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# **SCHOOL OF HEALTH SCIENCES**

## **MASTER OF PUBLIC HEALTH**

### **Knowledge and Attitudes toward Non Communicable Diseases among Community Health Workers; A case study of Chilanga District, Zambia**

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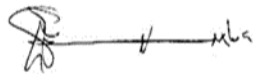
A Dissertation Submitted to the University of Lusaka in Partial Fulfilment of the Master  
of Public Health

**April 2021**

## Declaration

This report was written by me with my own interpretation and words, with the exception of quotations from circulated and/or unpublished resources which are clearly indicated and acknowledged where they are used in this report. I further declare that this report that has been submitted in partial fulfilment of Master of Public Health is my own work that has not been submitted for any other certification.

Signature:



Date: 26<sup>th</sup> April 2021

**Supervisor Endorsement**

Signature:



Date: 26<sup>th</sup> April 2021

## Dedication

This disertation is dedicated to my parents, Mr. Stephen Silwamba and Mrs. Ntasya Nakawala, my friends and entire family for the tireless encouragements, financial support towards the project during this whole process of research writing and being pillars of my strength throughout my academic life. Special appreciation goes to Ms. Abigail N. Mweemba for the support during the report writing.

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## List of Acronyms

CHA	Community Health Assistant
CHW	Community Health Worker
CSO	Central Statistics Office
DHO	District Health Office
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
KAP	Knowledge, Attitudes and Practices
LMIC	Low middle income countries
MOH	Ministry of Health
NCD	Non Communicable Disease
RHC	Rural Health Centre
SNDP	Seventh National Development Plan
SPSS	Statistical Package for Social Sciences
TB	Tuberculosis
UHC	Urban Health Centre
WHO	World Health Organisation
ZDHS	Zambia Demographic and Health Survey



## ABSTRACT

**Background:** Non-communicable diseases remain one of the main health and development challenges for many countries as they inflict on the socioeconomic fabric of countries. Non-communicable diseases (NCDs), such as heart disease, cancer, chronic respiratory disease, and diabetes, are the leading cause of death worldwide and represent an emerging global health threat. Deaths from NCDs now exceed all communicable disease deaths combined. According to the World Health Organisation (2018), NCDs kill about 41 million people each year, equivalent to over 7 out of 10 deaths worldwide.

In Zambia, there is sufficient evidence that the burden of NCDs in the country is rapidly growing, with major consequences on morbidity and mortality levels. Having adequate numbers and skills blend of competent health staff is a major factor in ensuring the delivery of quality healthcare services. However, Zambia has continued to experience shortages of health workers. The serious human resource shortage also makes staffing difficult in the fight against non-communicable diseases hence having community health workers may help improve access to quality health services at the community level. Despite the critical role that community health workers play, governments often have limited insight into their activities and quality of their services. The study sought to explore the knowledge and attitudes in the direction of NCDs among community health workers in Chilanga District.

**Methods:** A cross sectional descriptive quantitative approach was undertaken to collect data by means of semi structured interviews. Systematic random sampling of CHWs was done and data was analysed using STATA version 14. The study administered a knowledge and attitudes questionnaire to 54 CHWs members from Chilanga district and 9 key informants.

**Results:** Majority (89%) of the CHWs have heard about non-communicable diseases as they were able to indicate what NCDs are, the causes, the types and symptoms if any. There is low understanding for cardiovascular diseases and chronic respiratory disease with only 31% reporting having knowledge on them and further that the most common known type of NCDs by CHWs were epilepsy and sickle cell anemia. Most work of CHWs in Chilanga district concentrated on people with communicable diseases and that they do not have any direct role related to prevention of non-communicable diseases but they have several roles that they play in their communities. There is moderate understanding of NCDs among CHWs as nearly half of the participants had some understanding which was shown in the common known NCDs in line with WHO (2018). Majority (69%) of CHWs have a positive or moderate attitude towards the risks factors as they are more confident and feel they have more knowledge on the risk factors.

**Conclusion:** This study has indicated that, the current roles and capacity of CHWs in the management and control of NCDs remain poorly. These areas of poor knowledge should be the focus of educating CHWs in increasing their ability to provide quality care for patients. Basic knowledge about diabetes, hypertension and other NCDs remains poor while training is unstandardised and haphazard. These need to be enriched if community based NCD management is to be prosperous.

**Keywords:** Community Health Workers, Non Communicable Diseases, Knowledge, Attitudes Health system

## CHAPTER ONE

### 1.0 INTRODUCTION

#### 1.1 Background

Non communicable diseases (NCDs) for a long time were discussed as a burden of the developed world. Recent alarming statistics show a reverse trend and a vivid increase of NCDs in the developing world, in particular, in highly populated transition countries. NCDs are one of the main health and development challenges of the 21<sup>st</sup> Century and they inflict on the socioeconomic fabric of countries, particularly low and middle income countries (WHO, 2015). Having this, no country can afford to ignore the escalating burden of NCDs. In the absence of evidence based actions, the human, social and economic costs of NCDs will continue to grow and overwhelm the capacity of countries to address them.

According to the World Health Organisation, as the top cause of death in the world, NCDs were responsible for sixty eight percent of the fatalities which is thirty eight million of the world's fifty six million deaths in the year 2012 and recent data shows that NCDs kill forty one million people each year, equivalent to seventy one percent of all deaths worldwide (WHO, 2019). 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 live 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) kilometers 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).

The severe human resource deficiency makes establishment difficult in the fight against NCDs, hence having Community Health Workers (CHWs) may help improve access to quality health services at the community level. Despite the critical role that CHWs play, governments often have limited insight into their activities, the quality of their services, the conditions of the communities that they serve and how best to link these CHWs and their beneficiaries to the larger health system (SNDP, 2017).

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. According the 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.

Given the limited health and economic resources in the low and middle income countries, effective, scalable approaches for dealing with the NCDs are immediately required. In Zambia, the human resource crisis in the health sector was officially recognized as a Ministry of Health priority. Zambia has long recognized the serious shortages of health staff, as a barrier to the achievement of the national health priorities. Furthermore, the current number of staff is insufficient to meet health workforce needs. The most affected are the rural areas, which do not have satisfactory capacities to entice and retain qualified health workers (MoH, 2012). This calls for a scale up training of Community Health Workers (CHWs) in NCDs sensitisation and prevention, and in care and support for persons suffering from chronic NCD in the communities. With the human resource crisis and an urban/rural misdistribution of the workforce, and an imbalanced skills mix, community health workers are being used in dealing with this challenge and they are expected to split their period between the facility (20%) and community (80%) for household visits, community education, and health promotion activities (Shelley and Worku, 2018).

Community health workers are trained in elementary curative services that they can provide at the health facility and in the community. Furthermore, they are liable for identifying patients who are in need of recommendation to the next level in the health system (MOH, NCD SP 2013 - 2016). CHWs are supervised by nurses and are expected to offload nurses from some of their heavy workload through task-sharing. A joint management tactic at the primary health care level with patients, their families and other health care stakeholders is essential to effectively prevent many major contributors to the burden of disease.

Despite various challenges faced in the fight against NCDs, government developed the NCD strategic plan based on the WHO Global Action Plan for NCDs 2013–2030 as well as initiating a policy response. Lack of representative research evidence for some prioritised NCDs and use of

generic targets and indicators resulted in the NCD strategic plan being inadequate for the Zambian context. Based on the findings of the needs assessment and the recommendations of the NCDs symposium (MOH, NCD Symposium 2009), the health sector embarked on a number of activities intended to strengthen NCDs prevention and early detection which include development of treatment protocols for second level hospitals, where specialised clinics for NCDs are being established. Even though all these efforts being made by the government, the interventions in the strategic plan also are underutilised in the potential of preventing NCDs through health education. Recent government pronouncements were also seen to be conflicting the risk factor reduction strategies outlined in the NCD strategic plan.

## 1.2 Statement of the Problem

Availability of suitable numbers and skills blend of qualified health staff is a key factor in guaranteeing the delivery of quality healthcare services in the country. However, Zambia has continued to experience severe shortages of health staff. The main problems faced in this crisis include; the absolute shortages of health workers, inequities in the distribution of health workers and skills mix, which all favor urban areas than rural areas. The status quo is even more complex when it comes to the NCDs, as this area needs the availability of specialists. In this respect, the Ministry of Health has established structures to facilitate broad based community ownership and participation as important pillars of the health system in the governance and delivery of health services (MOH, 2015). It is also established that, Community Health Workers (CHW) are essential personnel in resource limited settings to fight disease in communities and the CHWs Program is an emerging national initiative to bring PHC as close to the home as possible.

The CHW in Zambia are however concentrated on communicable diseases, maternal and child health, yet their services could possibly be utilised in national efforts to reduce the growing burden of NCDs. CHW are also not being trained in NCDs prevention and control is also a weakness noted by the Ministry of Health (MOH, 2015), which is key in the fight against NCDs which are preventable. Ministry of Health statistics through assessments of health facilities also shows that readiness to deliver NCD care, has large gaps in human resource readiness to treat NCDs (Mukanu et al, 2017). In many cases, task shifting from health care workers to the CHW relieves time pressures, so much so that the health care staff who are based at health posts have requested that CHWs work at the health post (rather than in the community) more than two days per week.

Whilst isolated efforts are being made to tackle specific NCDs and their risk factors, the country does not have a comprehensive and unified strategy to guide the fight against NCDs. This has led to fragmentation in the approach, and weak coordination and harmonization among the sectors and partners involved in the prevention, management and control of NCDs and their determinants (MOH, NCD SP 2013 - 2016).

### 1.3 Justification/Rationale

A research gap exists pertaining to knowledge and attitudes toward Non Communicable Diseases among Community Health Workers in Chilanga District. Among the various reasons on the challenges in the fight against NCDs especially by CHWs has been attributed to a blend of reasons, not restricted to: poor training of health workers in NCDs, inequitable distribution of health workers; shortage of CHWs and that CHWs not being trained in NCDs prevention and control which results in inadequacy of community awareness on NCDs.

It's for this purpose that this study on knowledge and attitudes toward non communicable diseases among community health workers in Chilanga District was necessitated. 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 Chilanga district and scale up to the rest of the districts in the country. The study also serves as a baseline for future evaluation of the impact of the CHWs in the scale up prevention of NCDs, through promotion of behaviour change and systems strengthening at all levels care in Chilanga district.

### 1.4 Aim of the Study

The aim of the research was to explore the knowledge and attitudes toward non communicable diseases among Community Health Workers in Chilanga District.

### 1.5 General Objective

To explore the knowledge and attitudes toward non communicable diseases among Community Health Workers in Chilanga District

#### 1.5.1 Specific Study Objectives

- i. To assess Community Health Workers knowledge of non-communicable diseases in Chilanga District.

- ii. To investigate Community Health Workers attitudes towards non-communicable diseases in Chilanga District.
- iii. To investigate Community Health Worker's role in preventing diseases in communities in Chilanga District.
- iv. To explore the barriers to Community Health Workers roles in preventing diseases in communities in Chilanga District.

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## CHAPTER TWO

### 2.0 LITERATURE REVIEW

Many scholars around the world have conducted studies on issues to do with knowledge, attitudes and perception toward non communicable diseases among community health workers. In order 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 CHWs.

Community health workers are essential personnel in resource limited settings like the Zambian case. A study conducted in Uganda, on community health workers who are organised into Village Health Teams (VHTs) shows that they are focused on infectious diseases and maternal-child health (Ojo et al, 2017). The study however, indicated that their skills could potentially be utilised in national efforts to lessen the growing burden of non-communicable diseases. The study was conducted to discuss knowledge and facilitators of and barriers to incorporating NCD prevention and care into the roles of CHWs. Results of this study showed that, CHWs possessed some knowledge and awareness of NCDs but acknowledged a lack of knowledge about NCDs in the communities they assisted (ibid). Participants of the study reported little or no community awareness of NCDs and no knowledge of the causes, signs, and symptoms. Community health workers were excited about incorporating NCD care into their role and thought that they could serve as effective conduits of knowledge about NCDs to their communities if empowered through NCD education, the availability of proper reporting and referral tools, and visible collaborations with medical personnel (Ojo et al, 2017).

For barriers in conducting their work, the study revealed that the lack of financial compensation for their role is not a major barrier to providing NCD services. The study indicated that the major barriers to a CHWs role in preventing NCDs in communities were the lack of formal CHW education on NCDs, poor healthcare infrastructure, community poverty, discouraging attitudes from medical providers toward community members, and lack of assistance and support for CHWs from medical personnel (Ojo et al, 2017). From the study, participants described how they would be motivated by greater availability of equipment, uniforms, and transportation, while payment for their work was very rarely mentioned. The study concluded that developing a role for CHWs in NCD prevention and management should be a key consideration as local and national NCD initiatives are developed. This study therefore outlined that CHWs also serve in successful

roles for NCD care and prevention as providers of direct services to clients, monitoring of clients' care, peer educators for newer CHWs (Ojo et al, 2017).

In Mozambique, a study was conducted to assess the Community Health Workers knowledge, attitudes, and practices towards epilepsy in nine districts of Sofala province. The study results indicated that CHW knowledge's of medical treatment and epilepsy safety/risks were adequate. However, like other non-communicable diseases, information on the causes of epilepsy, stigmatizing attitudes, cultural treatment, and some aspects of epileptic crisis response were low in according to the study (Cumbe et al, 2019). The study also revealed that Knowledge concerning the causes of epilepsy was limited amongst CHWs comparative to the other subscales. This showed that in many set up of Africa especially low income countries, non-communicable diseases are most associated with cultural beliefs as this study showed that CHWs did not believe that epilepsy could be inherited or connected to childhood injury, but correctly recognised head injury, malaria/meningitis/fever, and brain injury as risk factors and this is against the false perception in an unpublished study done in the south of Mozambique, where the majority of population related the epilepsy cause to "bad spirits" (Ibid).

The study showed that CHWs had moderate to high levels of knowledge concerning medical intervention, epilepsy safety/risks, and some characteristics of practices through a crisis of epilepsy. Therefore, from this study, the findings showed that maintaining and strengthening these domains of knowledge regarding medical, safety/risks perceptions, and some aspects of practices during crisis for epilepsy can allow CHWs to facilitate linkages between the community and PHC (Cumbe et al, 2019). To add to these findings, Desai P et al (1998) also added that understanding the cultural beliefs provides an understanding on how people cope with epilepsy or non-communicable diseases in general. They further add that, in the absence of this knowledge, misunderstanding between CHWs, patients and health professionals may occur resulting in poor adherence to medicines (Martin A.R, 1983)

The study also looked at the attitudes of Community Health Workers towards epilepsy as a non-communicable disease. Results of the study revealed negative and stigmatising attitudes held by a notable fraction of CHWs toward people with epilepsy. Many CHWs felt that the disease should not or cannot have a regular life and are a burden to their family (Cumbe et al, 2019).

In a study conducted in Zambia by Phiri et al (2017), an exploration of facilitators and challenges in the scale-up of a national, public sector community health worker cadre, the study summarised factors that have facilitated the scale-up of the CHA/CHWs program into a nationwide CHW cadre



and the challenges of introducing and institutionalising the cadre within the Zambian health system. The study highlighted that the CHAs/CHWs play a critical role in providing a wide range of services at the community level. Some challenges still persist, that may inhibit the CHAs capability to provide health services effectively. Specific, the study highlighted infrequent supervision, lack of medical and non-medical supplies for outreach services, and challenges with the mobile data reporting system.

From the study, there were also reports of CHAs occasionally not adhering to guidelines indicating that they should spend 80% of their time in the community working on health promotion and prevention activities and 20% at the facility supporting routine services (Phiri et al, 2017). Instead, CHAs reported spending most their time at the health facilities providing routine curative services. This was attributed to the human resource constraints and high work burden at the facilities. Results showed that in order to enhance the impact of CHAs or other community health workers, key health-system support structures need to be functioning effectively, such as supervision, community surveillance systems, supplies, and reporting. The study is one the few studies that contributes to the evidence base on the introduction of formalised community health worker cadres in developing countries. The study found CHAs playing a critical role in bridging the gap between communities and facilities, providing a wide range of preventive, curative, and referral services (Phiri et al, 2017).

In another research conducted in South Africa looking at the roles of community health workers in management of non-communicable diseases in an urban township (Lungiswa P. et al, 2014), it showed that CHWs also played a critical role in the prevention and curative of NCDs as they offer health education during home visits. The study found that CHWs played several roles in communities where they served including being advisors, rehabilitation services, monitoring of clients as CHWs assisted members with information that would enable them to better manage their conditions. Another CHWs role as found in the study was linking clients with the health system. CHWs referred people who were recognised with high blood glucose levels as well as raised blood pressure to the nurse supervisor, who then referred the clients to the nearest health facilities. The discoveries of this study showed that CHWs accomplish a variety of roles in the management of NCDs. As such they have a crucial role in community level NCD public health care in South Africa. It is evident that the varieties of roles fulfilled by CHWs seem to be in response to clients' needs. Nevertheless, as established in the study, their knowledge and available support material may need to extend beyond health-related issues, especially in communities with social problems (Ibid).

The study also highlighted the shortfalls in CHWs' knowledge, in that information provided was not always accurate. Inability to clarify certain nutrition concepts emphasises the need for training and continuous education that is tailored to the context that addresses the everyday realities of CHWs. One of the key roles for CHWs has been to link community members to the health facility. In this study this role was fulfilled in numerous ways, such as the delivery of medication and referral of clients identified in the community to a health facility. The study further showed that there are a number of limitations and challenges to the roles and responsibilities of CHWs in a NCDs programmes. For example, home visits were not utilised greatly, as these could serve as places where health education is delivered. In addition, the work of CHWs concentrated on people with NCDs, thus excluding the population at risk which could benefit from their services. In a place where there is an increase in NCDs there is a need for primary prevention, and CHWs can be used in communities to identify those at risk (Lungiswa P. et al, 2014).

In another cross sectional study of CHWs conducted in Cape Town South Africa, a study that looked at the roles, training and knowledge of community health workers about diabetes and hypertension (Tsolekile, et al, 2017). The study findings showed that the existing roles and capacity of CHWs in the management and control of non-communicable diseases (NCDs) remain poorly understood. The study showed that the roles done by CHWs are wide, varied and essential for diabetes, hypertension and other NCDs management. However, basic knowledge about diabetes and hypertension remains poor while training is unstandardised and disorganised. To address this burden and to provide continuity of care for NCDs, it is increasingly recommended that services be offered outside of health facilities in communities (Ndou et al. 2013). However, in South Africa, CHWs provide community-based care, their efforts have been focused on homebased care for people with HIV and TB, with little done in the area of NCDs. There is a scarcity of information describing the processes required to integrate NCD care into the work of generalist CHWs, including training, supervision and orientation into roles. Where it has been assessed, studies have suggested that CHWs lack essential knowledge of chronic diseases (Bradley and Puoane 2007; Sengwana and Puoane, 2004).

The study further found that the Knowledge associated to diabetes and hypertension Knowledge of diabetes and hypertension among CHWs was poor, with mean scores being one third of the expected knowledge scores. Tallies for preventive measures were slightly better than for the risk factors and complications. Further, through regression analysis, it showed that having regular supervision (greater or equal to 1 month) is strongly associated with both diabetes and hypertension knowledge. Training in NCDs or years of basic schooling was not associated with

improved scores. Cherrington et al. in their study found that CHWs' lack of knowledge regarding diabetes provided misguided information to patients (Cherrington et al. 2008). Misinformation has the potential to lead to serious medical consequences. However, Cherrington et al. warn that the scope of information that CHWs are responsible for should be re-examined to avoid overburdening CHWs.

## 2.1 Conceptual Framework

Figure 1 show a conceptual framework illustrating a number of factors which play a role in the fight against NCDs through CHWs. A strong health system, including supervision of CHWs has as a positive influence on CHW performance and has been associated with NCDs knowledge when coupled with training (Labhardt et al, 2010). There are also multiple NCD related knowledge bases apart including formalised training and other a processes of knowledge acquisition which are essential in the capacity building of CHWs skills and knowledge. These alternative sources of knowledge open the possibility for informal training where knowledge transfer occurs through supervisor led induction and peer led education (Tsolekile et al, 2017). The framework highlights the need to attend to local cultural believes, local terms and practices towards NCDs when designing programs of NCD prevention and care, and the dissemination of different local terms of NCDs in different parts of the country. Furthermore, adequate training of CHWs will also improve their bridging role to Primary Health Care (PHC) by strengthening referral and in communities served by CHWs.

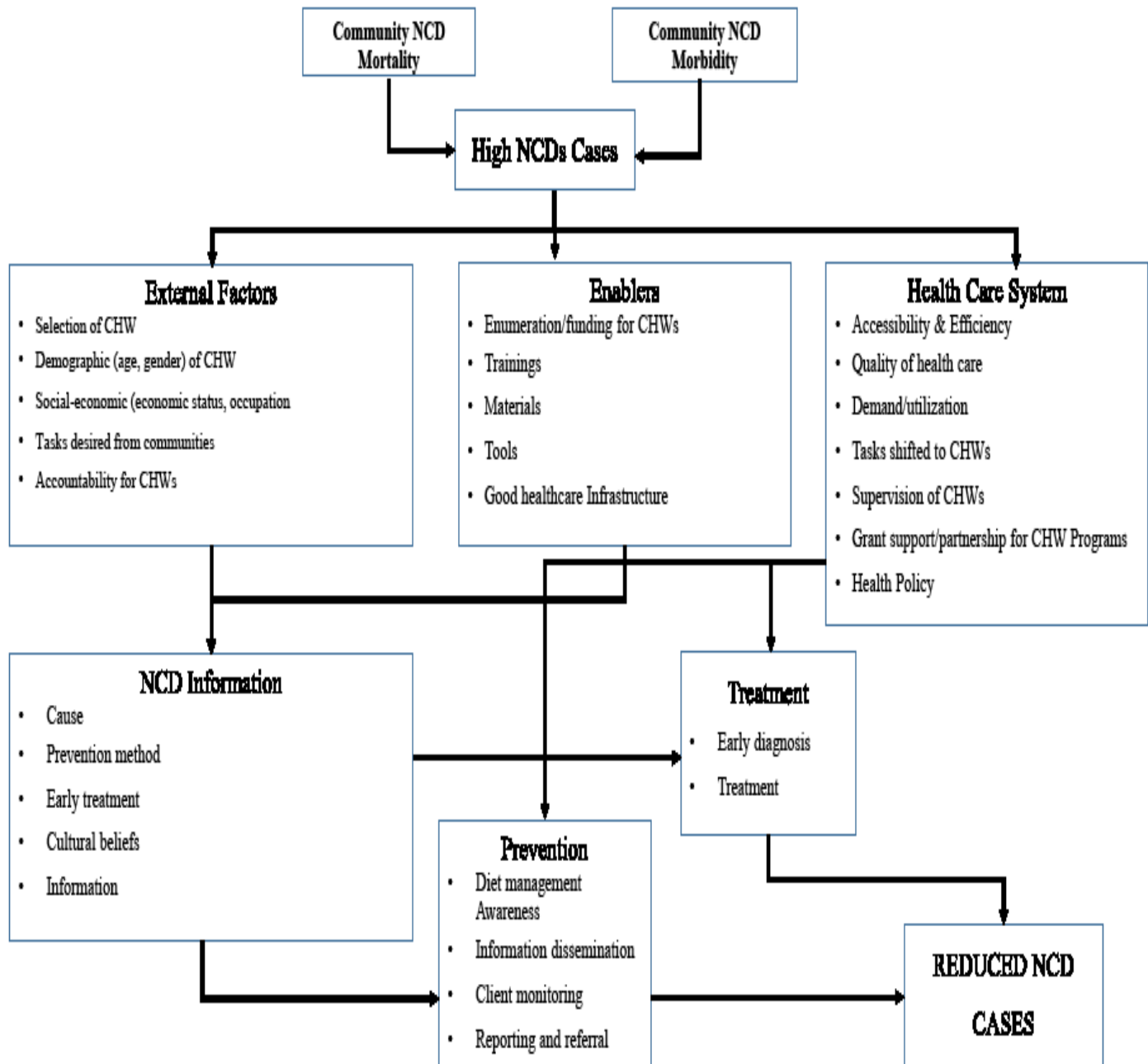


Figure 1: Conceptual framework of effective use of CHWs in the management of NCDs.

Source: MPH 531 – Epidemiology Class Assignment by G Silwamba et al, University of Lusaka, 2018

## CHAPTER THREE

### 3.0 METHODOLOGY

#### 3.1 Study Design

This study was a cross-sectional (descriptive) quantitative approach as quantitative data was collected by semi structured interviews. To assess the knowledge and attitudes toward non communicable diseases among Community Health Workers, quantitative methods were used to produce a wide and thorough exploration of knowledge and attitudes toward non-communicable diseases among Community Health Workers in Chilanga District. An interviewer administered questionnaire was used to determine the roles, training, knowledge and attitudes towards NCDs. Descriptive analyses of these domains and multivariate analyses of the factors associated with CHWs' knowledge of NCDs were conducted.

#### 3.2 Study Setting

Chilanga district is about 15 kilometers south of Lusaka district and is multi-ethnic with residents working in Lusaka district and surrounding areas (Smart Zambia Institute, 2019). Chilanga district shares boundaries with Kafue district on the south east, Mumbwa district on the west, Lusaka district on the north and Chibombo district on the north western part.

The study was carried out in selected government (GRZ) health facilities in Chilanga district. According to the 2020 Zambia Health Management Information System (HMIS), Chilanga had 18 Health facilities in total (excluding ZNS, ZAF, ZCS and Private Health Facilities) health facilities providing health care with a coverage of 157, 290 people (MoH, 2013 and Zambia HMIS, 2020).

#### 3.3 Study Population

Systematic random sampling of community health workers in selected health facilities were done. Systematic random sampling is where respondent are randomly picked through in orderly manner either through linear or circle systematic sampling. Sampled members from a larger population are selected according to a random starting point and a fixed, periodic interval. For this study, periodic interval was at two until the required sample was met.

Key Informant Interviews were conducted with nine (9) health facility in charge of community health workers from the selected six health facilities, one from each facility. One (1) officer at Chilanga District Health Office and one (1) at Lusaka Provincial Health Office in-charge of community health workers were interviewed.

### 3.4 Eligibility Criteria

#### 3.4.1 Inclusion Criteria

These are characteristics that subjects or respondents should have in order for them to qualify for the study. Therefore, for this study, CHW respondent was any person who is 18 years and above and has been working/helping a health facility with work load irrespective of their gender for at least three months.

#### 3.4.5 Exclusion Criteria

These are characteristics which disqualifies the subjects or respondents from the study. Therefore, for this particular study, all CHWs below 18 years irrespective of gender were excluded because they cannot give consent on their own. All CHWs who are 18 years and above who are not residents of Chilanga district were be excluded.

### 3.5. Sample Size Calculation

According to Glenn D Israel (1992), for a study like this, the sample size may be calculated using the following simplified formula were 95% confidence level and  $P = .5$  [percentage of picking a choice or response ( $50\% = 0.5$ )] are assumed.

$$n = \frac{N}{1 + N (e^2)}$$

Where:

$n$  = Is the sample size

$N$  = Is the population size

$e$  = Is the level of precision

Therefore,

$$n = \frac{65}{1 + 65 (0.05^2)}$$

$$n = \frac{65}{1.1625}$$

$$n = 56$$

The total sample size of 56 was proportionally distributed in the 9 health facilities.

### 3.6 Sampling Design

Chilanga District has 18 GRZ health facilities and only 9 health facilities have community health workers, therefore, simple random sampling method was used to select health facility from the nine (9) facilities. Secondly, systematic sampling was used to select CHW for interviews until the required sample size for a particular health facility is met.

### 3.7 Data Collection Methods

The research study conducted key informant interviews (KII) to collect data from nine supervisors of the CHW, one DHO and one PHO. A well-structured questionnaire was used to collect data from Community Health Workers in sampled facilities in Chilanga district.

### 3.8 Data Processing, Management and Analysis

Data was analysed using STATA version 14. Percentages and frequency distribution tables were produced using STATA and it was used to draw inferences between the dependent and independent variables for data presentation. The level of significance was 5% for this study. Chi Square tests were performed in establishing relationships between categorical variables. STATA was used because it allows you to have more than one do-file opened at a time. Using do-files is significantly quicker than using the menus by having template do-files, especially for creating graphs. Results from STATA was further taken to Microsoft Excel for further design of tables, charts and graph were necessary.

#### 3.9.0 Validity and Reliability

##### 3.9.1 Validity

Validity entails how correct the results of the research are and it takes two forms which includes internal validity and external validity. Internal validity is where a study follows the standard set protocols and makes reasonable sense, hence it's internally valid. The interventions were put in place here include:

- Increased randomisation of the samples to reduce sample bias.
- Controlling more variables by using a closed ended questionnaire to make sure as few things as possible change.

##### 3.9.2 Reliability

In order to increase reliability for the study so that the results are measureable and consistent, the data was done from different health facilities which are far apart from each other. Secondly,

to increase reliability, the administering of questionnaires was done in the morning when the minds of respondents were still fresh so that they give factual information.

### 3.10.0 Ethical Considerations

Prior to the collection of data, there was ethical clearance sought which was obtained from Research Ethics Committee of the University of Lusaka and another clearance from the National Health Research Authority. A written permission from Chilanga District Health Office was also obtained before conducting any interviews in the facilities. The study applied the research ethics principles. Respect for Persons who participated was upheld. Participants were treated with autonomous as they were able to make their own decisions about what to do and what to agree to. Participants were provided with complete information about a study and decided on their own whether to enroll or not on their own. The Principle of beneficence was also applied. The research ensured no harm was done as the purpose of the research was to discover new information that would be helpful to society. The research did the best to minimise any possible risks and to maximise the benefits for participants. Justice was applied in the study as the questions that were asked in the study were of relevance to the community health workers participating in the study.

Participants were assured that no information pertaining to their identity was recorded during data collection and reporting stages of the study, hence ensuring confidentiality. All study participants completed a consent form before participating in the study. The research did not use embarrassing questions or threatening questions/statements when collecting data. Once approval was sought through signing of the consent form, the interview begun and respondents were thanked for their participation at the end of the interview.



## CHAPTER FOUR

### 4.0 ANALYSIS AND PRESENTATION OF RESULTS

#### 4.1 Introduction

This chapter presents results of the study regarding the knowledge and attitudes among community health workers towards NCDs. A total of 56 community health workers were sampled and 54 were available and consented to participate in the interview giving a 96% response rate. The community health workers (CHWs) were selected using simple random sampling using Microsoft Excel.

#### 4.2 Socio-Demographic Characteristics of Community Health Workers

This section presents the demographic results of the respondents in terms of the sex, age, level of qualification, working experience as community health worker (CHW) as well as training for CHW. Demographic questions were designed to help the study to determine what factors may influence a respondent's responses, interests and opinions. The age of a person usually determine his/her knowledge and experience with the focus of the survey. Collecting demographic information enables one to cross-tabulate and compare subgroups to see how responses vary between these groups. Table 1 shows the socio-demographic characteristics of the community health workers in Chilanga district who were part of the survey.

From the 54 community health workers who were interviewed, 66.7% (n=36) were females while 33.3% (n=18) were males. Majority of the respondents were between 30 to 34 years having 28% of the respondents and the mean age was 35.6 years as shown in Table 1. Majority of the respondents were married with 61% (n=33) followed by those who are single with 22% (n=12). Few were separated, widowed or divorced as each was only represented by 6%.

Determining the level of education in this type of study was also essential as the respondents who completed a tertiary level may answer questions differently than those whose education ended in secondary school, primary school or no formal schooling. Most community health workers have had some secondary education with 61% (n=33) indicating they had been to secondary school. Tertiary education had a fair number with 33% indicating that they had completed and doing some tertiary education. Only a few (6%) had gone up to primary school showing that CHWs are able to grasp and take on the work that may be assigned to them by supervisors from health facilities.

Table 1: Social Demographics of Characteristics of Community Health Workers

VARIABLE	FREQUENCY	PERCENTAGE
<b>Age</b>		
<i>Mean age = 35.6 Years</i>		
20 to 24 Years	9	17%
25 to 29 Years	3	6%
30 to 34 Years	15	28%
35 to 39 Years	9	17%
40 to 44 Years	6	11%
45 to 49 Years	9	17%
50 Years and Above	3	6%
<b>Total</b>	<b>54</b>	<b>100</b>
<b>Sex</b>		
Male	18	33%
Female	36	67%
<b>Total</b>	<b>54</b>	<b>100</b>
<b>Marital Status</b>		
Single	12	22%
Married	33	61%
Separated	3	6%
Divorced	3	6%
Widowed	3	6%
<b>Total</b>	<b>54</b>	<b>100</b>
<b>Level of Education</b>		
Primary School	3	6%
Secondary School	33	61%
Tertiary	18	33%
<b>Total</b>	<b>54</b>	<b>100</b>
<b>Work Experience as CHW</b>		
Less than 3 months	6	11%
3 to 6 months	4	7%
7 to 11 months	7	13%
1 year to 2 years	8	15%
2 to 4 years	5	9%
More than 4 years	24	44%
<b>Total</b>	<b>54</b>	<b>100</b>
<b>CHW Training/Orientation</b>		
Yes	30	56%
No	24	44%
<b>Total</b>	<b>54</b>	<b>100</b>
<b>NCD Related Training/Orientation</b>		
Yes	6	20%
No	24	80%
<b>Total</b>	<b>30</b>	<b>100</b>

Source: Author, Field Data, 2021

The extent of work experience a community health worker has may be important in someone having knowledge about a health conditions including NCDs as they may have come across it during their work or interaction with colleagues. For the characteristics of work experience for community health workers, as shown in Table 1, only 18% had worked for less than 6 months as a CHW while the majority had been working or done work as community volunteers for more than 2 years with 54% of the respondents having this experience. This meant only the other 46% had experience of less than 2 years as community volunteer or community health worker.

In addition to work experience, training and orientations may be important factors in the successful implementation of tasks given. In this study, only 56% of the community health workers had undergone some kind of training or orientations in the period they have been working as CHWs. From those with a background of orientation, only 20% (n=6) said their training or orientation had touched on non-communicable disease. For the duration of the trainings/orientation, 6% indicated that their training was for 7 days or less while 17% indicated having a training for a month and none indicated having had a refreshers trainings/orientations.

## 4.2 Knowledge on NCDs among CHWs

### 4.2.1 CHW Awareness of Non Communicable Diseases

Participants of the study reported having had heard or having knowledge on non-communicable diseases as 89% (n=48) report that they were aware of NCDs and have knowledge on the causes and symptoms of certain NCDs if any. The other 11% (n=6) report having no knowledge of the causes, signs and symptoms of NCDs as shown in Figure 2.

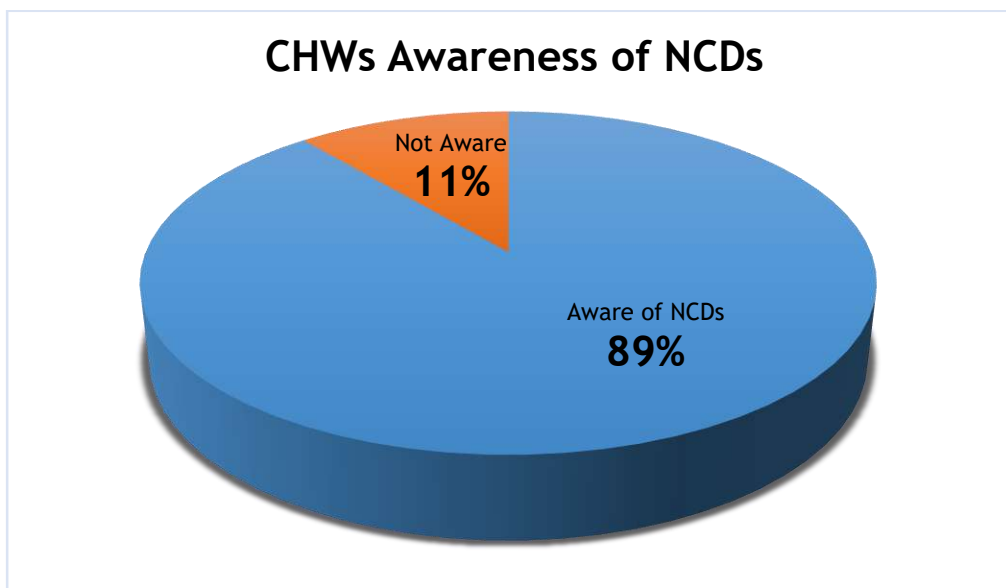


Figure 2: CHW awareness of NCDs

From those who said they are aware, 42% (n=20) further indicated that they had done some voluntary work related or dealing with non-communicable diseases, while 58% (n=28) had not done any NCDs related work before.

#### 4.2.2 Understanding of NCDs known by CHWs

##### 4.2.2.1 Common known NCDs by CHWs

Non-communicable diseases are diseases of long duration and usually slow progression. The four main types of non-communicable diseases according to the World Health Organisation are cardiovascular diseases (like heart attacks and stroke), cancer, chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma) and diabetes (WHO, 2018). Results of the study show that the most common known type of NCDs by CHWs were Epilepsy and Sickle cell anemia both being at 63%. Cancers were at 50% response of being known by CHWs so was diabetes at 50%. Cardiovascular diseases (like heart attacks and stroke) were not very much known as only 38% reported being aware of them. The same results was for chronic respiratory disease with only 31% reporting having knowledge on them as shown in Table 2.

*Table 2: Common known Non-communicable Diseases by CHWs*

NCD	FREQUENCY	PERCENTAGE RESPONSE
Epilepsy	30	63%
Sickle cell anemia	30	63%
Diabetes	24	50%
Cancers	24	50%
Insomnia	24	50%
Kidney disease	21	44%
Cardiovascular disease (Heart attack, stroke, coronary artery disease)	18	38%
Arthritis	18	38%
Chronic respiratory disease	15	31%
Down syndrome	15	31%
Unintentional injuries (e.g. traffic crashes as NCDs)	15	31%
Alzheimer's disease	9	19%

Source: Author, Field Data, 2021

Results indicates that the cardiovascular diseases (Heart attack, stroke, coronary artery disease) and chronic respiratory diseases are not on the top five (5) of the list of known NCDs by CHWs even when they are becoming top on the list of causes of death worldwide according to the World Health Organisation (2018). Non-communicable diseases (NCDs) such as heart diseases, cancers, chronic respiratory diseases, and diabetes are the leading cause of death worldwide and represent an emerging global health threat. Deaths from NCDs now exceed all communicable

disease deaths combined. This shows that there may be a gap in knowing what types of NCDs are by CHWs.

#### 4.2.2.2 Knowledge on transmission and cure for non-communicable diseases

Community health workers indicated whether or not NCDs are transmitted between individuals through environmental or physical contact. Six (6%) percent said yes they may be transmitted through physical contact while the majority, 72% (n=35), indicated that NCDs are not transmitted to individuals with some highlighting further that, NCDs are passed on from individuals through genes or that they are inherited. The other 22% (n=11) were not sure if NCDs may be transmitted between individuals through environmental/physical contact or not.

Twenty one percent (21%) of CHWs indicated that non communicable diseases are curable if they treated early or prevented by putting in place prescribed measures like good diet and regular exercise. Another 15% indicated that they are not curable as there is no cure for disease like diabetes and cancers and while 64% were not sure if NCDs are curable or not. Results of this study show that there are differences or gaps in terms of understanding of NCDs by CHWs especially looking at whether they are curable or not and how they come about.

#### 4.2.2.3 Common Risk Factors for NCDs Identified by CHWs

Community health workers were also asked to identify or list the risk factors or factors that leads to non-communicable diseases. Figure 3 shows the common factors that lead to someone having NCDs as understood by community health workers in Chilanga district.

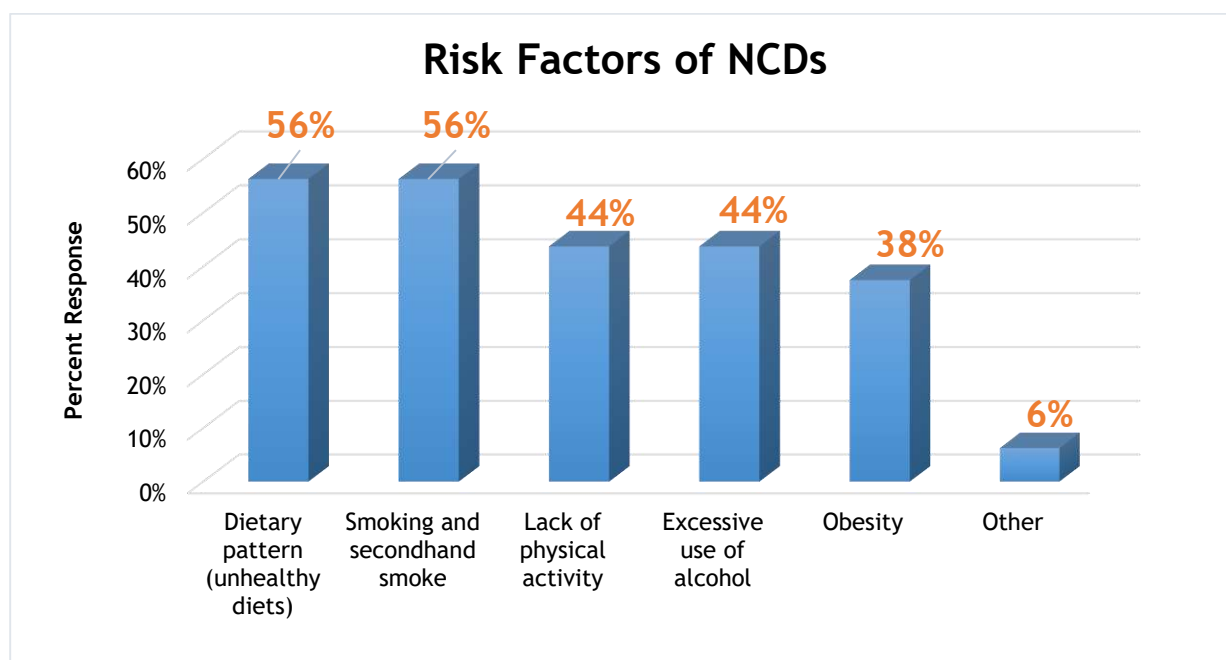


Figure 3: Identified risk factors for NCDs by CHWs

Dietary patterns and smoking were the most known causes of NCDs by CHWs as 56% mentioned that they are the lead causes of NCDs. Lack of physical exercise and excessive use of alcohol were also highlighted as common causes of NCDs with responses at 44% each. These results indicate that CHWs have a fair understanding of the causes of NCDs as the respondents were able to agree to the causes of the NCDs and state the common risk factors. Results further show that obesity was listed as another common risk factor known by CHWs that may lead to NCDs having a 38%.

#### 4.2.2.4 Preventive Measures for NCDs

With the common causes highlighted, CHWs were able to mention at least one preventive measure of NCDs. Results show that the most common known preventive measure for NCDs were that people need to be avoiding tobacco as 69% (n=33) of the respondents had mentioned this. Limiting alcohol consumption was also mentioned by CHWs (56%, n= 27), 50% (n=24) mentioned that regular exercises is key to preventing NCDs while 38% (n=18) said getting immunised against cancers may also prevent some NCDs. Results in this study, according to CHWs show that non-communicable disease may be prevented by taking on different measures which have been highlighted including regulating or avoiding alcohol intake and exercising regularly.

### 4.3 Attitudes towards NCDs among CHWs

Likert formats were used with a 6 (0 to 5) point range of responses. A Likert scale refers to multiple Likert items measuring a single conceptual domain. A Likert item, on the other hand, specifically refers to a single Likert item that consists of multiple response options. The basic assumption behind attitude scales is that it is possible to uncover a person's internal state of beliefs, motivation, or perceptions by asking them to respond to a series of statements. From the assessment on risk factors, preventive measures and NCDs complication using the Likert scale, study results show that, from the sampled NCDs, looking at different factors, on risk factor majority (69%) of CHWs have a positive attitude towards the risk factors. Results show that they are more confident and feel they have more knowledge on the risk factors for NCDs.

#### 4.3.1 Cultural Practices

Community Health workers were also assessed on their opinion on the contribution of cultural beliefs towards NCDs in communities. Results show that 44% of the CHWs believe that there are certain cultural practices that are done in communities that may accelerate or increase the chances of someone having NCDs. The other 56% said cultural practices cannot in any way accelerate or increase the chances of someone having an NCD. From those who mentioned that

cultural practices contribute to having an NCD, they had given examples including steaming and too much of traditional herbs which are not approved or proven may lead to having someone increasing chances of NCDs like cancers.

#### 4.3.2 Action taken in dealing with NCD in community

In their day to day work as CHW, they may come across an NCD case or may be reported in the community or noticed, according to CHW, different actions are taken when such happen as shown Figure 4.

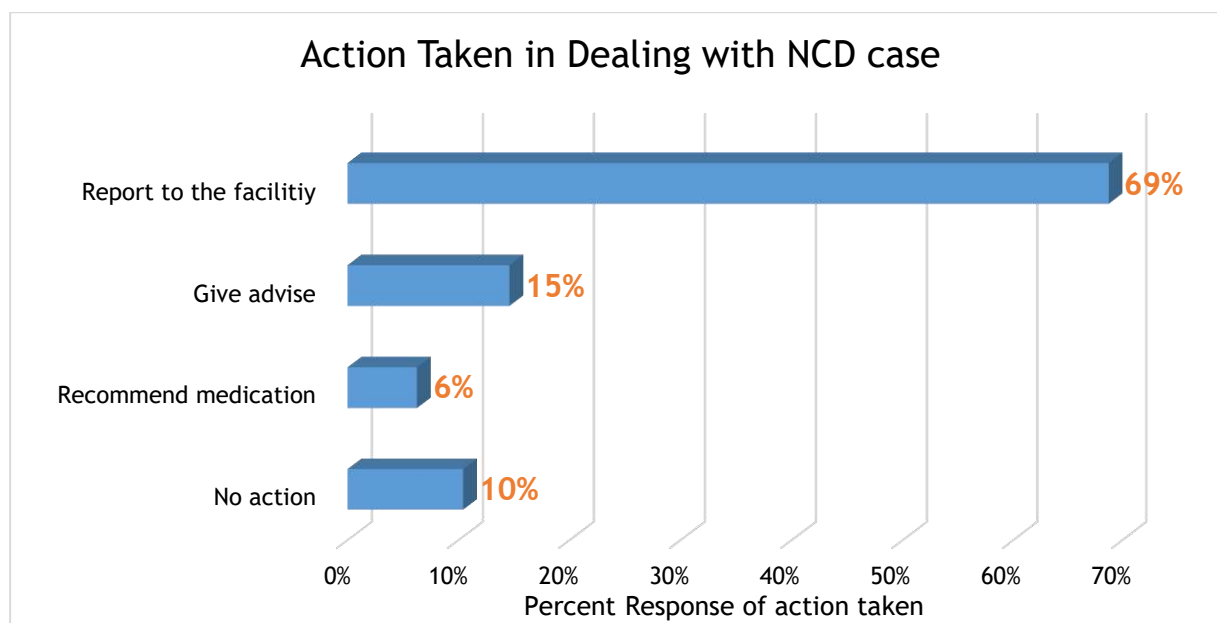


Figure 4: Action taken by CHW when dealing with NCD case in community

Results from the study shows that majority of CHWs (69%, n=33) report the cases suspected to be an NCD to the health facility for further action. Apart from reporting to the facility, some CHWs (15%) mentioned that they are able to give advice to someone on the NCD if they have information while 6% would go further and recommend medication if they are aware of the case and symptoms. This simply shows that there may be gaps in what CHWs are supposed to be doing in a case when they are faced with NCD cases.

#### 4.3.3 Attention towards NCDs in communities

According to CHWs, less attention is given to NCDs during their work as most their work involves meeting targets given to them for communicable diseases like HIV as well as OVC work related. Majority of the respondents (87.5%) said that there is little or no attention given towards NCDs in communities while 12.5% said there is some kind of attention given to NCDs. CHWs indicated

that, communicable diseases like HIV and TB (are) given more priority or more attention in their work and communities they work from. These are further backed by the key informants (100%) who mention that less attention is given to NCDs as they do not receive targets and funding to be able to track non communicable diseases in communities.

#### 4.4 CHWs Roles and Services

Community health workers from different facilities have numerous roles and services that they play on a daily basis at respective facilities and communities as shown in Figure 5.

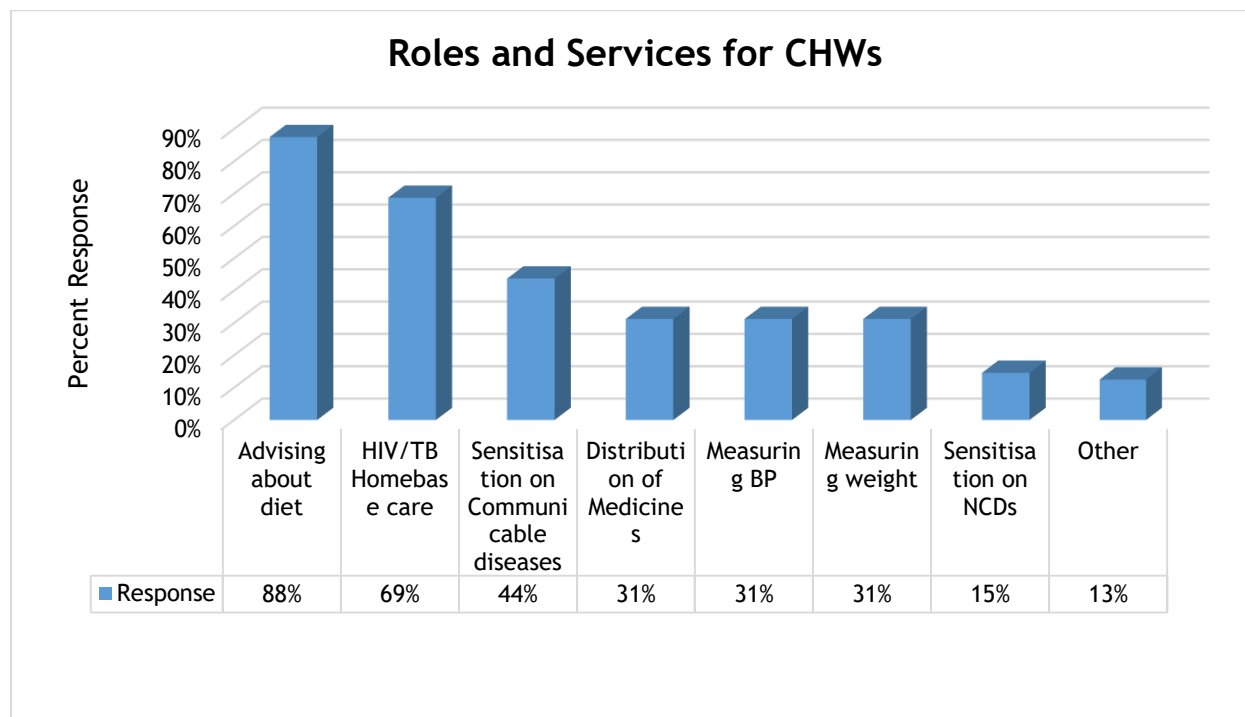


Figure 5: CHWs roles and Services

Results show that, among the common duties of a community health worker, majority (88%) give advices to community members on communicable diseases and a bit on non-communicable diseases. Second most performed task is HIV/TB home based care with 69% of the CHWs having this role followed by sensitisation on communicable diseases in communities with 44%. Most of the CHWs mentioned doing at least one of the roles as part of the daily work in communities. Other duties like community sensitisation on NCDs are not undertaken by most CHW as they are not tasked nor trained in dealing with NCDs in communities and only 15% mentioned that comes by as part of their work as there is no way of escaping it. Other roles by CHWs include counting pills, eye screening and facilitating support groups in communities. Results from all the Key informants (100%) supported at community health workers may come in handy when it comes to



the fight of many diseases including NCDs if they are well trained, supervised and given targets like it is done for communicable disease.

#### 4.5 Association between Demographic data (Sex, Age, Education, experience) and awareness of NCDs

In order to see if there are relationships between the demographic variables and being aware of NCDs, Chi Square tests were performed as these were nominal variables. A chi-square statistic is one way to show a relationship between two categorical variables. The chi-squared statistic is a single number that tells you how much difference exists between your observed counts and the counts you would expect if there were no relationship. Chi-square test was used as a test for association between two nominal variables that each have two or more possible values. Tests whether the relative proportions of one variable are independent of the other. Table 3 shows the association between the demographic data and being aware of NCDs.

For the relationship between sex and being aware of NCDs, the chi square test gave a value of 2.517, and p value of 0.113 ( $p > .05$ ). This shows that the hypothesised relationship between sex and awareness of NCDs is not significant which mean there is no a relationship between someone's gender and being aware of NCDs.

Table 3: Association for Demographic Data and Awareness of NCDs

Dependent Variable	Independent Variables	Pearson Chi-Square (Value)	Association (P-Value) Sig. (2-sided)	Fisher's Exact Test (2 sided)
Awareness of NCDs	Education Level	19.038	0.000013	0.000013
Awareness of NCDs	Age	14.712	0.023	
Awareness of NCDs	Sex	2.517	0.113	0.171
Awareness of NCDs	Work Experience	36.00	0.000 (9.4981E-7)	
Awareness of NCDs	Marital Status	4.615	0.329	

In this study, there was a statistically significant relationship between respondent's age and being aware of NCDs as supported by the p-value of 0.023 which is less than 0.05 and means that there is some relationship between the two. Comparatively with statistics above indicates that level of education may have an influence on the knowledge on non-communicable diseases and it may determine whether one would report the case or not. A p-value of 0.000013 which is less than 0.05 shows the relationship statistically significant.

Work experience may be a key factor in determining whether someone will be aware about a disease, if they will report a disease case or not, to whom will the case be reported to. Hence a

cross tabulation was done to see if indeed there is a relationship. The chi square test gave p value of 0.000 (9.4981E-7) which is less than 0.05. This shows that the hypothesised relationship between work experience and being are of NCDs is statistically significant which means there is some relationship between the two. For marital status, a p value of 0.329 which is greater than 0.05 shows that there results are not significant.

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## CHAPTER FIVE

### 5.0 Discussion

#### 5.1 Introduction

Non-communicable diseases (NCDs) such as heart diseases, cancers, chronic respiratory diseases and diabetes are public health problems that place a heavy burden on health facilities. Deaths from NCDs now exceed all communicable disease deaths combined. According to the World Health Organisation, NCDs kill 41 million people each year, equivalent to over 7 out of 10 deaths worldwide. Changing social, economic and structural factors such as more people moving to cities and the spread of unhealthy lifestyles have fueled the NCD crisis that kills 15 million people prematurely before the age of 70 each year (WHO, 2018). To address this burden and to provide continuity of care for NCDs, it is increasingly recommended that services be offered outside of health facilities in communities (Ndou et al. 2013). This section presents the discussion of the results in line with the objectives of the study that sought to assess the knowledge and attitudes towards NCDs among CHWs.

#### 5.2 Knowledge on NCDs among CHW

Results of the study revealed that majority of the community health workers have heard about non-communicable diseases with 89% indicating knowing what they are, the causes, the types and symptoms if any. However, details on the understanding of NCDs were fair the CHWs had numerous understanding on NCDs. This may be seen in the common known types of NCDs by CHWs as the study revealed the four main types of non-communicable diseases by WHO (2018) which are cardiovascular diseases (like heart attacks and stroke), cancer, chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma) and diabetes are fairly known by CHWs with results showing that only 50% of the CHWs knew about cancers and another 50% indicated they know about diabetes. These results agrees with studies by Gaziano et al, (2015) conducted in South Africa and by Ojo et al, 2017 in Uganda, which showed that CHWs possessed some knowledge and awareness of NCDs but identified a lack of knowledge about NCDs in the communities they served.

Regardless of CHWs demonstrating having some knowledge on NDCs, results further show that there is low understanding for cardiovascular diseases (like heart attacks and stroke) as they are not very well known as only 38% of CHWs reported being aware of them. The same was for chronic respiratory disease with only 31% reporting having knowledge on them. These results show that the knowledge associated to diabetes and hypertension among CHWs was moderate

to poor, with mean scores being half of the expected knowledge scores and these results agrees with a study by Gaziano et al (2015).

Results of the study shows that the most common known type of NCDs by CHWs were Epilepsy and Sickle cell anemia. These types of NCDs may be common or popular among CHWs as they have been known to around in countries like Zambia for a long time. Where it has been assessed, studies have suggested that CHWs lack essential knowledge of chronic diseases. Similar to the study findings, Jones et al, (2019) highlighted that the awareness of chronic respiratory diseases is still low among community health workers. In contrast, another study by Musoke, D et al, (2021) revealed that conditions such as sickle cell anemia and ulcers were still not commonly recognised as NCDs in Uganda as established in their study.

For the understanding of NCDs being curable or not, there is a very low understanding as they were mixed responses to whether they are curable or not, with only twenty one percent (21%) of CHWs indicating that non communicable diseases are curable if they treated early or that they may be prevented by doing the putting in place prescribed measures like good diet and regular exercise. Another 15% indicated that they are not curable as there is no cure for such disease like cancer and cancers and while 64% were not sure if NCDs are curable or not. These results shows that there is low understanding on cure of the NCDs. This finding is supported by a previous study by Cumbe et al, 2019 where there was differences of opinions related to treatments for epilepsy and other NCDs by the use of local versus non-local terms demonstrates as well as NCDs being curable or not. Studies further indicated that in the absence of this knowledge, misunderstanding between CHWs, people with NCDs and health professionals may occur resulting in poor adherence to medicines. In contrast, another study in Uganda by Musoke, D et al, (2021) revealed that among CHWs, majority thought NCDs were curable but further revealed that this general misconception among the CHWs may be attributed to the limited training they had received on NCDs as established in the study.

Further assessment on the knowledge among CHWs on NCDs shows that knowledge on the transmissions of NCDs are moderate as the majority (72%) of the CHWs indicated that NCDs cannot be transmitted between individuals through environmental or physical contact but they are passed on from individuals through genes or that they are inherited. However, there are some members with different understanding that they may be transmitted through physical contact with six (6%) percent said yes they can. The study also highlighted the shortfalls in CHWs' knowledge, in that information provided was not always accurate. These finding are consistent with previous studies which revealed that CHWs understood that NCDs were not transmissible and spoke of

risk behaviors responsible for NCDs, although their knowledge of disease-specific risk factors and characteristics was less well developed. For example, while almost 70% of participants described knowing 'a little' about diabetes, less than half of those surveyed were aware that diabetes is preventable. (Ojo et al, 2017 and Cumbe et al, 2019)

Common risk factors for NCDs identified by CHWs in this study were dietary patterns (unhealthy diets) and smoking with majority of the response by CHWs highlighting that they are the lead cause of NCDs. With support of results from key informants who indicated that 60% on average of the CHWs, may have fair understanding of the causes of NCDs. CHWs agreed or listed the causes of the NCDs and were able to state the common risk factors while others did not know or were not sure that these factors may lead to someone having NCDs. Other studies have shown that despite the potential role of CHWs in NCDs, CHWs often have poor or fair knowledge about NCDs and their risk factors (Gessel, Denman and Montano, 2015).

It was also important to assess the knowledge on what CHWs know about preventive measures for NCDs. CHWs were able to mention at least one preventive measure for NCDs which according to CHWs, non-communicable disease may be prevented by taking on different measures which have been highlighted including regulating or avoiding alcohol intake which was represented and exercising regularly. Results show that, for preventive measures, there is also a moderate understanding among CHWs with nearly half being able to indicate the preventive measures. These results agrees with a study by Cumbe et al, 2019 conducted in Mozambique on CHW knowledge's which revealed that knowledge concerning the causes of epilepsy was limited and that CHWs had moderate to high levels of knowledge concerning medical intervention, epilepsy safety/risks and some characteristics of practices through a crisis of epilepsy. These results further align with a study by Musoke, D et al, (2021) which revealed that most CHWs accurately indicated major lifestyle preventive measures such as healthy diet, avoiding smoking / using tobacco products, regular physical activity and limiting alcohol consumption as ways of preventing NCDs.

### **5.3 Attitudes towards NCDS among CHW**

Attitude according to the Cambridge dictionary is a feeling or opinion about something or someone, or a way of behaving. It is a way you feel about something or someone, or a particular feeling or opinion or a settled way of thinking or feeling about something. Different methods are used to measure or assess attitudes in research and for this study, Likert formats were used with a 6 (0 to 5) point range of responses. The basic assumption behind attitude scales is that it is possible to uncover a person's internal state of beliefs, motivation, or perceptions by asking them

to respond to a series of statements (Fraenkel and Wallen, 1996). Individuals indicate their preference through their degree of agreement with statements on the scale.

From the assessment on risk factors, preventive measures and NCDs complication using the Likert scale, study results show that, from the sampled NCDs, looking at different factors, majority of CHWs have a positive attitude towards the risks factors. Results show that CHWs are more confident and feel they have more knowledge on the risk factors for NCDs. On the other hand, for prevention measures and complications, results show that there is a fair attitude among CHWs as 41% showed negative attitude having a score of 2 or less while 59% had as score of 3 and above which represents positive attitudes on knowing what preventing measures are and the complications for NCDs. Additionally, results from other studies like by Ojo et al, (2017) and Musoke, D et al, (2021) which explored attitudes towards NCDs determined using a Likert scale (agree, neither agree nor disagree, disagree) supports this results. In relation to their potential contribution, nearly all CHWs 94.4% agreed that they had a role they could play in the prevention and control of NCDs in their communities.

Community Health workers were also asked for their opinion on the contribution of cultural beliefs towards NCDs work in communities. Results show that 44% of the CHWs believe that they are certain cultural practices that are done in communities that may accelerate or increase the chances of someone having NCDs. The other 56% said cultural practices cannot in any way accelerate or increase the chances of someone having an NCD. From those who mentioned that cultural practices may contribute to having an NCD, they had given examples including steaming and too much of traditional herbs which are not approved or proven may lead to someone increasing chances of NCDs like cancers. Study results show that CHWs may have certain attitudes towards NCDs as they believe that cultural practices are contributing to the NCDs. This finding is supported by a previous study in Mozambique by Cumbe et al, (2019) where most of the CHWs very much believed that causes of epilepsy may be related to head injury, brain injury and is accordingly to the literature, but some did not believe that NCDs can be inherited or related to childbirth injury, denoting a lack of knowledge regarding this type of NCDs. Further, in the "Cultural Treatment" subscale, a number of CHWs endorsed false cures or treatments for epilepsy.

Actions taken when a CHW find a suspected NCD case in the daily work may say a lot on how much someone cares about it or simply put attitudes towards something. Study results shows that there are several actions taken in dealing with NCD in community by CHWs. Results shows that majority of CHWs (69%) report the cases suspected to be an NCD to the health facility for further

action as a practices while other stated not taking any action. Results further show that, a few are able to give advice to someone on the NCD if they have information and some goes further and recommend medication if they are aware of the cases and symptoms. This simply shows that they may be gaps in what CHW as supposed to be doing in a case when they are faced with an NCD case which may further determine their attitude due to the what kind of work they are given to do. This finding is consistent with a previous study in Tsolekile P et al, (2018) with results that CHWs offered advice to clients, which ranged from health advice to social issues that concerned participants but further findings highlighted the lack of adherence support given to clients with NCDs, in stark contrast to the extensive support provided by CHWs to patients on HIV infection and TB treatment.

The kind of work given will usually determine how CHWs respond to situations and according to CHW and key informants, less attention is given to NCDs during their work as most the work involves meeting targets given to them for communicable diseases like HIV and OVC work related. Majority of the respondents (87.5%) said that there is little or no attention given towards NCDs in communities while 12.5% said there is some kind of attention is given to NCDs. CHWs indicated that, communicable diseases like HIV and TB and given priority or more attention in their work and communities they work from. The results here agrees with a done by Van Pletzen et al, (2014) which revealed that community health workers in many parts are employed by non-governmental organisations (NGOs) intermediaries, which are often contracted by the government to render services to communities and hence working to meeting their targets.

#### **5.4 CHW's Role in Preventing Diseases in Communities**

This study revealed that, CHWs did not have any direct role related to prevention of non-communicable diseases but they have several roles that they play in their communities. According to results, they are mainly focus on communicable diseases like HIV and TB. Additionally, key informants also added that the community health workers are employed and brought on board based on the funding agency's needs and these in turn determines their roles. Among the roles for CHWs revealed by the study include providing a link with the formal health care system, thereby ensuring a continuum of care. These results agrees with similar studies that have been done like Ojo et al, 2017 conducted in Uganda and suggests that CHWs skills could potentially be utilised in national efforts to lessen the growing burden of non-communicable diseases.

Regardless of the roles currently being done, community health workers can be used in the fight against NCDs as they are vital for longevity and the prevention of complications of NCDs. CHWs are already being applied in roles that can be used in fight against NCDs and not just donor funded

targets on communicable diseases. The study revealed that CHWs were much willing to take up the responsibility of sensitising communities on NCDs if they are challenged and empowered with information on NCDs. Results of the study further suggest that from what is being done, majority (88%) of the CHWs perform several roles including giving advices to community members on communicable diseases which suggests that they work well in the area of NCDs as well. The study results shows that CHWs plays important roles which can serve in successful roles for NCD care and prevention as providers of direct services to clients, monitoring of clients' care, peer educators for newer CHWs as also outlined in a similar study by Ojo et al conducted in 2017 in Eastern Uganda which explored the knowledge and attitudes toward non-communicable diseases among village health teams. Other roles by CHWs in communities where they served including being advisors, monitoring of clients as CHWs assisted members with information that would enable them to better manage their conditions. These results are in line and similar to the roles found by a study by Lungiswa P. et al in 2014 in South Africa on a similar subject.

### **5.5 Barriers to CHWs Roles in Preventing Diseases in Communities**

Different roles in any work may come with their own challenges and in the work of community health workers, there are a number of limitations and challenges to their roles and responsibilities. The results of this study show that non-communicable diseases are not deliberately incorporated in the daily work of CHWs and as such they did not indicate challenges. However, similar challenges which are encountered when dealing with communicable diseases may be faced when implementing work about NCDs. The study revealed that, there are several barriers in conducting work, which includes lack of financial compensation for their role as CHWs. The study results also indicates that, other major barriers to a CHWs role in preventing NCDs in communities were the lack of formal CHW education on NCDs, poor healthcare infrastructure, community poverty, discouraging attitudes from medical providers toward community members and lack of assistance and support for CHWs from medical personnel.

The study agrees with findings from other studies including a study conducted in Zambia by Phiri et al, in 2017 which cited infrequent supervision, lack of medical and non-medical supplies for outreach services and challenges with the mobile data reporting system. According to results, key informants highlighted that CHWs can make a huge contribution to the prevention of communicable and non-communicable diseases if they are allowed to spend 80% of their time in the community working on health promotion and prevention activities and 20% at the facility supporting routine services. These finding are further supported another previous study by Gessel, Denman and Montano (2015) where CHWs performed similar tasks.



## 5.6 Association between Demographic data (Sex, Age, Education, experience) and awareness of NCDs

Results shows that the hypothesised relationship between sex and awareness of NCDs is not significant which mean there is no a relationship between someone's gender and being aware of NCDs. The relationship between sex and being aware of NCDs has p value of 0.113 ( $p > .05$ ). In this study, there was a statistically significant relationship between respondent's age and being aware of NCDs as supported by the p-value of 0.023 which is less than 0.05 and this means that there is some relationship between the two. Comparatively with statistics above indicates that level of education may have an influence on the knowledge on non-communicable diseases and it may determine whether one would report the case or not.

For work experience which may be a key factor in determining whether someone will be aware about a disease, if they will report a disease case or not, to whom will the case be reported to. Results shows that the hypothesised relationship between work experience and being aware of NCDs is statistically significant which mean there is some relationship between the two. Overall, despite that not all variables used in other studies have been tested, this study's findings do not deviate much from earlier studies such as those done in Eastern Uganda, Cape Town of South Africa and Mozambique as highlighted in the literature on knowledge and attitudes towards NCDs among CHWs.

## CHAPTER SIX

### 6.0 CONCLUSION, LIMITATION AND RECOMMENDATIONS

#### 6.1 Introduction

The aim of this study was to assess the knowledge and attitudes toward non-communicable diseases among community health workers in Chilanga district as well as investigate the roles that CHWs play in prevention diseases in communities. This section presents the conclusion, limitation and recommendations from the study.

#### 6.2 CONCLUSION

Community health workers in Chilanga district already possess some knowledge and understanding of NCDs, especially around the mode of transmission and diet-related risk factors. Further analysis however shows that there are shortfalls in CHWs' knowledge, in that information provided was not always accurate. This may be attributed to that, most work of CHWs in Chilanga district concentrated on people with communicable diseases and not NCDs. The study concludes a moderate understanding as nearly half of the participants had some understanding of NCDs. This was seen in the common known NCDs by CHWs as the study revealed the four main types of non-communicable diseases by WHO (2018) were moderately known. Most CHWs have a positive or moderate attitude towards the risks factors as they are confident and feel they have more knowledge on the risk factors.

There is low understanding for cardiovascular diseases and chronic respiratory disease and further that a gaps exists in the knowledge among CHWs and more needs to be done to empower CHWs with knowledge on NCDs. Among the numerous reasons on the challenges in the fight against NCDs particularly by CHWs has been attributed to a combination of causes, not limited to: poor or no training, lack of assistance and support from medical personnel. The study concluded that, developing a role for CHWs in NCD prevention and management should be a key consideration as local and national NCD initiatives are developed. Further, adhering to guidelines indicating that CHWs should spend 80% of their time in the community working on health promotion and prevention activities would have an impact of the prevention of NCDs in communities.

By and large, this study has indicated that, the current roles and capacity of CHWs in the management and control of NCDs remain poorly understood as CHWs do not know where to get the information on NCDs, how to handle or report NCD cases. But far more than just being a CHWs, their roles in the health system is being something that is capable of enhancing community awareness on NCDs and reducing the burden brought by the diseases.

### 6.3 STUDY LIMITATIONS

Even though this study provided significant conclusions, the results should be interpreted with caution, especially about the generalisability of the findings. The study was conducted in a setting with mainly CHWs from NGOs that deal with communicable diseases (HIV and TB). It is thus important to remember that different organisations may organise work differently.

### 6.4 RECOMMENDATIONS

Based on the study findings, the study wishes to recommend that:-

- i. Government should consider defining the scope of practice of CHWs and followed at national level, and their roles should consider the context and characteristics of CHWs.
- ii. NGOs, Funders and Government of the Republic of Zambia to consider standardising NCD training and orientations which should be provided to all CHWs and implementing agencies in the country and the training should be incorporated in core modules in basic training.
- iii. Governments through the Ministry of Health should consider laying down a criteria for supervision of CHWs so that their efforts are not only focused on home based care for people with HIV and TB, but also little being done in the area of NCDs.
- iv. Based on current practices, it suggested possible avenues for capacity building of CHWs for NCD care in Zambia, especially in resource constrained settings to be considered.
- v. To enhance the roles of CHWs and to strengthen CHW programmes, work-based learning and support from supervisors as well as peers should be considered at Facility Level
- vi. A similar study be conducted with large sample size which may meet or lead to the generalisation of the findings.

## CHAPTER SEVEN

### 7.0 Planning

#### 7.1 Budget

	Budget Category	Unit Cost (K)	Multiplying factor	Total Cost (K)
1	<b>Personnel</b>	Daily and per diem	Number of staff days (Number of staff x Number of working days)	
	Researcher	100	5 days	500
	Assistants	100	2 Assistants x 3 days	600.00
			<b>Sub Total</b>	600.00
2	<b>Transport</b>	50 per day per Assistant	3 days for 2 Assistants	300.00
		7.5 litres of Fuel per day at K17.62/litre for Researcher	3 days	396.45
			<b>Sub Total</b>	696.45
3	<b>Supplies and Stationery</b>	<b>Cost per item</b>	<b>Number</b>	
	Questionnaire Printing	2	7 Pages	14.00
	Consent Forms	2	2 Pages	4.00
	Photocopying	0.5	594 Pages	297.00
	Pens and pencils	1.5	10	15.00
	Printing and Binding	100	3	300.00
	Face Masks	5	60	300.00
	Hand Sanitizers	15	4	60.00
			<b>Sub Total</b>	990.00
4	<b>Training</b>			
	Food and drinks	40	4 * 1 day	160.00
			<b>Sub Total</b>	160.00
			Total	2,446.45
			5% incidentals	122.32
			<b>GRAND TOTAL</b>	<b>3,068.77</b>

## 7.2 Gantt Chart

			October 2020	November 2020	December 2020	January 2021	February 2021	March 2021
	<b>ACTIVITY</b>	<b>RESPONSIBILITY</b>						
1	Prepare proposal and submit to the University	Researcher						
2	Preparation of study tools	Researcher						
3	Prepare for field work	Researcher						
4	Select data collectors and research Assistants	Researcher						
5	Conducting training for Assistant	Researcher						
6	Pre-testing of the survey instrument	Researcher and Assistants						
7	Data collection	Researcher and Assistants						
8	Data entry and cleaning	Researcher and Assistants						
9	Data analysis and write up	Researcher						
10	Submission of Draft Dissertation	Researcher						
11	Presentation of Dissertation	Researcher						

## REFERENCES

1. Central Statistical Office (CSO), Ministry of Health (MOH) [Zambia], and ICF (2019). Zambia Demographic and Health Survey 2018: Key Indicators. Rockville, Maryland, USA: Central Statistical Office, Ministry of Health, and ICF.
2. CIA. World Factbook: Zambia (2013). Available at: <https://www.cia.gov/library/publications/the-world-factbook/geos/za.html>. Accessed December 12, 2013.
3. Cumbe Vasco and Francisco Japissane (2019). Community Health Worker Knowledge, Attitudes, and Practices towards Epilepsy in Mozambique. Beira Central Hospital - Service Psychiatry <https://orcid.org/0000-0002-1131-8597> M. Claire Greene
4. Desai P, Padma MV, Jain S, Maheshwari MC (1998). Knowledge, attitudes and practice of epilepsy: Experience at a comprehensive rural health services project. *Seizure*. 1998; 7(2):133–8.
5. Hazel A. Bradley and Thandi Puoane (2007) Prevention of Hypertension and Diabetes in an Urban Setting in South Africa: Participatory Action Research with Community Health Workers
6. Katharine Shelley and Yekoyesew Worku (2018). Zambia's Community Health Assistant Program. Accessed at [chwcentral.org](http://chwcentral.org), 20<sup>th</sup> July 2020
7. Lungiswa P. Tsolekile, Helen Schneider, Thandi Puoane, (2018). The roles, training and knowledge of community health workers about diabetes and hypertension in Khayelitsha, Cape Town. School of Public Health, University of the Western Cape, South Africa
8. Lungiswa P. Tsolekile, Thandi Puoane, Helen Schneider, Naomi S. Levitt, Krisela Steyn (2014). The roles of community health workers in management of non-communicable diseases in an urban township. School of Public Health, University of the Western Cape, South Africa
9. Martin AR (1983). Exploring Patient Beliefs: Steps to Enhancing Physician-Patient Interaction. *Arch Intern Med*. 1983; 143(9):1773–5.
10. Ministry of Health (2010). National Community Health Worker Strategy in Zambia. Lusaka, Zambia.
11. Ministry of Health (2011). Zambia's National Community Health Worker Strategy. In: Second Global Forum on Human Resources for Health. Bangkok, Thailand; 2011. Available at: <http://www.who.int/workforcealliance/forum/2011/hrhawardscs29/en/>. Accessed October 18, 2013.
12. Ministry of Health (2012). National Health Policy, MOH, Lusaka, Zambia

13. Ministry of Health (2012). *Zambian Strategic Plan 2013-2016. Non-Communicable Diseases and their Risk Factors*, MOH, Lusaka, Zambia
14. Ministry of Health (2012). *The 2012 List of Health Facilities in Zambia: Preliminary Report*, v15. Lusaka, Zambia; 2013.
15. Ministry of Health. (2012). *Zambian Strategic Plan 2013-2016. Non-Communicable Diseases and their Risk Factors*, MOH, Lusaka, Zambia
16. Ministry of National Development Planning (2017). *Seventh National Development Plan 2017-2021*, Lusaka, Zambia
17. Mulenga D, Siziya S, Rudatsikira E, Mukonka VM et al. (2013). District specific correlates for hypertension in Kaoma and Kasama rural districts of Zambia. *Rural Remote Health*. 2013; 13 (3):2345. PubMedGoogle Scholar
18. Mulenga M. Mukanu, Joseph Mumba Zulu, et al. (2017). *Health Research Policy and Systems. Responding to non-communicable diseases in Zambia: a policy analysis*. DOI 10.1186/s12961-017-0195-7. Springer Nature Publishers
19. Musoke, D., Atusingwize, E., Ikhile, D. (2021). Community health workers' involvement in the prevention and control of non-communicable diseases in Wakiso District, Uganda. *Global Health* 17, 7 (2021). <https://doi.org/10.1186/s12992-020-00653-5>
20. Siziya S, Rudatsikira E, Babaniyi O, Songolo P, Mulenga D, Muula A. 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.
21. Sydney Chauwa Phiri, Margaret Lippitt Prust, Caroline Phiri Chibawe, Ronald Misapa, Jan Willem van den Broek and Nikhil Wilmink (2017). An exploration of facilitators and challenges in the scale-up of a national, public sector community health worker cadre in Zambia: a qualitative study, Pubmed : AOSIS Open Journals
22. Sydney Chauwa Phiri, Margaret Lippitt Prust, Caroline Phiri Chibawe, Ronald Misapa, Jan Willem van den Broek and Nikhil Wilmink (2017). An exploration of facilitators and challenges in the scale-up of a national, public sector community health worker cadre in Zambia: a qualitative study. Phiri et al. *Human Resources for Health* (2017) 15:40 DOI 10.1186/s12960-017-0214-3, BioMed Central
23. Temitope Tabitha Ojo, Nicola L. Hawley, Mayur M. Desai, Ann R. Akiteng, David Guwatudde and Jeremy I. Schwartz (2017). Exploring knowledge and attitudes toward non-communicable diseases among village health teams in Eastern Uganda: a cross sectional study. *BioMed Central*.

24. Tsolekile, L.P., Puoane, T., Schneider, H., Levitt, N.S. & Steyn, K., 2014, 'The roles of community health workers in management of non-communicable diseases in an urban township', *African Journal of Primary Health Care & Family Medicine* 6(1), 1–8.  
<https://doi.org/10.4102/phcfm.v6i1.693>
25. Tsolekile, L.P., Puoane, T., Schneider, H., Levitt, N.S. & Steyn, K., (2014), 'The roles of community health workers in management of non-communicable diseases in an urban township', *African Journal of Primary Health Care and Family Medicine*,  
<https://doi.org/10.4102/phcfm.v6i1.693>
26. World Health Organisation (2013). *African Health Observatory*, Accessed at <http://www.aho.afro.who.int/en/copyright-notice>
27. World Health Organisation (2014). *Global Status Report on Non communicable Diseases 2014*,
28. World Health Organisation (2018). *WHO Library Cataloguing in Publication Data*, WHO Press, Geneva 27, Switzerland
29. World Health Organisation (2020). Accessed at <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
30. World Health Organization (2005). *Preventing Chronic Disease: A Vital Investment*. Geneva: WHO; 2005
31. World Health Organization (2011). *Global Status Report on Non-Communicable Diseases 2010*. Geneva: WHO; 2011. p. 176.
32. World Health Organization (2014). *Non communicable diseases country profiles 2014*. Geneva: WHO; 2014.
33. World Health Organization (2019). *Non-communicable Diseases and Mental Health Tools*. <http://www.who.int/nmh/ncd-tools/en/>. Accessed 30 Mar 2019
34. World Health Organization. (2017). *Global Diabetes Report 2016: Country Profiles*. [http://www.who.int/diabetes/country-profiles/zmb\\_en.pdf](http://www.who.int/diabetes/country-profiles/zmb_en.pdf). Accessed 18 Mar 2017.
35. World Health Organization. (2018). *Non communicable diseases*; Accessed at <http://www.aho.afro.who.int/en/copyright-notice>, Accessed 20<sup>th</sup> July 2020
36. World Health Organization. *Non-communicable diseases, (2018). 2018 Key facts*. Available from: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases> Accessed 5 Jan 2020.
37. Zulu J M, Kinsman J, Michelo C, Hurtig A-K (2014). *Developing the national community health assistant strategy in Zambia: a policy analysis*. *Health Res Policy Syst* 2013; 11(1): 24. doi: 10.1186/1478-4505-11-24.



## APPENDIX I: Research Questionnaire for Community Health Workers

Questionnaire No: .....



### SCHOOL OF HEALTH SCIENCES

#### POST GRADUATE PROGRAMME

#### MPH 810: THESIS

#### Research Questionnaire

**TOPIC:** Exploring the knowledge and attitudes toward non-communicable diseases among Community Health Workers; A case study of Chilanga District, Zambia.

**Dear Respondent,**

I am a Master's Student at the University of Lusaka, conducting a research project on the above topic for purely academic purposes.

You have been randomly selected to participate in the research. The information gathered will be held in confidence and will provide learning in the work for Community Health Workers. You are free to stop the interview at any time or not respond where uncomfortable.

Do you mind to be interviewed?

Yes [ ] No [ ]

#### INSTRUCTIONS

1. Please answer all the questions and if you are in doubt, seek clarification from the interviewer
2. Only one response required for each question unless indicated as multiple
3. Do not indicate your name on the questionnaire
4. Tick the appropriate response

**This interview will take approximately 20 to 30 minutes**

## SECTION A: SOCIO-DEMOGRAPHIC PROFILE OF COMMUNITY HEALTH WORKERS

*Record Gender of the Respondent*

**Q1.** What is the gender of respondent?

- a) Male
- b) Female

**Q2.** How old were you at your last birthday?

**Q3.** What is your marital status?

- a) Single
- b) Married
- c) Separated
- d) Divorced
- e) Widowed
- f) Other (Specify).....

**Q4.** What is your highest education level?

- a) No schooling
- b) Primary Schooling (Grade 1 to 7)
- c) Secondary Schooling (Grade 8 to 12)
- d) Tertiary

## SECTION B: KNOWLEDGE AND ATTITUDE TOWARDS NCDS AMONG CHWS

**Q5.** Have you ever heard of non-communicable diseases?

- a) Yes
- b) No,

***If No skip to Section C.***

**Q6.** If Yes to Question 5, have you ever done work on non-communicable diseases in your work as CHW?

- a) Yes
- b) No

**Q7.** Please mention any non-communicable diseases that you are aware of?

- a) **Cardiovascular disease** (Heart attack, stroke, coronary artery disease, cerebrovascular disease, peripheral artery disease (PAD), congenital heart disease, deep vein thrombosis and pulmonary embolism)
- b) **Chronic respiratory disease** (chronic obstructive pulmonary disease (COPD), asthma, occupational lung diseases, such as black lung, pulmonary hypertension, cystic fibrosis)

- c) **Diabetes**
- d) **Cancer**
- e) **Alzheimer's disease**
- f) **Arthritis**
- g) **Down syndrome**
- h) **Epilepsy**
- i) **Kidney disease**
- j) **Liver disease**
- k) **Sickle cell anemia**
- l) **Sleep disorders**
- m) **Vision impairment**
- n) **Unintentional injuries (e.g., from traffic crashes)**
- o) **Other Specify.....**

**Q8.** Are non-communicable diseases transmittable between individuals through environmental or physical contact?

- a) Yes
- b) No

**Q9.** In your opinion, are non-communicable diseases curable?

- a) Yes
- b) No

If Yes, Explain.....

**Q10.** What are some of the risks factors associated for non-communicable diseases? (*Multiple responses*)

- a) Dietary pattern (unhealthy diets)
- b) lack of physical activity
- c) smoking and secondhand smoke
- d) excessive use of alcohol
- e) High blood pressure
- f) Obesity
- g) Other Specify.....

**Q11.** What are some of the Prevention Measures of non-communicable diseases? (*Multiple responses*)

- a) Avoiding tobacco
- b) Limiting alcohol
- c) Getting immunized against cancer-causing infections
- d) Exercising regularly
- e) Other Specify.....

**Q12.** On a scale of zero (0) to five (5), zero being the least and five the highest, how would rate your knowledge on the risk factors, complications and preventive measures for **Diabetes**

Risk factors	0	1	2	3	4	5
Complications	0	1	2	3	4	5
Preventive measures	0	1	2	3	4	5

**Q13.** On a scale of zero (0) to Five (5), zero being the least and five the highest, how would rate your knowledge on the risk factors, complications and preventive measures for **Hypertension**

Risk factors	0	1	2	3	4	5
Complications	0	1	2	3	4	5
Preventive measures	0	1	2	3	4	5

**Q14.** Are there any cultural practices that you think accelerates peoples having non-communicable diseases in your community?

- a) Yes
- b) No

*If Yes, what do think are some of the cultural practices that may lead to NCDs?*

- a) .....
- b) .....
- c) .....

**Q15.** What do you do as a community health worker if a community member shows or reports signs of non-communicable diseases?

- a) Report to the facility
- b) Providing advice
- c) Recommend medication
- d) Other Specify.....

**Q16.** In your opinion, are NCDs given fair attention like communicable diseases?

- a) Yes
- b) No,

*If No, please explain.....*

## SECTION C: ROLES AND SERVICES OF COMMUNITY HEALTH WORKERS RELATED TO NON-COMMUNICABLE DISEASES

**Q17.** How long have you been working as a Community Health Worker?

- a) Less than 3 months
- b) 3 months to 6 month
- c) 7 months to 11 months
- d) 1 Year to 2 Years
- e) 2 years to 4 years
- f) More than 4 Years

*(If respondent has worked on non-communicable diseases before (Answer was Yes to Q 6, Section B, ask Q18)*

**Q18.** What is your daily role(s) as Community Health Worker in the management of Non Communicable diseases? (*Multiple responses*)

- a) Distribution (Fetch & deliver) of medication
- b) Advising about diet
- c) Home-based care for people with HIV and TB,
- d) Community Sensitisation on diabetes
- e) Community Sensitisation on hypertension,
- f) Community Sensitisation on arthritis,
- g) Community Sensitisation on heart diseases, asthma and strokes
- h) Facilitate support groups
- i) Eye screening
- j) Measuring of blood pressure
- k) Conducting physical activity sessions (Rehabilitate exercise)
- l) Measure weight
- m) Pill count
- n) Other (Specify).....

## SECTION D: TRAINING RELATED TO NON-COMMUNICABLE DISEASES

**Q19.** Have you ever received any form of training/Orientation as a CHW?

- a) Yes
- b) No

*If No, Skip to Question 20*

**Q20.** If yes, have you received any form of training/Orientation relating to NCDs?

- a) Yes
- b) No

*If No, Skip to Question 21*

**Q21.** If yes, how long was the training?

- a) Less than 7 Days
- b) 2 weeks
- c) 3 to 4 weeks
- d) More than 1 month

**Q22.** Was the training adequate for your type of work relating to NCDs?

- a) Yes
- b) No

**Q23.** Have you received any refresher training after the initial training?

- a) Yes
- b) No

**Q24.** Which other skills do you feel you need to do work in NCDs?

- a) .....
- b) .....
- c) .....

**Q25.** Do you receive support or follow up mentorship from your supervisors?

- a) Yes
- b) No

**Q26.** If yes, how often is support received from supervisors from facilities in a month?

- a) Once
- b) Twice
- c) Three times
- d) More than thrice
- e) It depends
- f) Other Specify.....

**Q27.** What are some of the challenges faced in conducting your work as a CHW?

- a) .....
- b) .....

**Q28.** What are some of the recommendation to improve work on NCDs as community Health workers?

- a) .....
- b) .....

### END OF QUESTIONNAIRE

Thank you very much for you taking your time to respond to this questionnaire

## APPENDIX IV: KII Guide

Questionnaire No: .....



# SCHOOL OF HEALTH SCIENCES

## POST GRADUATE PROGRAMME

### MPH 810: THESIS

#### KII GUIDE [MoH, PHO, DHO, Facility In-charge/Supervisor]

**TOPIC:** Exploring the knowledge and attitudes toward non-communicable diseases among Community Health Workers; A case study of Chilanga District, Zambia.

#### Purpose

The purpose of this research partial fulfilment for the requirement of Master of Public Health at University of Lusaka (UNILUS). I am requesting for your participation through answering the questions in the questionnaire.

Be notified that, your participation in this study is voluntary and you have the right to decide to participate or not to participate in the study. You are also entitled to privacy and confidentiality and at no time are you obliged to divulge your real name and identity and you are at liberty to withdrawal from the study at any time or not to respond to any or all the questions.

Do you mind to be interviewed?                      **Yes** [ ☐ ]      **No** [ ☐ ]

**This interview will approximately take 30 to 45 minutes**

## SECTION A: COMMUNITY HEALTH WORKERS AND NON-COMMUNICABLE DISEASES

**Q1.** Are the number of CHWs available adequate for the operation in the area?

- a) Yes
- b) No

**Q2.** If **No**, what would be the recommended number of CHWs needed to work in your area?

Please record Number

Record Reason .....

**Q3.** In your opinion, what percentage of CHWs at your facility (or in your District or Province) aware of NCDs or know of what causes them?

Please record Number

- If proposed that **less than 50%** are aware, Probe: Why do you think CHWs are not aware of NCDs or their causes?
- If **above 50%** what has the facility (District or Province) done to ensure that over 50% of the CHWs are aware of the NCDS?

- a) .....
- b) .....
- c) .....
- d) .....

**Q4.** Are the CHWs adding value to the health system?

Indicate **Yes** or **No**, then explain;

.....  
.....

**Q5.** Who is responsible for the selection of CHWs?

.....  
.....

**Q6.** What qualifications are needed for someone to be a CHW?

.....  
.....



**Q7.** I would like to understand the knowledge on NCDs among CHWs, on a scale of zero (0) to ten (10), ten being the highest, how would rate CHWs knowledge on NCDs

a) Being aware of different NCDs	0	1	2	3	4	5	6	7	8	9	10
b) Risk factors	0	1	2	3	4	5	6	7	8	9	10
c) Complications	0	1	2	3	4	5	6	7	8	9	10
d) Preventive measures	0	1	2	3	4	5	6	7	8	9	10

*[For those that are below 5 of the score, Probe: Why do you think CHWs are not aware of NCDs or their causes?]*

- a) Aware of NCDs
  - i. ....
  - ii. ....
  - iii. ....
- b) Risk factors
  - i. ....
  - ii. ....
  - iii. ....
- c) Complications
  - i. ....
  - ii. ....
  - iii. ....
- d) Preventive measures
  - i. ....
  - ii. ....
  - iii. ....

**Q8.** What do community health worker do if a community member shows or reports signs of non-communicable diseases?

- a) Report to the facility
- b) Providing advice
- c) Recommend medication

## SECTION B: CHWS ROLE IN PREVENTING NCDS IN THE COMMUNITIES

**Q9.** Are NCDs important health issues that should be taken care of in communities by community health workers?

- a) Yes
- b) No

*If Yes/No, Explain*

**Q10** In your opinion, are NCDs given fair attention like communicable diseases?

- a) Yes
- b) No,

Please explain

.....  
.....

**Q11.** What are the daily role of Community Health Worker in the management of Non Communicable diseases?

- a) Distribution (Fetch & deliver) of medication
- b) Advising about diet
- c) Homebased care for people with HIV and TB,
- d) Community Sensitisation on diabetes
- e) Community Sensitisation on hypertension,
- f) Community Sensitisation on arthritis,
- g) Community Sensitisation on heart diseases, asthma and strokes
- h) Facilitate support groups
- i) Eye screening
- j) Measuring of blood pressure
- k) Conducting physical activity sessions (Rehabilitate exercise)
- l) Measure weight
- m) Pill count
- n) Other (Specify).....

### **SECTION C: TRAINING RELATED TO NON-COMMUNICABLE DISEASES FOR CHW**

**Q12.** Has your institution ever offered any form of training/orientation to CHW?

- a) Yes
- b) No *If No, Skip to Section C*

**Q13.** If Yes to Question 12, was any of training/orientation related to NCDs?

- a) Yes
- b) No

**Q14.** If yes, how long was the training?

- a) Less than 7 days
- b) 2 weeks
- c) 3 to 4 weeks
- d) More than 1 month

**Q15.** Was the training adequate for type of work relating to NCDs for CHWs?

- a) Yes
- b) No

**Q16.** Has any refresher training been offered to CHWs after their initial training?

- a) Yes
- b) No

**Q17.** Which skills do you feel are needed to do work in NCDs by CHWs?

- a) .....
- b) .....
- c) .....
- d) .....

**Q18.** Is support or follow up mentorship given to CHWs by supervisors?

- a) Yes
- b) No

**Q19.** *If Yes to Question 18*, how often is support given by supervisors from facilities in a month?

- a) Once
- b) Twice
- c) Three times
- d) More than thrice
- e) It depends
- f) Other Specify.....

**Q20.** What kind of support is offered by your institution/facility to the CHWs?

- a) .....
- b) .....
- c) .....
- d) .....

#### **SECTION D: BARRIERS AND FACILITATORS TO CHW ROLE IN PREVENTING NCD IN THE COMMUNITIES**

**Q21.** Do (es) the facility (ies) get funding for the CHWs?

- a) Yes
- b) No

*If No, Skip Q22*

**Q22.** Is the allocation enough for the required the worker of CHWs for the respective health facility?

- a) Yes
- b) No

**If No**, please explain

.....  
.....  
.....

**Q23.** What might be the barriers to dealing with NCDs in communities using community health workers?

*[Probe:*

- *Respondent mentions equipment – what kind of equipment do you need that you don't have?*
- *Respondent mentions lack of engagement with health facilities – what are the specific problems that you face?]*

- a) .....
- b) .....

**Q18.** What are some of the recommendation to improve work for community health workers relating to NCDs?

- a) .....
- b) .....
- c) .....

**END OF INTERVIEW**

Thank you very much for you taking your time to participate

© GSJ

## APPENDIX V: National Health Research Authority Clearance



**NATIONAL HEALTH RESEARCH AUTHORITY**  
Paediatric Centre of Excellence, University Teaching Hospital, P.O. Box 30075, LUSAKA  
Tell: +260211 250309 | Email: [znhrasec@gmail.com](mailto:znhrasec@gmail.com) | [www.nhra.org.zm](http://www.nhra.org.zm)

Ref No: NHRA00003/09/01/2021

Date: 9<sup>th</sup> January, 2021

The Principal Investigator  
Gilbert Silwamba  
University of Lusaka  
P.O. Box 36711  
Lusaka.

Dear Gilbert Silwamba,

**Re: Request for Authority to Conduct Research**

The National Health Research Authority is in receipt of your request for authority to conduct research titled **"EXPLORING KNOWLEDGE AND ATTITUDES TOWARD NON COMMUNICABLE DISEASES AMONG COMMUNITY HEALTH WORKERS; A CASE STUDY OF CHILANGA DISTRICT, ZAMBIA."** I wish to inform you that following submission of your request to the Authority, our review of the same and in view of the ethical clearance, this study has been approved on condition that:

1. The relevant Provincial and District Medical Officers where the study is being conducted are fully appraised;
2. Progress updates are provided to NHRA quarterly from the date of commencement of the study;
3. The final study report is cleared by the NHRA before any publication or dissemination within or outside the country;
4. After clearance for publication or dissemination by the NHRA, the final study report is shared with all relevant Provincial and District Directors of Health where the study was being conducted, University leadership, and all key respondents.

Yours sincerely,

Mrs. Sandra C. Sakala  
Acting Director/CEO  
National Health Research Authority

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All correspondences should be addressed to the Director/CEO National Health Research Authority

## APPENDIX VI: Chilanga District Health Office Approval

*All correspondences  
Should be addressed  
To the District Health Office*



*In reply please quote*

REPUBLIC OF ZAMBIA  
MINISTRY OF HEALTH  
CHILANGA DISTRICT HEALTH OFFICE  
P.O BOX 350097, CHILANGA

28<sup>th</sup> January, 2021

Gilbert Silwamba  
Public Health Student,  
University of Lusaka,  
P.O Box 36711,  
LUSAKA

**RE: PERMISSION TO ACCESS CHILANGA DISTRICT HEALTH FACILITIES FOR THE PURPOSE  
OF DATA COLLECTION RELATED RESEARCH.**

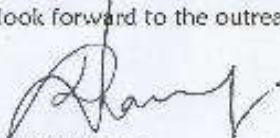
Reference is made to the above subject matter.

Chilanga District Health Office is pleased to receive your request to access Chilanga District Health Facilities for the purpose of Data Collection in a research in "EXPLORING KNOWLEDGE AND ATTITUDE TOWARDS NON COMMUNICABLE DISEASE AMONG COMMUNITY HEALTH WORKERS: A CASE STUDY OF CHILANGA DISTRICT, ZAMBIA".

We have no objection for you to conduct this activity, as it will enhance the health and wellbeing of our communities.

We would want to request that during the outreach, you should work closely with the facility in charges and leave a report at the facility and at the District Health Office.

We look forward to the outreach and our office is open for any queries.

  
Dr. Leah Namonje,  
DISTRICT HEALTH DIRECTOR  
CHILANGA DISTRICT

