zambia (Malambo *et al*. (2016).

As a result, a need for further study on the knowledge and attitudes towards NCDs is suggested. Hence, the present study aims to determine the level of adequate knowledge of NCDs and associated factors among adult residents of Kabwata.

Predominantly, inadequate knowledge of NCDs is one of the principal causes of high mortality, along with inadequate screening, early detection, and treatment, and insufficient diagnostic and treatment facilities available in the country (WHO, 2018).

2.4 Theoretical framework

The theoretical model of study that will be applied is the Health Belief Model (HBM).

The health belief model, developed in 1950, holds that health behaviour is a function of individual's socio – demographic characteristics, knowledge, attitudes and risk factors. According to this model a person must hold certain beliefs to be able to change behaviour. This means that promoting action to change a particular behaviour includes changing individual personal beliefs. In the HBM, the likelihood that a person will follow a preventive behaviour is influenced by their subjective weighing based on the knowledge of the costs and benefits of the action, the perception to adopt the occupational safety and health behaviours (Becker *et al*, 1980).

Antonovsky and Kats (1970), proposed a model of preventive health behaviours that was built on the HBM and included three classes of variables. 'Predisposing motivation' was influenced by the desire to avoid illness, to gain approval by others and to pursue personal values. 'Blockage variables' included a lack of knowledge and resources. 'Conditioning variables' included factors that modify the above variables, such as perceived susceptibility, socio-economic status, and previous experience.

However, according to this theory it highlights the gaps that the knowledge of an individual will be influenced based on the information the individual has and this can help the person to develop a positive or negative attitudes towards NCDs. An individual will tend to change their attitudes and practices based on the knowledge of perceived danger but some of these people they are aware of the dangers, but it is hard to practices good health measures.

2.5 Conceptual framework

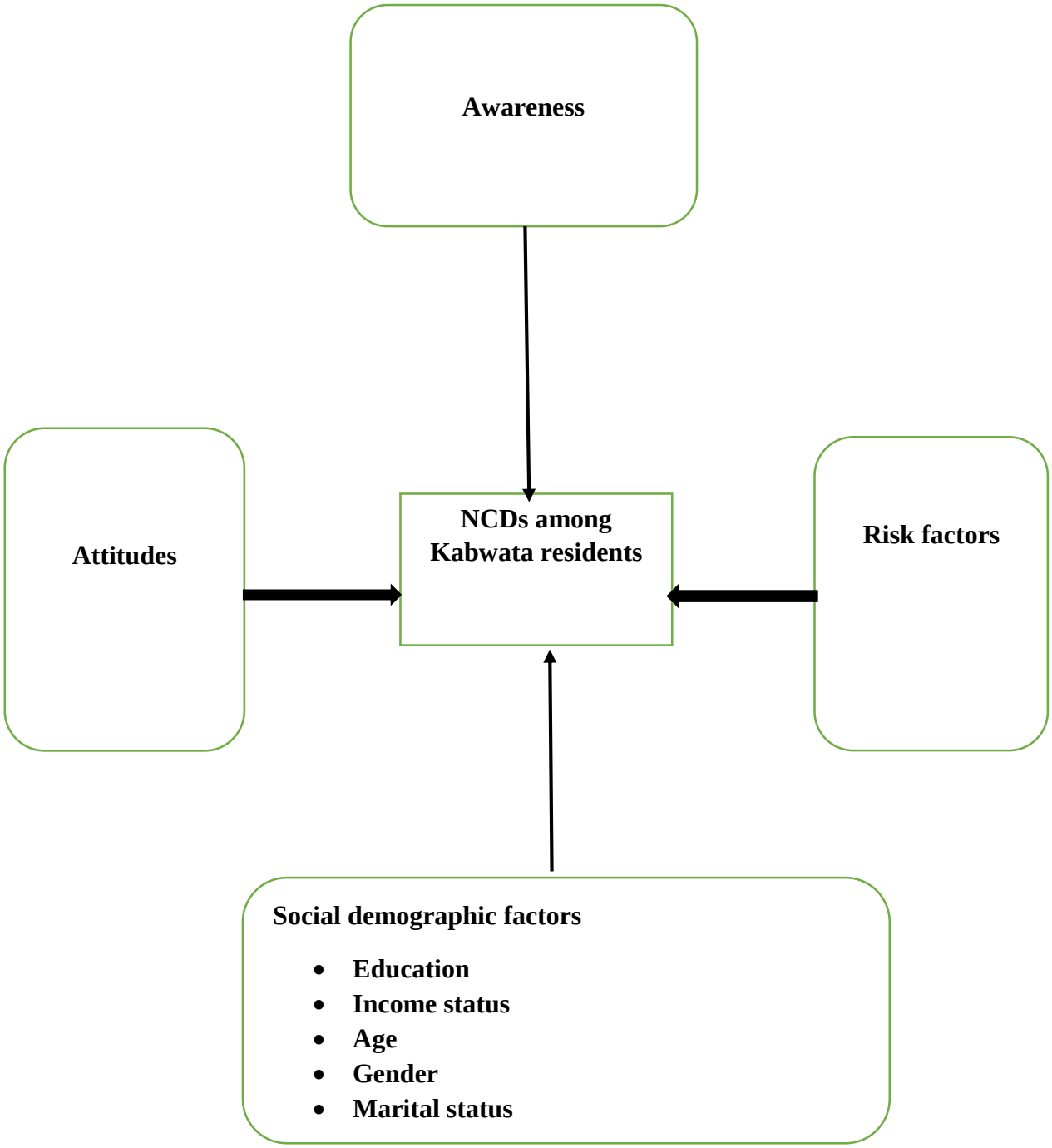


Figure 1: Conceptual Framework

The background of the Kabwata residents is linked with the awareness, attitudes and risk factors. The knowledge is also linked with the attitudes and risk factors. When a person is aware tend to have a positive attitude and influences positive behaviour of practicing towards the area involved and when it comes to NCDs they tend to protect themselves unlike the people who are unware (Becker *et al*, 1980).

CHAPTER THREE

METHODOLOGY

3 Introduction

This chapter will present the research methods used for the study. Research methods are the various planned scientific ways by which a researcher collects samples and or data and analyses it to understand a topic or subject under study better. These include theoretical procedures, experiments and statistical approaches (Gounder, 2012). This chapter will therefore explain how the data was collected, including all the procedures followed. The first section will discuss the study design, study area and setting. Thereafter, sampling procedures, data collection process and research analysis approach followed in this research will be presented.

3.1 Study design

The study employed a quantitative research approach to address the objectives through the collection and analysis of numerical data (Aliaga and Gunderson, 2000). The study employed a descriptive cross-sectional design. A descriptive study involves the observation of events occurring in a population without influencing or changing the environment, utilising a survey for data collection (Creswell, 2003).

3.2 Research design

3.2.1 Quantitative

Quantitative research can be defined as research that explores phenomena through collecting of numerical data. The numerical data is then analysed using mathematical methods, particularly statistics (Aliaga and Ganderson, 2006).

3.2.2 Target population

The target population of the study was determined by the formulae.

3.2.3 Inclusion criteria

Any resident of Kabwata area aged 18 years and older.

3.2.4 Exclusion criteria

Any resident who is below the age of 18 years and do not reside in Kabwata.

3.3 SAMPLING

3.3.1 Sampling technique

Convenience sampling was used to select respondents in the study. It was used because of its simplicity of sampling and facilitated data collection. The respondents were incorporated in the study based on their availability.

3.3.2 Sample size

Sample size for the study was determined by the formula.

$$n = \frac{z^2 p(1-p)}{\varepsilon^2}$$

Where:

n= required sample size

Z= Level of confidence (1.96 for % confidence level)

ε = margin of error (assumed to be 0.08%)

P=estimated proportion 0.25% (25% of the total population in the catchment area which is 34,566).

$$n = \frac{(1.96)^2 \times 0.25(1-0.25)}{(0.08)^2} = 112.54$$

n=110

3.4 Data collection

Structured questionnaire was used to collect data among the respondents. The structured questionnaire was ideal for the study because it contained options from which the respondents could choose from. Data which was obtained from structured questionnaire and was analyzed.

3.5 Data analysis

After the collection of data from the sample of respondent, each questionnaire was checked for accuracy so that we ensure that questions were answered. The data collected was coded and computerized using STATA version 14.0. Data was analyzed using STATA and Excel.

Descriptive analysis was done to come up with the frequencies of the variables. The statistical test was performed to find the effect of selected independent variable on the outcome variable where the chi-square test was used to test for significance.

The frequency tables and pie charts were used to summarize the results. Cross tabulations were used to show the relationships between variables (awareness of non-communicable diseases).

3.6 Variables

The variables that were considered in this study:

The Independent variables:

- Socio-demography
- Awareness
- Attitudes
- Factors associated with NCDs.

3.7 The Dependent variable:

Non-communicable diseases

3.8 Pre-test

The pilot study was done in Matero community pretest the items in the questionnaire. The questionnaire had items that were to assess the knowledge and attitudes toward non-communicable diseases. The aim of conducting the pretest is to establish the reliability and validity of the test items.

During the pre-test, items that were not well constructed were rephrased and those which respondents were finding difficult to answer were removed.

3.9 Ethical considerations

Approval to conduct the study was sought from the University of Lusaka Research and Ethics Committee.

The investigator obtained the informed consent from the respondents and they were assured of the confidentiality of their responses. Furthermore, the respondents were told that there are no risks that were involved for participation in the study. The respondents were also advised that participation in the study is voluntary, and they could withdraw at any time during the study when they feel uncomfortable.

CHAPTER FOUR

RESULTS

4 Introduction

The research was conducted to address the lack of information on the assessment of knowledge and attitudes toward non-communicable diseases among Kabwata.

4.1 Socio-demographic Characteristics

Table 1, summarize the social demographic characteristics of respondents in Kabwata area. A total number of 110 respondents participated in the study. The study involved 73% males and 27% females.

The majority of the respondents (66%) were married, and 19% of the respondents were single. Only a few respondents, 3% and 13% were divorced and separated respectively.

The majority of the respondents (53%) had attained a secondary level of education, and 29% of the respondents had attained primary level. Only a few respondents 11% and 7% had attained tertiary education and none respectively.

The majority of the respondents (41%) were unemployed, and 34% of the respondents who had employed. Only a few respondents, 6% and 19% were retired and students respectively.

Table 1: Socio-demographic characteristics of respondents

Variable	Frequency	Percentage (%)
Marital Status		
Married	73	66
Single	21	19
Widow	13	12
Divorced	3	3
Educational levels		
No formal education	8	7
Primary	32	29
Secondary	58	53
Tertiary	12	11
Occupational		
Employed	37	34
Unemployed	45	41
Student	21	19
Retired	7	6

Table 2: Age and Gender of respondents

The overall mean age was 29 years with a standard deviation of 5.37 years. Finally, the respondent with the minimum age was 15 years of age and the maximum was 40 years of age.

			Percentage				
	Gender	**Observation**	**%**	**Mean**	**Std. Dev**	**Min**	**Max**
Age	Male	80	73	26	5.6	20	40
	Female	30	27	23	5.5	15	40

4.2 Awareness towards NCDs among Kabwata residents

4.2.1 Heard of non-communicable diseases

The figure showed the distribution of information of participants heard on awareness of NCDs. The figure 3 shows that majority of the participants (66%) had never heard of NCDs and (34%) participants had heard about NCDs.

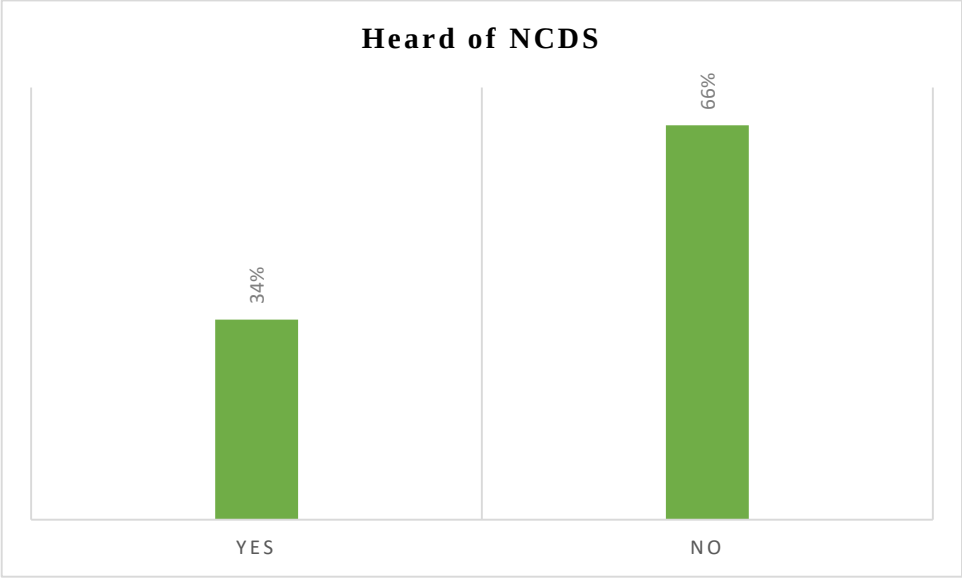


Figure 2: Heard of NCDs

4.2.2 Diseases, which are non-communicable diseases

About 69% of the respondents had indicated cancer and 16% had indicated heart diseases. 6% of the respondents had indicated that diabetes while 4% of the respondent's stated tuberculosis. A negligible proportion 2% and 2% indicated HIV/AIDS and asthma respectively.

Table 3: Diseases, which are NCDS.

	Frequency	Percentage (%)
Diseases		
Diabetes	7	6
Cancer	76	69
Tuberculosis	5	4
Heart diseases	18	16
HIV/AIDS	2	2
Asthma	2	2
Total	**110**	**100**

4.2.3 Risk factors associated with Non-communicable Diseases.

About 47% of the respondents had indicated sedentary lifestyle and 23% had indicated excessive alcohol consumption. 13% of the respondents had indicated that smoking while 10% of the respondents' stated genetics. A negligible proportion of 6% indicated environmental factors.

Table 4: Risk factors associated with NCDs.

	Frequency	Percentage (%)
Risk factors of NCDs		
Smoking	14	13
Excessive alcohol consumption	25	23
Sedentary lifestyle	52	47
Genetics	11	10
Environmental factors	8	7
Total	**110**	**100**

4.2.4 Information on the prevention and management of NCDs

69% of the respondents indicated no and no and only 31% of the respondents indicated yes to have received the information about the preventions and management of NCDs as indicated on figure 5.

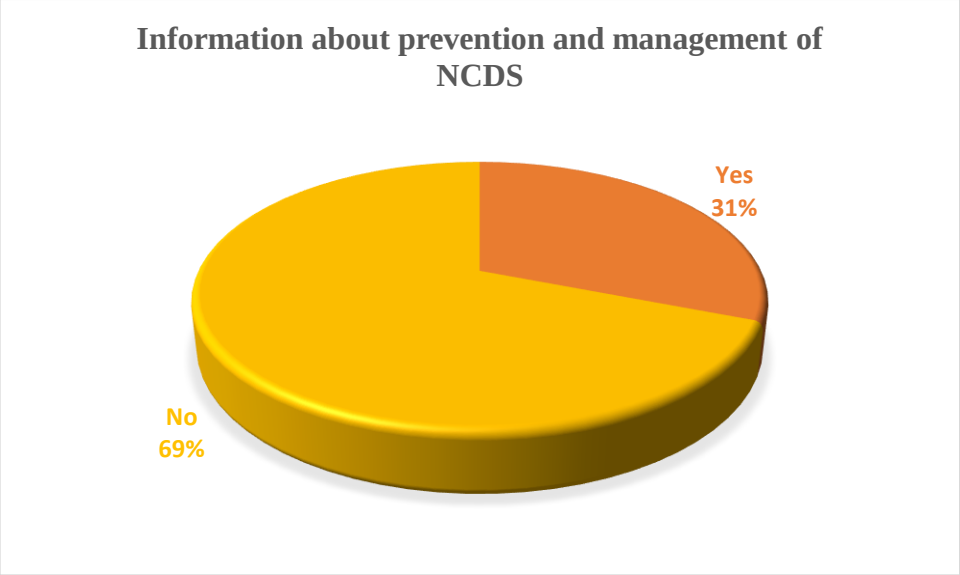


Figure 3: Information about preventions and management of NCDs

4.3 Attitude towards NCDs among Kabwata residents

4.3.1 Most of NCDs are preventable.

56% of the respondent stated that NCDs are not preventable. 30% of the respondent stated that they were not sure if there are preventable and only few respondents (14%) indicated that NCDs are very preventable as indicated in figure 6.

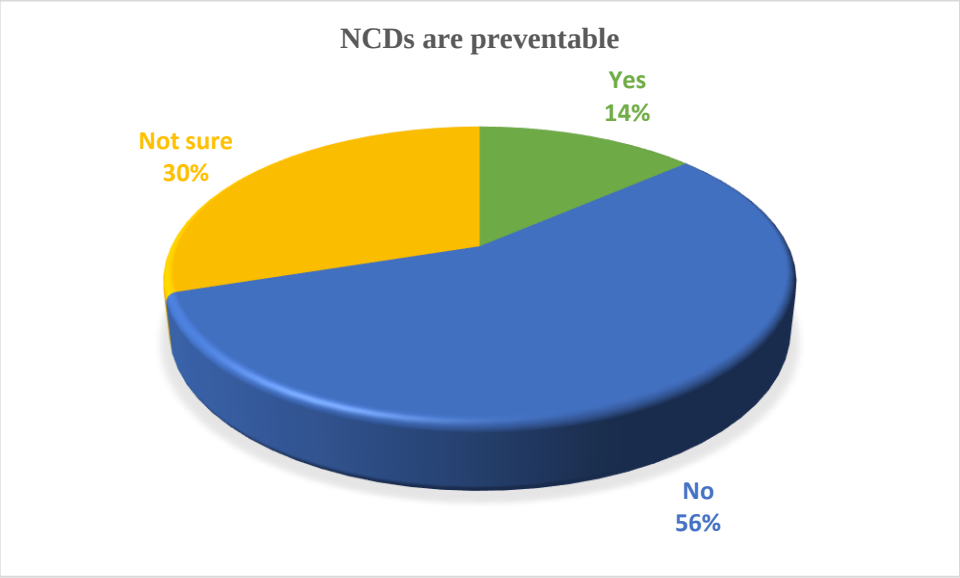


Figure 4: NCDs are preventable.

4.3.2 Change lifestyle to prevent NCDs.

Figure 7 shows that majority of the respondents (54%) indicated not they were not ready to change their lifestyle to prevent NCDs and 30% of the respondents indicated not sure. 15% of the respondents indicated yes.

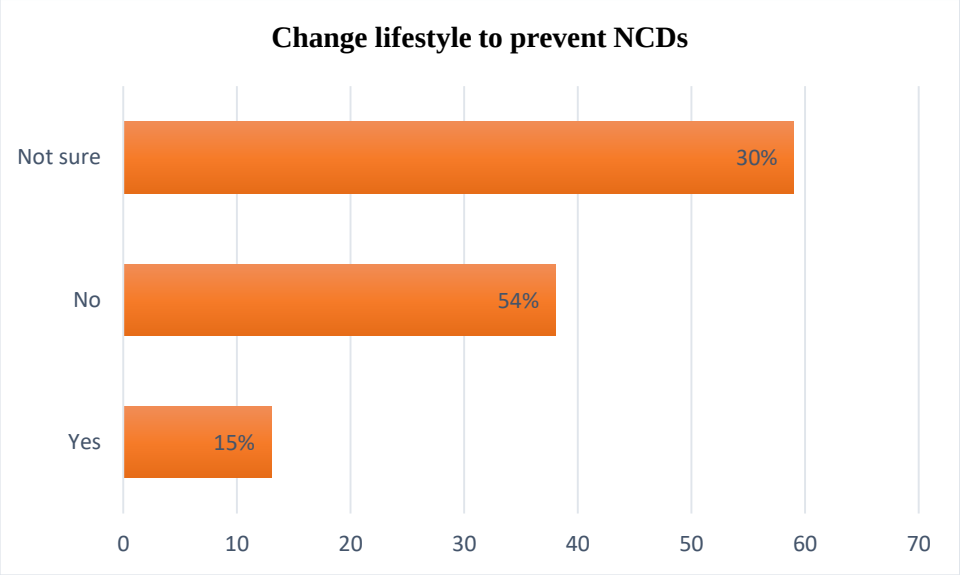


Figure 5: Change lifestyle to prevent NCDs.

4.3.3 Government should do more to prevent NCDs.

Figure 7 shows that 45% of the respondents were not sure and 37% of the respondents indicated no and a small proportion (18%) indicated that the government should do more to prevent NCDs.

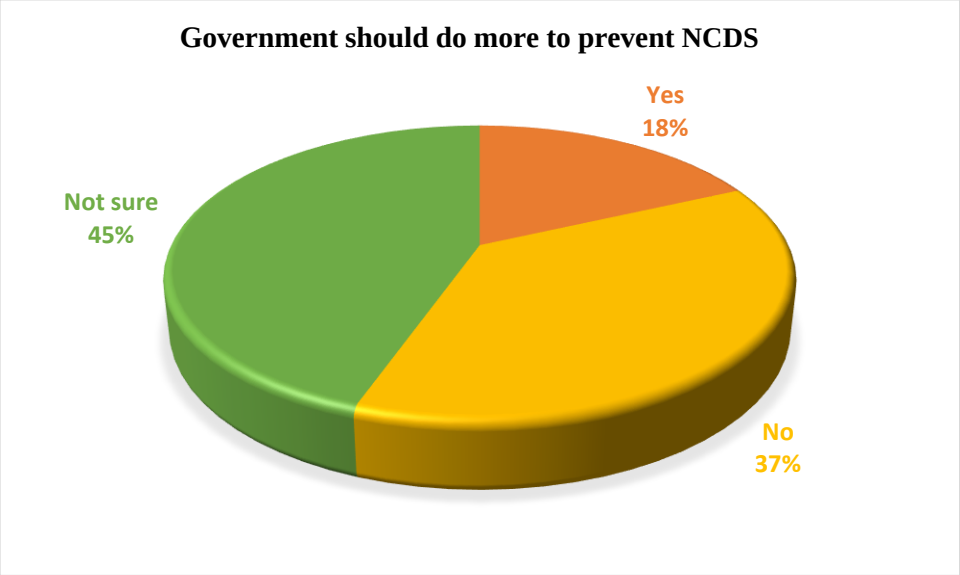


Figure 6: Government should do more to prevent NCDs.

4.3.4 Participate in awareness campaigns on NCDs.

Figure 8 indicates that 51% of the respondents indicated no while 30% indicated yes, they can participate in awareness of NCDs. Figure 8 further shows that the proportion (19%) indicated not sure.

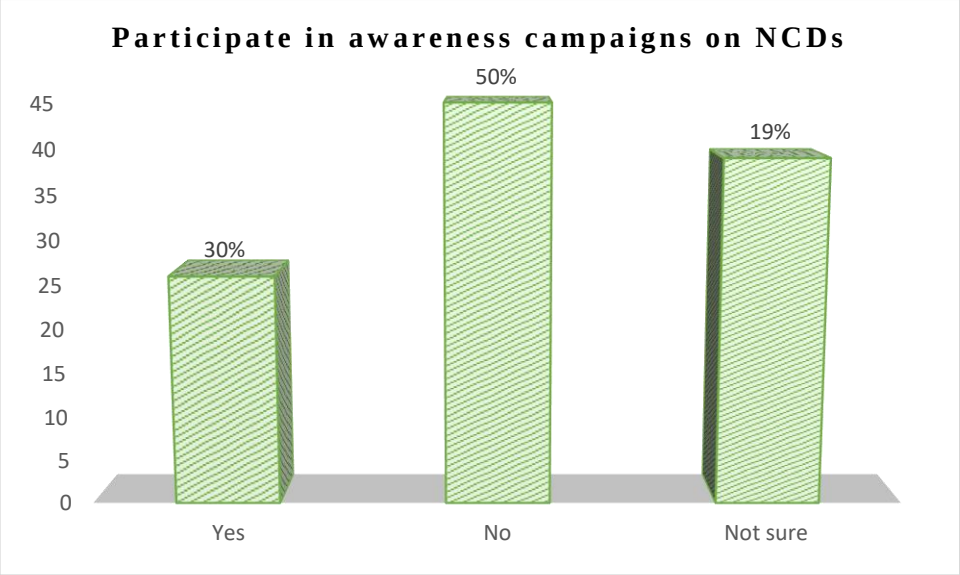


Figure 7: Participate in awareness campaigns on NCDs

4.4 Cross tabulations

4.4.1 Social-demographic characteristics in relation to Non-communicable Diseases

The statistical test results were statically significant ($P < 0.05$). This is strongly supported by the statistical test of chi-square with the p-value of 0.00, which is less than the normal p-value (0.05).

Table 5 shows that most of the respondents (73%) were male. Nevertheless, the Statistical test results for gender and awareness of NCDs were statistically significant ($p < 0.05$).

The marital status of the respondents had a strong statistical significantly majority 66% were married. While other respondents 19% and 12% were single and separated respectively. A small proportion were divorced, 2%. However, there was a significantly relation between the two variables ($p < 0.05$).

Educational status had a relationship to awareness of NCDs as the result shows that majority of the participants (53%) had attended secondary level education compared to those who had attended primary level education (29%). However, the result was statistically significant on Chi square test the results ($p < 0.05$).

The occupational status of the respondents had a strong statistical significantly majority 34% were unemployed. While for the other respondents 14% and 4% were employed and retired respectively. A small proportion were students, 2%. However, there was a significantly relation between the two variables ($p < 0.05$).

Table 5: Social demographic characteristic in relation to awareness of NCDs

Perception of NCDs

Variables	Yes (%)	No (%)	Not sure (%)	Total (%)	P-value
Age (Mean/SD)	29.1		5.37	110(100)	
					P = 0.000
Gender					
Male	25(23)	33(30)	22(20)	80(73)	
Female	0(0)	30(27)	0(0)	30(27)	
Total	**25(23)**	**63(57)**	**22(20)**	**110(100)**	**P= 0.000**
Marital status					
Single	4(3)	8(7)	9(8)	21(19)	
Married	5(4)	55(49)	13(12)	73(66)	
Separated	13(12)	0(0)	0(0)	13(12)	
Divorced	3(2)	0(0)	0(0)	3(2)	
Total	**25(23)**	**63(57)**	**22(20)**	**110(100)**	**P= 0.000**
Educational status					
None of the above	0(0)	8(7)	0(0)	8(7)	
Primary	14(13)	18(16)	0(0)	32(29)	
Secondary	11(10)	28(25)	19(0)	58(53)	
Tertiary	0(0)	9(8)	3(2)	12(11)	
Total	**25(23)**	**63(57)**	**22(20)**	**110(100)**	**P= 0.000**
Occupational status					
Employed	16(14)	2(2)	19(17)	37(34)	
Unemployed	7(6)	38(34)	0(0)	45(41)	
Student	2(2)	19(17)	0(0)	21(20)	
Retired	0(0)	4(4)	3(3)	7(6)	
Total	**25(23)**	**63(57)**	**22(20)**	**110(100)**	**P= 0.000**

4.4.2 Awareness in relation to non-communicable diseases

The association between knowledge in relation to awareness of NCDs. However, variable such as have heard of NCDs, diseases which are NCDs and risk factors of NCDs under this specific objective. The results also indicated that variable only the variable the information about preventive and management of NCDs was not statistically significant. Finally, the Chi Square Statistical test results were strongly statistically significant ($p < 0.05$) as indicated on table 8.

Table 6: Awareness in relation to Awareness of NCDs

Non-communicable diseases

Variables	Yes (%)	No (%)	Not sure (%)	Total (%)	P-value
Heard of NCDs					
Yes	15(14)	12(11)	10(9)	37(34)	
No	10(9)	51(46)	12(11)	73(66)	
Total	**25(23)**	**63(57)**	**22(20)**	**110(100)**	**P= 0.001**
Diseases which are NCDs					
Diabetes	0(0)	7(6)	0(0)	7(6)	
Cancer	12(11)	45(41)	19(17)	76()	
Tuberculosis	2(2)	3(3)	0(0)	5(5)	
Heart diseases	11(10)	4(4)	3(3)	18(16)	
HIV/AIDS	0(0)	2(2)	0(0)	2(2)	
Asthma	0(0)	2(2)	0(0)	2(2)	
Total	**25(23)**	**63(57)**	**22(20)**	**110(100)**	**P= 0.002**
Risk factors of NCDs					
Smoking	0(0)	7(6)	5(4)	12(27.8)	
Excessive alcohol consumption	0(0)	9(8)	0(0)	9(6)	
Poor diet	0(0)	0(0)	4(4)	4(4)	

Sedentary lifestyle	0(0)	18(16)	3(3)	21(19)	
Genetics	0(0)	11(10)	0(0)	11(10)	
Environmental factors	14(10)	7(6)	0(0)	21(19)	
All of the above	11(10)	11(10)	10(9)	32(29)	
Total	**25(23)**	**63(57)**	**22(20)**	**110(100)**	**P= 0.000**
Information					
Yes	5(4)	21(11)	8(9)	34(34)	
No	20(9)	42(46)	14(11)	76(66)	
	25(23)	**63(57)**	**22(20)**	**110(100)**	**P = 0.392**

4.4.3 Attitudes in relation to awareness of NCDs

Attitudes in relation to awareness. All the variables under this specific objective there were a strong relationship with awareness of NCDs. Nevertheless, the Chi Square Statistical test results on the variables were all strongly statistically significant ($p < 0.05$). Only the most NCDs are preventable variable was insignificant.

Table 7: Attitudes in relation to awareness of NCDs

Non-communicable diseases

Variables	Yes (%)	No (%)	Not sure (%)	Total (%)	P-value
Most of NCDs are preventable					
Yes	5(5)	21(19)	8(7)	34(31)	
No	20(18)	42(38)	14(13)	76(69)	
Total	**25(23)**	**63(57)**	**22(20)**	**110(100)**	**P = 0.392**
Change lifestyle to prevent NCDs					
Yes	5(5)	21(19)	7(6)	33(30)	
No	20(18)	25(23)	15(14)	60(55)	
Not sure	0(0)	17(15)	0(0)	17(15)	
Total	**25(23)**	**63(57)**	**22(20)**	**110(100)**	**P= 0.000**
Government should do more to prevent NCDs					

Yes	5(5)	21(19)	7(6)	33(30)	
No	20(18)	14(31)	15(14)	49(45)	
Not sure	0(0)	28(25)	0(0)	28(25)	
Total	**25(23)**	**63(57)**	**22(20)**	**110(100)**	**P= 0.000**
Participate in awareness campaigns on NCDs					
Yes	5(5)	21(19)	7(6)	33(30)	
No	20(18)	21(19)	15(14)	56(51)	
Not sure	0(0)	21(19)	0(0)	21(19)	
Total	**25(23)**	**63(57)**	**22(20)**	**110(100)**	**P= 0.000**

CHAPTER FIVE

DISCUSSION

5 Introduction

Many studies have been conducted on diabetes, hypertension, cardiovascular diseases and OCPDs singularly. This study was thus conducted to gain a broad perspective on the knowledge, attitude, and risk factors of the population from different residential areas within Lusaka, Zambia. Furthermore, the information acquired in this study will be useful for designing and implementing population-based strategies for the prevention and control of NCDs.

In this study awareness about NCDs was generally poor, despite the small difference between those who were aware and unaware pertaining to risk factors. General awareness was associated with age and seemingly unawareness decreased with age. These findings were inconsistent to those by Guariguata and colleagues (2015) who found that increasing age was associated with good awareness about NCDs. However, these findings were reported after controlling for age, sex, education, and marital status in the analysis. Furthermore, this decrease in awareness is of concern as people who are mostly affected by NCDs are in the age groups of 35 years and older.

It should also be noted that people who lack sufficient awareness about NCDs and its risk factors may also engage in behavior which may increase their risk of developing NCDs (Maina *et al*, 2010).

In this study there were a very big difference in proportion of respondents who were aware and unaware about NCDs risk factors. However, the large difference in awareness could be attributed to the high number of respondents who were not much aware about NCDs. On the contrary, in a study conducted in Namibia amongst formal sector employees it was found that most respondents could not correctly identify risk factors for NCDs (Guariguata *et al*, 2015).

Understanding the risk factors could assist in reducing the incidence of NCDs. The prevention of NCDs largely depends on modifying lifestyle including changing societal perceptions of 'health' and improving awareness about the risk factors of NCDs and thus steps to promote healthy behaviors and must receive urgent attention of policy makers and health care planners (Mohan *et al*, 2005).

This is concurred by Maina and colleagues (2010) who found that the level of education directly influences the level of knowledge about a particular health problem. Numerous other studies done on knowledge, attitudes, and perceptions on diabetes among people have shown similar knowledge scores in countries in Asia, Africa and even in developed countries (Mukhopadhyay, *et al*, 2010; Musasa, 2010).

These findings underscore very important aspects of providing diabetes education to communities as found out by Al-tamimi and Peterson (1998) in which they reported a historical deficiency in knowledge about diabetes and inequalities in the quality of education reaching each region in the country and that the low level of community knowledge of diabetes was reflection of the extent of health promotion intervention for most chronic NCDs.

Attitudes about aspects regarding a disease can have an impact on people's receptiveness to awareness. In this study three questions were used to assess attitudes towards NCDs and these concentrated on the seriousness of NCDs, their distribution and curability.

Although many acknowledged the seriousness of the disease almost of the respondents either were not aware or thought that NCDs was not a serious problem in Zambia. This may suggest that there are other diseases that take priority and therefore viewed as more serious.

In addition, unawareness of the seriousness of a condition could be due to lack of education interventions that can assist in sensitizing communities about these health conditions. Misunderstandings about curability of NCDs sing traditional herbs could be an indication that communities are seeking alternative care outside the formal health system.

NCDs being a disease of the rich is a myth which was dispelled by majority of the respondents. On the other hand, the proportion of respondents who were not aware whether NCDs are diseases of the poor or not is a concern. Poor attitudes such as this could easily result in complacency in the public.

This study found that there was unawareness about NCDs risk factors among respondents in the study areas. This finding implies that households were unable to identify the ramifications of NCDs in relation to other illnesses affecting them at household level.

Furthermore, improving awareness of the people can improve their attitude towards NCDs and in the long run change their practice to embrace healthier lifestyles (Maina *et al*, 2010). Improvement in practice may minimize the risk of NCDs in the public and delay the onset of

complications in those already with NCDs. It is therefore important to identify interventions that reinforce people's attitudes despite their levels of knowledge of a particular subject.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6 Conclusion

This study reveals that the general awareness on NCDs was poor in Kabwata. Despite some respondents who were aware there was still misconceptions about NCDs related complications, risk factors and its treatment. In addition, attitudes of respondents about NCDs were favorable and thus suggesting some level of understanding about NCDs. This study demonstrates awareness around NCDs which requires the active involvement of the various actors in health education.

Accounting for the disparities and uniqueness of the community will facilitate the development of appropriate strategies that will be culture sensitive as well as context specific. Furthermore, strategies will improve knowledge and therefore clear misconceptions thus leading to improvements in practices that promote healthy living.

6.1 Recommendations

Following the findings of this study, the following recommendations are made:

Health Education and Promotion:

- ✓ A comprehensive health education and promotive programme for NCDs is necessary to raise awareness. Additionally, awareness should cover areas such as NCDs prevention, management, and treatment as well as risk factors.
- ✓ Diabetes prevention interventions need to focus on health education directed to the needs of heterogeneous communities to increase knowledge.
- ✓ Intensive awareness through health education and information sharing needs to be advocated from a health perspective on NCDs to inform and educate the public at large.
- ✓ Knowledge on management of NCDs and strategies for dealing with the condition was poor thus suggesting that management of NCDs should be included in education of the public.
- ✓ A more systematic education programmed for NCDs education is necessary and should be implemented at all levels of healthcare, from the community to the highest referral level.
- ✓ Such community health education interventions for diabetes need to consider the disparity and uniqueness that exist between genders, age groups, place of residence, education level and employment status.

Policy Issues:

- ✓ Community Health and Health Promotion Strategies of the Ministry of Health and Social Services should be tasked with health education and promotion related to NCDs for NCDs to be constantly on the agenda.
- ✓ Health education on NCDs should be included in the continuing education programme for health care workers.
- ✓ Health education on NCDs should be incorporated into the school health curriculum and be taught at all levels of education so that people can be aware of the condition very early in life.

Management Issues:

- ✓ Health education and promotion should be included in the national, regional and district health plans.
- ✓ NCDs awareness campaigns should be allocated financial and human resources under the district, regional and national level budgets.

General Issues:

- ✓ It is important to make NCDs management everybody ‘s business since everyone is affected directly or indirectly, that is, individual, families, communities, churches, schools, all government sectors, nongovernmental organizations, business communities and industries.
- ✓ Include and encourage healthy lifestyle practices into the social and cultural ways of the lives of communities’ health education and awareness.

REFERENCES

Adjuik M., Smith T., Clark S., Todd J., Garrib A., Kinfu Y., Kahn K., Mola M., Ashraf A., Masanja H., Adazu K., Sacarlal J., Alam N., Marra A., Gbangou A., Mwageni E. and Binka F. (2006). *Cause-specific mortality rates in Sub-Saharan Africa and Bangladesh*. Bulletin of the World Health Organization, 84, 181-188.

Afifi, M. A. I and Al Adawi, S. (2008). Knowledge and perceptions of diabetes in a semiurban Omani population. BMC Public Health, 8(1), 1.

Aguiree, F., Brown, A., Cho, N.H., Dahlquist, G., Dodd, S., Dunning, T., Hirst, M., Hwang,

Al Shafaee, M. A., Al-Shukaili, S., Rizvi, S. G. A., Al Farsi, Y., Khan, M. A., Ganguly, S. S.,

Al-Tamimi, S., and Petersen, P. E. (1998). *Oral health situation of schoolchildren, mothers and School teachers in Saudi Arabia*. International Dental Journal, 48(3), 180-186.

Alwan A. (2010). *Monitoring and surveillance of chronic non- communicable diseases: progress and capacity in high-burden countries.* The Lancet, 376:1861– 1868

Bahendeka S, Wesonga R, and Mutungi G, (2016). *Prevalence and correlates of diabetes mellitus in Uganda: a population-based national survey.* Trop Med Int Health.;21(3):405–16.

Bailey S.L., Ayles H., Beyers N., Godfrey-Faussett P, Muyoyeta M., du Toit E., Yudkin J.S. and Floyd S. (2016). *Diabetes mellitus in Zambia and the Western Cape province of South Africa: Prevalence, risk factors, diagnosis and management.* Diabetes Res ClinPract. 2016; 118:1–11. Google Scholar.

Bandosz P., O'Flaherty M. and Drygas W. (2012). *Decline in mortality from coronary heart disease in Poland after socioeconomic transformation: modelling study*. BMJ (Clinical research ed.) 2012; 344: d8136.

Beaglehole, R., and Yach, D. (2003). *Globalization and the prevention and control of non-communicable disease: the neglected chronic diseases of adults*. The Lancet, 362(9387), 903-

Boutayeb, A. and Botayeb, S. (2005). *The burden of non-communicable diseases in developing countries*. International Journal for Equity in Health, 4(2), 1186-1475.

Burns, N., and Grove, S. K. (2005). *The Practice of Nursing Research Conduct, Critique and*

C., Magliano, D., Patterson, C. and Scott, C. (2013). *IDF diabetes atlas*.

Casariego E, Cebrián-Cuenca AM, Llisterri JL, Micó-Pérez RM, OrozcoBeltran D, and Otero-Cacabelos M, (2019). *OPENCRONIC study. Knowledge and experiences of spanish patients and carers about chronic disease.* Int J Environ Res Public Health. 16:1–9. doi: 10.3390/ijerph160 10039

Chen, G. Y., Li, L., Dai, F., Li, X. J., Xu, X. X., and Fan, J. G. (2015). *Prevalence of and risk Factors for type 2 diabetes mellitus in hyperlipidemia in China. Medical Science Monitor*: International Medical Journal of Experimental and Clinical Research, 21, 2476.

Coulson N, Goldstein S and Ntuli, A. (2002). *Promoting health in South Africa. An action manual. Heinemann Higher and Further Education (Pty) Ltd*. Cape Town-South Africa.

Daar A.S., Singer P.A., Persad D.L., Pramming S.K. and Matthews D.R. (2007). *Grand challenges in chronic non-communicable diseases.* Nature 450: 494–496. Doi: 10.1038/450494a.

Diabetes in Soweto, South Africa. Diabetic Medicine, 12(6), pp.546-550.

Diabetes Leadership Forum, Africa (DLFA). (2010). Diabetes: the hidden pandemic and its impact on sub-Saharan Africa. Available Online: https://www.novonordisk.com/content/dam/Denmark/HQ/aboutus/documents/SubSaharan%20Africa%20BB.pdf

Ezzati M., Lopez A. D., Rodgers A., Vander Hoorn, S. and Murray C. J. L. (2002). *The comparative risk assessment collaborating group. Selected major risk factors and global and regional burden of disease.* The Lancet, 360, 1347-1360. Global Report.

Fowler, M. J. (2008). *Microvascular and macrovascular complications of diabetes*. Clinical diabetes, 26(2), 77-82.

Gamage AU, and Jayawardana PL (2017). *Knowledge of non-communicable diseases and practices related to healthy lifestyles among adolescents, in state schools of a selected educational division in Sri Lanka.* BMC Public Health. 18:1–9. doi: 10.1186/s12889-017-4622-z

Gill, G.V., Huddle, K.R. and Rolfe, M. (1995). *Mortality and Outcome of Insulin-dependent*

Goma F.M., Nzala S.H., Babaniyi O., Songolo P., Zyaambo C., Rudatsikira E., Siziya S andMuula A.S. (2011). *Prevalence of hypertension and its correlates in Lusaka urban district*

of Zambia: a population-based survey. Int Arch Med. 2011; 4:34. View Article PubMed Central Google Scholar.

Guariguata, L., de Beer, I., Hough, R., Mulongeni, P., Feeley, F.G. and de Wit, T.F.R., (2015).

Guwatudde D, Kirunda BE, and Wesonga R, (2016). *Physical Activity Levels Among Adults in Uganda: Findings from a Countrywide Cross-Sectional Survey*. J Phys Act Health.;13(9):938–45. 9.

Hornby A. S. (2000). *Oxford Advanced Learner's Dictionary*. 6 th Ed, Oxford University Press, UK

Islam MZ, Rahman MM, and Moly MAH. (2020). *Knowledge about non-communicable diseases among selected urban school students*. J Armed Forces Med Coll Bangladesh. 15:90-3. doi: 10.3329/jafmc. v15i1.48654

Ithnin M, Nor NAUM, Juliana N, Effendy NM, Sahar MA, and Abdullah KHA, (2020). *Knowledge, attitude and practices towards lifestyle-related noncommunicable diseases (NCDs): a cross-sectional study among indigenous orang asli adults in Negeri Sembilan, Malaysia.* IIUM Med J Malaysia. 19:75–82. doi: 10.31436/imjm.v19i2.1569

Ithnin M, Nor NAUM, Nordin NJ, Effendy NM, Sahar MA, and Abdullah KHA, (2018). *Knowledge, attitude, and practice on non-communicable diseases (NCDs) among the adult population in the urban area of Negeri Sembilan, Malaysia.* Int J Res Pharm Sci. 9(Special Issue 2):88–94. doi: 10.26452/ijrps.v9iSPL2.1747

Lim S.S., Gaziano T.A., and Gakidou E. (2007). *Prevention of cardiovascular disease in high-risk individuals in low-income and middle-income countries: health effects and costs.* Lancet 2007; 370:2054-62.

Malambo, P., Kengne, A. P., Lambert, E. V., De Villiers, A. and Puoane, T. (2016). *'Prevalence and sociodemographic correlates of physical activity levels among South African adults in Cape Town and Mount Frere communities in 2008-2009'*, Archives of Public Health. Archives of Public Health, 74(1), pp. 1–9. doi: 10.1186/s13690-016-0167-3.

Mathers C.D., and Loncar D. (2006). *Projections of global mortality and burden of disease from 2002 to 2030*. PLoS Med 2006; 3: e442.

McPherson K. (2001). *Public health does not need to be led by doctors*. British Medical Journal 322:1593-1596

Ministry of Health Zambia (2013). *Zambia Strategic plan 2013-2016. Non- Communicable diseases and their risk factors*. Version 1. Directorate of Disease Surveillance, Control and Research Non-Communicable Diseases Unit Ndeke House Lusaka Zambia.

Mulenga D., Siziya S., Rudatsikira E., Mukonka V.M., Babaniyi O., Songolo P. and Muula A.S. (2013). *District specific correlates for hypertension in Kaoma and Kasama rural districts of Zambia*. Rural Remote Health. 2013; 13(3):2345.

Mulenga MM, Zulu JM, Member C and Mutale W (2017). *Responding to non-communicable diseases in Zambia: a policy analysis*. Lusaka, Zambia.

Norman, R., Thomas. Gaziano, Laubscher, R., Steyn, K., Bradshaw, D., Group, and the S. A. C. R. A. C. and Objectives. (2007). '*Estimating the burden of disease attributable to high blood pressure in South Africa in 2000'.* South African Medical Journal, 97(8), pp. 692–698. doi: 10.7196/SAMJ.661.

Nsakashalo-Senkwe M., Siziya S., Goma F.M., Songolo P., Mukonka V.and Babaniyi O. (2011). *Combined prevalence of impaired glucose level or diabetes and its correlates in Lusaka urban district, Zambia: a population-based survey*. Int Arch Med. 2011; 4(1):2. View Article PubMed Central Google Scholar.

Okop, K. J., Ndayi, K., Tsolekile, L., Sanders, D. and Puoane, T. (2019). *'Low intake of commonly available fruits and vegetables in socio-economically disadvantaged communities of South Africa: Influence of affordability and sugary drinks intake'.* BMC Public Health. BMC Public Health, 19(1), pp. 1–14. doi: 10.1186/s12889-019-7254-7.

Onagbiye SO, Tsolekile LP, and Puoane T (2020). *Knowledge of Non-Communicable Disease Risk Factors among Community Health Workers in South Africa*. Open Public Health J. 13:430–7. doi: 10.2174/1874944502013010430

Owen, N., Healy, G. N., Matthews, C. E. and Dunstan, D. W. (2010). '*Too much sitting: The population health science of sedentary behaviour.* Exercise and Sport Sciences Reviews, 38(3), pp. 105–113. doi: 10.1097/JES.0b013e3181e373a2

Parry, C. D., Patra, J. and Rehm, J. (2011). *Alcohol consumption and non-communicable diseases: Epidemiology and policy implications*. Addiction, 106(10), pp. 1718–1724. doi: 10.1111/j.13600443.2011.03605. x.

Peer, N., Lombard, C., Steyn, K., Gaziano, T. and Levitt, N. (2014). '*Comparability of total cardiovascular disease risk estimates using laboratory and non-laboratory-based assessments in urban-dwelling South Africans: The CRIBSA study.* South African Medical Journal, 104(10), pp. 691–696. doi: 10.7196/SAMJ.8125.

Peltzer, K., Davids, A. and Njuho, P. (2011). *'Alcohol use and problem drinking in South Africa'*. African Journal of Psychiatry, 1(14), pp. 30–37.

Prevalence and Knowledge Assessment of HIV and Non-Communicable Disease Risk Factors among Formal Sector Employees in Namibia. Plos One, 10(7), p.e0131737.

Rahamathulla MP, and Mohemmed Sha M (2020). *Frequency and awareness of risk factors of non-communicable diseases among university students in saudi arabia*. Pakistan J Med Sci. 36:740–5. doi: 10.12669/pjms.36.4.2400

Siziya S., Rudatsikira E., Babaniyi O., Songolo P., Mulenga D. and Muula A. (2012). *Prevalence and correlates of hypertension among adults aged 25 years or older in a mining town of Kitwe, Zambia*. J Hypertens. 2012;1(105):2167– 1095. 1000105.Google Scholar

Song Y, Ma W, Yi X, Wang S, Sun X, and Tian J, (2013). *Chronic Diseases Knowledge and Related Factors among the Elderly in Jinan, China. PLoS One*. 8:1–9. doi: 10.1371/journal.pone.0068599

Thandar MM, Kiriya J, Shibanuma A, Ong KIC, Tin KN, and Win HH, (2019). *Women's knowledge on common non-communicable diseases and nutritional need during pregnancy in three townships of Ayeyarwaddy region, Myanmar: A cross-sectional study. Trop* Med Health. 47:1–10. doi: 10.1186/s41182-019-0137-x

Tian M, Chen Y, Zhao R, Chen L, Chen X, and Feng D, (2011). *Chronic disease knowledge and its determinants among chronically ill adults in rural areas of Shanxi Province in China: A cross-sectional study.* BMC Public Health.;11. doi: 10.1186/1471-2458-11-948

United Nations (UN) (2011). *Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-Communicable Diseases*. New York: UN; 2011.

Utilization. Fifth Edition. Philadelphia: Elsevier Saunders.

WHO (2005). *Preventing Chronic Diseases: A Vital Investment*. World Health Organization

WHO (2011). *Global Status Report on Noncommunicable Diseases 2010*. Geneva: WHO.

WHO (2018). *Noncommunicable diseases country profiles 2018 Report*. Geneva.

APPENDICES

Appendix 1: Consent Form

Topic: knowledge and attitudes towards NCDs among Kabwata residents, Lusaka, Zambia.

General information on the study

The purpose of this study is to determine knowledge and attitudes toward non-communicable diseases in Kabwata. In the case that you agree to participate in the study, you will be required to answer some questions which shall be read to you by the interviewer. The whole process should take 10 minutes' utmost to complete. You will also be asked to sign a consent form as proof of your agreement. You are therefore requested to provide honest and complete answers to the questions contained in the questionnaire. Participation in this research is voluntary.

Possible harm and/or injury

Due to the nature of this study, we do not anticipate any harm and/or injury to occur to you or your family because of your participation but should you feel uncomfortable at any point of the interview process, you are free to stop the interview.

Benefits

There are no direct benefits in this study; however, the information that shall be collected from this study will help relevant authorities to provide relevant interventions for occupational health and safety further.

Confidentiality:

All information collected in this study will not be used for any other purposes. To ensure that participants are unknown, you will not be required to provide personal information i.e. Full names and cell number(s). The report of this study will be kept private and confidential.

Appendix II: Questionnaire
Section 1: Demographic Information

1. Age: _____

2. Gender: Male / Female

3. Marital status: Single / Married / Divorced / Widowed

4. Education level: No formal education / Primary / Secondary / Tertiary

5. Employment status: Employed / Unemployed / Student / Retired

Section 2: Awareness about NCDs

1. Have you ever heard of non-communicable diseases (NCDs)? Yes / No

2. Which of the following diseases do you consider as NCDs? (Tick all that apply)

   a. Diabetes

   b. Cancer

   c. Tuberculosis

   d. Heart disease

   e. Malaria

   f. HIV/AIDS

   g. Asthma

   h. Other (please specify): _____

3. What are the risk factors associated with NCDs? (Tick all that apply)

   a. Smoking

   b. Excessive alcohol consumption

   c. Poor diet

   d. Sedentary lifestyle

   e. Genetics

f. Environmental factors

g. Other (please specify): _____

4. Have you received any information on the prevention and management of NCDs? Yes / No

Section 3: Attitudes towards NCDs

1. Do you believe that NCDs are preventable? Yes / No / Not sure

2. Are you willing to change your lifestyle to prevent NCDs? Yes / No / Not sure

3. Do you think that the government should do more to prevent NCDs? Yes / No / Not sure

4. Would you be willing to participate in awareness campaigns on NCDs? Yes / No / Not sure

Thank you for your participation.