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Prevention and Control of Non-Communicable Diseases for Sustainable Development in

Harare

by

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GWERU

DECLARATION

I, Ndanatsiwa Zuze, hereby declare that this work is my own and I have not colluded with anyone in its preparation. Where I have taken advantage of the work of others, I have given full acknowledgement. I also declare that the document submitted electronically is the same as the hard copy submitted to the college.

Signature..... Date.....

APPROVAL

This dissertation/thesis entitled “Prevention and Control of Non-Communicable Diseases for Sustainable Development in Harare” by NDANATSIWA ZUZE meets the regulations governing the award of the degree of Master of Arts in Development Studies of the **Midlands State University**, and is approved for its contribution to knowledge and literal presentation.

Supervisor:.....

Date.....

DEDICATION

This work is dedicated to my husband Michael Zuze and my children Tariro, Tatenda and Tadiwa for encouraging me on and staying awake late at night to keep me company as I worked on this dissertation.

ACKNOWLEDGEMENTS

This project has been made possible with the help of a number of people who without, it would not have been possible to produce it. I would like to convey my most sincere gratitude to my supervisor, Dr Matunhu for his guidance and constructive criticism throughout this project especially the need to manage my time for its timeous completion. I would also like to thank the city health department for allowing me to carry out the research in the district.

ABSTRACT

The research study sought to explore the connection between NCDs prevention and control and sustainable development in Harare. The purpose was achieved through exploring the NCD health care system, the existing environment for prevention and control of the NCDs and also documenting how the population is being engaged in NCDs prevention and control activities. The methodology that the researcher adopted was the qualitative research method. In depth interviews, observations and focus group discussions where the data mining instruments that were employed. Purposive sampling method was used to select a sample and network sampling and snowballing were used to obtain the required sample. Collected data was analyzed and placed into 5 themes i.e. accessibility of services, existing partnerships, activities for prevention and control of NCDs, and healthy environments. It emerged from the findings that prevention and control activities are being hampered by financial challenges, the existing environment is not conducive for prevention thus the district is experiencing an increase in the numbers of people with NCDs with diabetes and hypertension being the most common. The approach that is being used to control NCDs is not sustainable as treatment is being preferred instead of prevention. Management of the health services system is not efficient. Those with NCDs such as cancer and heart diseases are experiencing difficulties accessing screening, treatment and care services. All this results in increasing numbers of those with NCDs and it exerts pressure on household finances and the health delivery system to such an extent that it becomes unsustainable. As a result researcher recommended partnerships for health, introduction of public transport system that encourages physical exercise and regulation that governs food production, processing and labelling, tobacco smoking and alcohol production.

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ABBREVIATIONS

AIDS.....	Acquired Immunodeficiency Syndrome
AMTO.....	Assisted Medical Treatment Orders
CBD.....	Central Business District
DFID.....	Dev Funding for International Development
EMA.....	Environmental Management Agency
HIV.....	Human Immunodeficiency Virus
MDGs.....	Millennium Development Goals
NCDS.....	Non-communicable diseases
PEPFA.....	President’s Emergency Plan For AIDS Relief
PSI.....	Population Services International
UNAIDS.....	United Nations
WHO.....	World Health Organization

CHAPTER 1: PROBLEM AND ITS SETTING

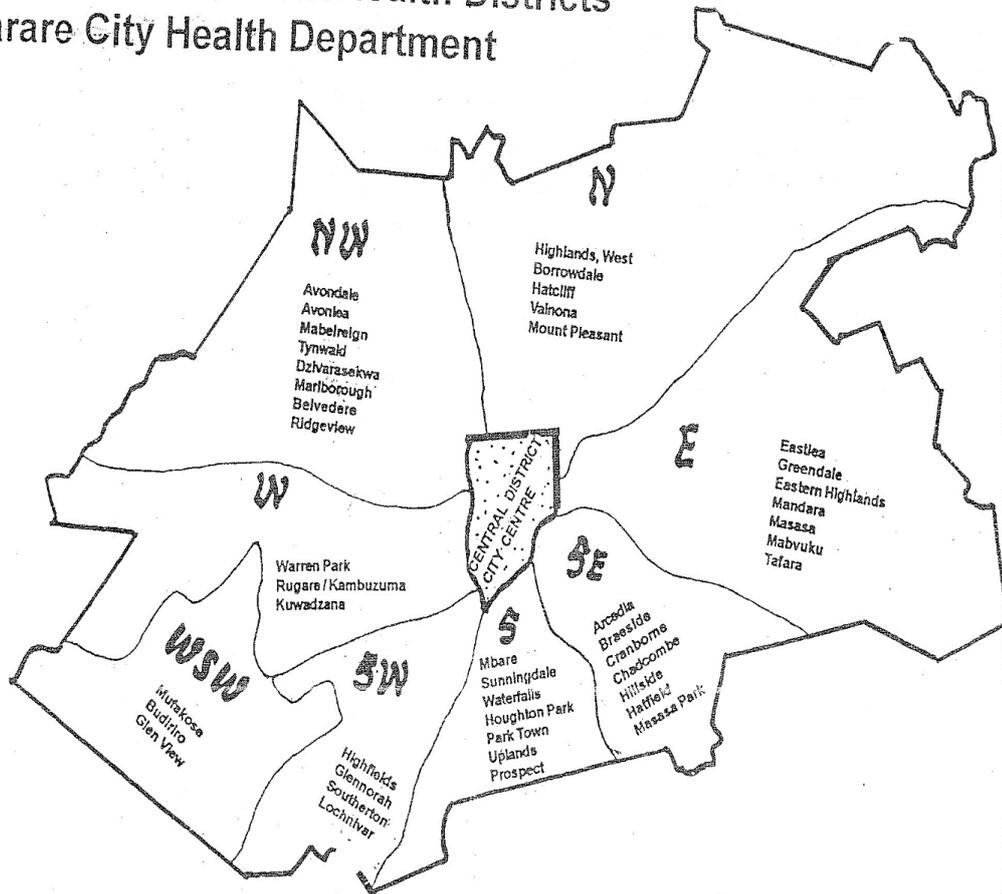
1.1. Introduction

This chapter sets the outline of a research proposal in order to set the groundwork for a study on prevention and control of NCDs for sustainable development in Harare. Sections to be covered in the outline include a brief background of Harare, brief profile of NCDs and how they are connected to sustainable development. More importantly the chapter provides the lay out to be followed by the study. A detailed background, statement of the problem, significance of the study, the objectives as well as the research questions and delimitations will be outlined. The outline also addresses the methodological steps to be followed, summary of the five chapters and anticipated limitations.

Harare is the capital city of Zimbabwe which is a country in Sub Saharan Africa. This country lies between the Limpopo and the Zambezi rivers. This country shares its borders with Mozambique in the east Botswana in the west South Africa in the South and Zambia in the north. In Harare health is administered by a provincial medical director. Harare has 9 health districts, which are the central district, northern district, eastern district, southern district, south eastern district, south western district, west south western district, western district and north western district. See fig 1 on page 2 this study will focus on the southern district, which comprises of suburbs such as Mbare, Sunningdale and Waterfalls. There are health facilities that are directly run by city health department and there are others that are under direct government supervision. There are also other health facilities that are privately run.

Fig 1 Harare health districts

Areas Within Current Health Districts Harare City Health Department



Adapted from Harare City Health Department

Non communicable diseases are referred to as lifestyle illnesses because they are a result of a person's lifestyle. Most of them are preventable sicknesses. The most common causes being tobacco use, alcohol use, poor diet, which is high in sugars salt saturated fats and Trans fatty acids, and inactivity. In the past non communicable disease were associated with the rich and developed countries, but they are now on the increase in developing countries. According to Alleyne (2013) 80% of the four leading non communicable diseases diabetes, cardiovascular

disease (heart disease, hypertension and stroke), cancers and chronic respiratory diseases are in the developing world. Two thirds of those with diabetes are in the developing nations.

Sustainable development is development that meets the needs of the present without compromising the ability of the future generation to meet their own needs. Initially the main focus of sustainable development was on preserving the physical environment. However the past 20 years have shown that, sustainable development has clearly become broader than concern for the physical environment. Sustainable development includes social and economic aspects of human development. This therefore means that sustainable development includes the three concentric overlapping circles of environment, social and economy. According to the NCD Alliance (2010) these diseases are directly linked to three pillars of sustainable development which are economic growth, social equity and environmental protection.

Health has been discovered to be a determinant of sustainable development. Health is valued very highly universally. The Gallup International Millennium survey of 57 000 adults, representing 1.25 billion people, showed that health was what mattered most in life. Health is both a result of, and contributor to, sustainable human development. For this reason Sen (2001) explains that health is generally freedom-enhancing, by increasing our ability to do what we have reason to do.

On the political front political leaders and health experts have underscored the invaluable burden of NCDS and their links to sustainable development. A WHO meeting on social determinants of health in Rio de Janeiro, the UN political declaration on the prevention and control of NCDS, and the Johannesburg declaration on sustainable development (from 2002 earth summit in Johannesburg South Africa) emphasized the centrality of health in sustainable development.

These summits all recognized that NCDs destabilize socio-economic development. In the Johannesburg declaration on sustainable development (2002), in paragraph 19 it is explained that focus should be on the importance of fighting conditions that cause severe threats to sustainable development of people, but despite the acknowledgement of health as a crucial foundation of sustainable development, attention to non-communicable diseases has been minimal. Chapter six of agenda 21, about protecting and promoting human health as the framework for action of the Rio declaration, made no reference to NCDs. However, after the 2002 Johannesburg conference, consideration was being made for viewing NCDs as important for development.

Even though it has been acknowledged that health is central to sustainable development, attention to NCDs has been minimal. The connection between NCD prevention and control and sustainable development has been overlooked and very slow, hindering progress on sustainable development. Environmental degradation and NCDs have similar causes and solutions, thus including NCD as part of broader disputes about sustainable development are essential

NCDs affect health so massively and make it impossible for health to be fully achievable as an end or goal of human development. NCDs prevent health from playing its part as one of the means by which human development can be made sustainable. The magnitude of the health problem in terms of morbidity, mortality and distribution should be noted. Second, social, economic and environmental factors make human development Sustainable but then the adverse effect of NCDs on each of the strands and the combined effect will seriously impair the possibility of Sustainability. Similarly, the effect of economics and the environment on NCDs has been delineated. NCDs at times lead to unequal distribution of

opportunities in life and thus contribute to inequity. Poor people have a higher chance of exposure to risk factors for NCDs, yet they have fewer resources to deal with them.

The need for chronic care, such as dialysis chemotherapy and radiotherapy, and the consequent burden imposed on families can contribute to social disruption. Treatment for diabetes, cancer and cardiovascular diseases can take a toll on resources driving families into impoverishment. According to the Zimbabwe Demographic and Health Survey 2011 in Zimbabwe health care is mostly private and out of pocket, the cost weighs more on those that are least able to afford. Drastic cuts in spending on food and education may result, family assets may be liquidated and this may result in loss of care and investment on children.

According to the NCD Alliance (2010), the UN agreed that the burden of NCDs constitutes one of the major challenges for development in the 21st century. Non communicable diseases increase impoverishment at household level crippling socio-economic development. The increasing numbers of people affected by non-communicable diseases retards poverty reduction efforts in low income communities and this in turn retards achievement of MDGs. Non communicable diseases have become a major health and economic development problem and are a challenge to poverty eradication.

According to Alleyne (2013) the World Health Organization has under scored the link between non communicable diseases and poverty. In 2011 the world health organization meeting on social determinants on health underscored the importance of non-communicable diseases burden and the links they have on sustainable development. These diseases strain health systems thus contributing to poverty.

The world at large and individual countries in general have tended not to realize the important links between non communicable diseases prevention and control and sustainable development.

There is a close link between poverty and low life expectancy. Life expectancy has been used as an indicator of development. According to the world health organization NCDs have become the major cause of death worldwide. They now represent over 60% of all deaths. In 2005 36 million people died of non-communicable diseases and of these about 18 million were people under the age of 70 and half were women who constitute majority of the poor .In 2008 on the other hand 36 million out of 57 million people died as a result of non-communicable diseases, that is almost 63% of worldwide deaths. This is expected to rise by 17-24% with next decade.

The burden of non-communicable diseases stands at approximately 85% in industrialized nations, 70% in middle income nations and 50% in low income countries. WHO (2010) explains that heart related ailments continue to rise rapidly across the globe and HIV and AIDS epidemic is not close to the NCD death toll as the traditional picture would depict. National economies are suffering because of premature deaths or as a result of disability caused by stroke or as a result of heart diseases and diabetes. There is increased absenteeism as a result of illness such as hypertension, diabetes and cancer. Thus non communicable diseases are a development issue.

Non communicable diseases are causing more ill health on the poor. Social and economic conditions have a bearing on people's exposure and vulnerability to non-communicable diseases and related health care outcomes and consequences. Unhealthy people cannot work to develop their environs. Above this productive hours for care givers are also reduced.

In developing countries, the increase in the burden of non-communicable diseases is worsened by the negative effects of Globalization such as unfair trade, irresponsible marketing, rapid and unplanned urbanization and increasing sedentary lives, tobacco use as well as availability and eating of food high in energy, salt, fat and sugar. Consumers among them women, children and adolescents are being targeted by marketers who promote junk food and alcohol consumption. The fast speed of growth has resulted in governments failing to keep pace with the infrastructure and service needs. As a result people are not being protected by laws and regulations that may be used to curtail new infections.

Low and middle income countries and households are affected more by non-communicable diseases because they do not have enough financial cushions to be able to withstand the effects of non-communicable diseases. Non communicable diseases cause cuts in spending on education and this in turn results in failure to achieve MDG 2 on universal access to education. MDG 4 and 5 maternal and health are also closely linked to NCDs.

Strokes often cause disability and this is seldom a route to poverty. People are prevented from working or seeking employment because of suffering from NCDs. Days are spent ill and in care giving thus losing productive life years annually. According to WHO statistical fact sheet 2014 Zimbabwe lost 8% years of life in 2008. Productivity decreases because of poor performance which is below standards. Lost man hours of up to 175 million days were recorded in the UK in 2006. This amounted to 20 billion pounds lost in monetary terms.

At national level countries experience losses in productivity due to absenteeism and inability to work, and this may lead to a decline in national income .A 10% rise in NCDs is associated with 0.15% decrease in annual income growth. According to the United States Institute of medicine (2010) NCDs cost developing countries 0.02% and 6.77 of gross domestic product,

this is greater than that caused by malaria in the 1960's or AIDS in the 1990's. The chart below shows the magnitude of NCDs compared to other causes of death such as AIDS and road injuries. In South Africa NCDs accounted for 29% of all deaths. In Botswana NCDs accounted for 31% of all mortality and in Zambia NCDs account for 27% of all deaths (WHO; 2010). WHO NCD country profiles (2014) has published that in Zimbabwe NCDs account for 31% of all deaths.

1.2. Statement of the problem

The increase in incidence and prevalence of people with NCDs world wide including Zimbabwe is increasingly becoming an environmental as well as a socio-economic problem for individuals, families, health systems and governments. Continued increase of NCDs will increase numbers of the poor in low income countries, this places extra burden on already burdened national budgets. This impedes development efforts, thereby creating or reinforcing vulnerability that might cascade to several generations to come. Vulnerability as a result of increased health expenditure may expose the children, women and those affected by NCDs and generations to poverty, thereby reinforcing inequalities in society.

It is important to note that the approach to health in the MDGs has been disease specific and vertical. This has incapacitated health systems to deal with the increasing burden of NCDs. Prevalence of NCDs is on the increase owing to the fact that not much attention has been given to these infections. The city council's strategic plan for 2012 to 2025 makes no mention of NCDs. There is more concentration on communicable diseases such as malaria and HIV and AIDS and maternal and child health. As a result of the increasing numbers of people in need of care and treatment due to the triple burden of infectious diseases, maternal and child

health as well as NCDs, government health budgets are increasing and Zimbabwe is struggling to cope.

According to the WHO country profiles (2014) in Zimbabwe NCDs are estimated to account for 31% of total 138000 deaths in Zimbabwe. 9% cardiovascular diseases 10% cancers , 3% Chronic respiratory diseases 1% diabetes and other NCDs 7%. The 31% is an increase from 21% 2012. The probability of dying between 30yrs and 70yrs from the four main NCDs is 19%. With such an increase the burden on health systems, the economy and environment, if not curtailed, will be unsustainable.

It therefore becomes apparent that if prevention and control mechanisms are put in place the burden of NCDs may be reduced and associated costs of treatment and care will be reduced and consequently the funds will be used for other aspects of development. These factors are what prompted the researcher to investigate on the prevention and control strategies that Harare has adopted to reduce risk and control progression of these impoverishing infections.

1.3. Objectives

The research study seeks to:

- Explain why NCDs are on the increase in Harare.
- Document how a favorable environment for prevention and control of NCDs can be created.
- Describe the level of engagement of non-health sectors in NCDs prevention and control activities.

1.4. Research questions

Why NCDs are on the increase in Harare

How are the non health sectors being engaged to promote prevention and control of NCDs?

How poor environmental policies contribute to is increases in NCDs prevalence in Harare?

1.5. Definition of terms

Health: Here health is taken to mean total physical mental and social wellbeing and not just absence of diseases. Focus shifts from concentrating on communicable diseases maternal and new born child health. The revision includes NCDs and reflects better the health situation of developing world.

Sustainable development: This researcher defines sustainable development as more than confining development to physical environment and the limits of the earth`s resources. Sustainable development includes social and economic aspects of human development. This therefore means that sustainable development includes the three concentric overlapping circles of environment, social and economy as applied by the NCD Alliance (2010).

Globalization: This is the reduction of barriers of cross border movement of goods, services and capital with quicker integration of world markets and increased flow of commodities technologies, information financial capital modes of distribution marketing as well as movement of peoples and labor. This same meaning was applied by Mwana (2013:15).

Non communicable diseases

Non communicable diseases are medical conditions or diseases which are not transmittable among people. Non communicable diseases include autoimmune disease, heart disease, stroke, cancers, asthma, diabetes, chronic kidney disease, cataracts and many more.

1.6. Delimitation

This study concentrated on NCDs prevention and control for sustainable development. It looked at how failure to prevent and control these NCDs affects sustainable development. The study is going to focus on Harare south district because the researcher cannot cover the whole of Harare in terms of geographical area coverage. The researcher concentrated on just one district in order to reduce the population to a manageable size. Only the four major NCDs [diabetes, cardiovascular disease (heart disease, hypertension and stroke), cancers and kidney ailments] will be dealt with in this research.

This study used the dependency theory as a theoretical framework. This was based on the premise that food processing industry is very much dependent on products from the west. Most of the risk factors associated with NCDs emanate from effects of food stuffs associated with western culture.

Literature that was reviewed was mostly from reports from WHO, UNDP, Demographic and health surveys carried out in the country and from PUP med and lancet journals. There is not much research that has been carried out as yet in the area under investigation in this country.

There is no information on Harare in particular on sustainable development and NCDs.

Research participants were men and women of productive age.

This researcher concentrated on men and women from the age of 25 years who are suffering or have suffered from NCDs in the past. Key stakeholders in this field from the city health

department and the ministry of health were consulted. Focus was also given to health services providers who cover Harare south district. Organizations that deal with people with NCDs such as the Cancer Association of Zimbabwe and the Diabetes Association of Zimbabwe were consulted for data gathering.

The qualitative research method was used. In-depth interviews were used for collection of qualitative data. Both hermeneutic and transcendental phenomenology will be used. This is because the researcher wants to concentrate on experiences at individual and community (associations of people with NCDs) levels.

1.7. Limitations

Time and financial constraints were identified as the major limiting factors. The amount of time and money required for the research was not commensurate with what could be afforded by the researcher. As a result this researcher reduced the intended geographical area to be covered. Instead of covering the whole of Harare the researcher was then limited to Harare south district. After this was done the researcher was able to complete the study within submission time.

1.8. Assumptions

It was assumed that respondents responded truthfully and to the best of their knowledge and ability. This assumption was based on the premise that the respondents had been assured of confidentiality and anonymity. The fact that they freely gave informed consent guarantees them that they may withdraw from the study without any ramifications.

It is also assumed that health is a determinant of sustainable development and that there is a correlation between these two. This is so because previous findings in World Health

Organization reports have indicated how these two affect each other. This researcher has also assumed that the sample population to be studied is trustworthy as it consists of those with NCDs and those that provide services to people with NCDs

1.9. Significance of the study

The study is of importance to a number of stakeholders who include the participants, the community and policy makers. To the researcher it is an opportunity to fulfill the passion and desire to help the vulnerable groups in the health sector by opening up areas for further studies and debates. Other professionals in the research field or development practitioners can use generated knowledge as bases for further study in this area that is still very much under developed and under studied. The participants have the opportunity to be heard and determine their own destiny through participation.

The study sought to extend existing knowledge in the areas of health and sustainable development. To the policy makers it is an opportunity to consider context based interventions. Knowledge generated is intended to help city health officials in health programming, planning and implementation of prevention and control strategies for NCDs. Furthermore, the study helps policy makers and stakeholders to mainstream NCD issues in crafting future economic, environmental, agricultural, nutritional and social policies. Informing policy makers on the magnitude of NCDs alone is not enough. While it is very noble to have knowledge on resource allocation between prevention and control of NCDs it is more important to inform policy makers about the interplay and relationship between NCDs and sustainable development. There are more factors that need to be addressed when it comes to NCDs beside the prevalence of the diseases.

1.10. Dissertation format

The dissertation has five chapters under the following titles.

Chapter 1: The chapter includes the general background, statement of the problem, and significance of the study, objectives, and research questions, statement of the problem, assumptions, definition of terms, delimitation and anticipated limitations.

Chapter 2: Areas covered include literature on risk factors for NCDs, economic effects of NCDs and sustainable development, MDGs and NCDs, NCDs and the environment, multisectoral approaches to sustainable development, urbanization and urban green development, embedding NCDs in sustainable development, the conceptual framework namely the health promotion model and Hancock's model and the theoretical model used was the dependency theory.

Chapter 3: The following areas are covered, research methodology and design, sampling technique and sample, sources of data, target population, data collection methods, ethical considerations, data analysis procedures, sources of data and measures of trustworthiness.

Chapter 4: This chapter includes recorded texts from all the participants, analyzed, and discussed themes. The analysis is done under accessibility of treatment, activities to reduce progression, healthy environments and public health capacity themes. The results were then discussed regarding approaches to disease control, financing of prevention and control, health services management and the environment.

Chapter 5: This chapter gives closing remarks by the researcher. It gives the summary and conclusion to the objectives of the study. The chapter also gives recommendations to different stakeholders who include government, non health sectors and policy makers.

1.11. Chapter Summary

The first chapter sets the foundation for a study on the prevention and control of NCDs for sustainable development. This issue has attracted global attention as witnessed by several literature and studies in the world as well as the region on NCDs. Most of the reports and researches have unearthed that NCDs are on the increase. The effect of the increase is negative on development. The proposed research will draw a lot from studies carried out throughout the world and the reports on NCDs in Zimbabwe.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

This chapter is going to focus on literature that has been written in the field of NCDs and sustainable development. This is done with the view of identifying the gaps that exist in this field. Most of the literature reviewed is from studies done across the world, in the sub-region as well as in Zimbabwe. A detailed discussion of the major risk factors for NCDs will be done in order to have an understanding of how these contribute to an increase in the disease burden. Second the researcher will look at how NCDs cause poverty, at household level in health systems and on national economies. The relationship between sustainable development and NCDs will also be examined. Health promotion concepts will also be discussed in order to inform the strategies that can be adopted to promote prevention and control of NCDs for sustainable development. The theory of development that the researcher adopted for the study is the dependency theory. This theory will be examined in order to explain how dependency on the west perpetuates an increase in the prevalence of NCDs and consequently increasing poverty.

2.2. Risk factors

In 2000 HIV & AIDS was the major disease to be addressed with millions of people now receiving appropriate treatment. Idea of social determinants of health and disease was embryonic but has since developed with the publication of the report of who commission on social determinants of health and adoption of the Rio Political declaration on the social determinants of health (2011 October) where 25% reduction in mortality due to NCDs by 2025 (25 by 25 goal) was adopted as a result of human development and a means to achieve

developments. But there are risk factors that may make it difficult to achieve this goal, if left unaddressed.

These preventable risk factors cause most NCDs. The major risk factors of NCDs can be broken down into three that is economic transition, rapid urbanization and 21st century life styles such as tobacco use, unhealthy diet, insufficient physical activity and the harmful use of alcohol. These can cause high blood pressure, overweight, obesity and raised cholesterol. These conditions can lead to diabetes, and heart diseases that constitute some of the major NCDs. Stroke is also often caused by high blood pressure.

The risk factors can be classified as modifiable and non-modifiable. Modifiable factors are those factors that can be changed for example individual and community influences, such as living and working conditions and socio-cultural factors. Non modifiable risk factors are those that an individual has no control over these included genetically inherited factors, sex and age. An examination of the risk factors will assist in determining how these contribute to an increase in people suffering from NCDs and what can be done to prevent and control the NCDs.

According to Dr Alwan (2010) the greatest effect of these risk factors is on low-and-middle income countries and on poor people in all countries. A vicious cycle occurs as poverty exposes people to various risk factors for NCDs and the resultant NCDs may drive people into poverty. This undermines the global goal of reducing mortality due to NCDs by 25% by 2025 poverty (NCD Global Action Plan 2013-2020). According to Puoane et al (2010) these risk factors operate from the most proximal (biological) to the most distal (structural).

Biological risks include high blood cholesterol, genetics, early life origin, high body mass index and hypertension as well as diabetes. These risk factors are going to be looked at in

detail. High blood cholesterol is high concentration of the different blood fats (lipids) in the blood. This concentration is known as hyperlipidemia. Puoane et al (2010) his comes as a result of consumption of huge amounts of food stuffs that are highly concentrated with saturated fats and trans fatty acids and cholesterol. This increases the cholesterol in the blood increases risk of heart attack. These fats are found in fatty red meat, eggs butter, cream and low fiber diet may also contribute to high blood cholesterol.

Some inherited genes may make people prone to some NCDS. Some people may be insulin resistant than other and will be therefore at higher risk of type 2 diabetes. Puoane et al (2010) explains that this is mostly common in adults but the number of children and adolescents with this condition are on the increase. The condition is a result of failure by the body to produce insulin in excess or when the body does not use the produced insulin. It is however important to note that the numbers of people with type 2 diabetes is on the increase as a result of diet and lack of exercise.

Several studies, explains Puoane et al (2010) have discovered a relationship between birth weight and growth and development as well as the development of risk factors for chronic diseases. Levitt (2005) states that children who survive Malnutrition are at risk of stunting and subsequent NCDS in adulthood. Catch up growth, Barker (1997) explains, involves babies born with low birth weight grow fast after birth and often become overweight as small children. As a result they develop high blood pressure and abnormal blood glucose metabolism, thus predisposing them to heart disease. This is what Barker (1997) called the barker hypothesis.

Raised blood pressure according to Levitt (1999) is estimated to cause 7.5 million deaths, 12.8% of the total annual deaths. This accounts for 87 million DALYs, 3.7% of total DALYs.

According to Puoane et al (2006) blood pressure is related to the risk of having stroke and coronary heart disease. Raised blood pressure may also cause complications such as heart failure renal impairment and visual impairment (Vartiane; 2000). Puoane et al (2010) cites a study done by Razum (1997), where they explain that Hypertension can be controlled with diet and physical activity and prescribed medication. This medication may need to be taken for life and this may take a toll on individual household and national budgets.

A person is said to be overweight if they have a body mass index of $\geq 25 \text{ kg/m}^2$ and obese when the body mass index is $\geq 30 \text{ kg/m}^2$. Globally 2.8 million people die yearly as a result of overweight or obesity. Being overweight and obese can lead to insulin resistance leading to diabetes and an increase in mortality rates, as a BMI increases. According to Puoane et al (2010) a high body mass index is closely linked to an increased risk of NCDS such as type 2 diabetes mellitus hypertensive diseases cancer & stroke.

Individuals are placed at risk of developing NCDS by social factors. These social determinants constitute causes of health problems that emanate from factors such as the environment, working conditions (where there is no adequate ventilation), living conditions (where there is no electricity) and socio-cultural factors (beliefs held by societies about thinness, overweight and obesity). Puoane et al (2010) explains that these include factors such as urbanization and globalization, environmental factors and socio-cultural factors. An explanation of each of these factors is given below.

Modernization brings with it economic growth which in turn draws people to urban areas from rural areas. In Zimbabwe the percentage of people living in urban areas has increased from 29% of the population in 1990 to 37% of the population in 2008 (Zimbabwe statistical fact sheet 2010) and according to WHO NCD country profile (2014) is now at 38.6%. The

risk with urbanization is that it leads to inactive life (sedentary life) and a change in diet. In urban areas people consume more sugar, fat and animal protein. Alcohol consumption is also high as well as cigarette smoking (Voster; 2005).

Rural urban migration has resulted in physical inactivity. Rural people are known for hard work traditional diet which consists of fresh food with plenty roughage, little sugar, fat and salt (Malentema 2002). Insufficient physical activity implies failure by people to engage in at least 30 minutes of moderately intense and frequent physical activity at least 5 times a week. Failure to exercise can then lead to heart disease, diabetes breast and colon cancer. Exercise reduces risk associated with stroke, hypertension and depression, and disability adjusted life years (32.1 million, 21% of global DALYS each year) are a result of lack of physical activity (Levitt; 1999).

Excessive use of alcohol may lead to premature death and disability. Hazardous and harmful use of alcohol is directly linked to increasing risk of some cancers, liver disease and cardiovascular disease. In 2004 2.3 million deaths occurred as a result of hazardous and harmful drinking. Above half of these deaths were a direct result of NCDs such as cancers, cardiovascular disease and liver cirrhosis. Hospedales (2011) argues that 4.5% of disability adjusted life years (global burden of disease) is caused by harmful use of alcohol.

In Africa there is generally low risk perception about obesity. Cultural and social beliefs hugely influence people's perceptions. It is greatly believed that thinness is as a result of sickness especially HIV and AIDS and personal problems (Voster; 2005). As a result women are encouraged to be fat so that they are attractive to men. Most men are overweight because they do not want to be viewed as having personal problems. This coupled with lack of exercise increases their body mass index and consequently risk of NCDs increases.

Environmental factors constitute those factors which influence poor food choice and those factors that prohibit people to lead active lives. Norman (2007) identifies what he calls the obesogenic and structural environmental factors and socio-economic status. The advent of the electronic media has greatly influenced people to consume high energy foods. Advertising makes it difficult for people to make healthy choices about the food they eat. In South Africa television is the most readily available source of information (Charlton et al 2004)

The cost of organic food is higher compared to inorganic food. According to Chopra and Puoane (2004) environmental risk factors for NCDs include a shortage of healthy foods which have low fat content and low salt. An unhealthy diet is a diet that is high in energy like processed foods which are high in fats and sugars as well as salt. Reducing salt, results in reduced risk of blood pressure and cardiovascular disease. Risk of coronary heart disease and diabetes is increased by saturated fat and trans fats. An unhealthy or poor diet may constitute of fast foods, cakes, biscuits cool drinks and sweets.

Environmental factors that may present as barriers for people to be physically active are what are referred to as structural factors. The absence of parks, proper sidewalks and facilities for exercising, crime and violence are all examples of structural environmental risk factors. Parks give children and adults a safe place to play and thus exercise. Where sidewalks are present people can walk freely thus leading active lifestyles. An environment which is free of crime can be a motivator for people to exercise as they jog or take walks.

Socio economic conditions hugely influence people's diet and how much they engage in physical activity. Living and working conditions contribute to NCD risk factors. Crowded and polluted living and working environments predispose people to NCDs. Pollution which could come from use of fire wood for cooking or living in areas where there are no sidewalks

or recreational parks to play and exercise further increases the risk of NCDs. Thus it becomes evident that social inequality has a bearing on NCDs.

Tobacco use can be both smoked and smokeless. Smokeless is that which is either chewed or sniffed and contains cancer-causing compounds. Hospedales (2011) argues that these may result in oral cancer, hypertension, heart disease stroke and other conditions; smoked tobacco on the other hand contains over 400 chemicals of the 400, 50 chemical cause cancers. Health risk also comes as a result of being exposed to second hand smoking (Global estimate of the burden of disease from 2nd hand smoke, WHO (2010).

Statistics reflect that of the 6 million deaths from tobacco each year 600 000 are attributed to second hand smoke or exposure among nonsmokers. By 2020 WHO estimates above 7.5 million tobacco deaths. About 71% of lung cancer, 42% of chronic respiratory and 10% of cardiovascular disease death is linked to smoking. Tobacco use is one of the most modifiable risk factors. According to WHO (2010), 4 Million people die every year as a result of tobacco use. Estimates project that by 2030; smoking may kill one in 6 people globally if the prevailing trend persists. According to Mackay (2002) cited in Puoane (2010) 17 million people from the developing countries will be involved.

2.3. Summary of risk factors in Zimbabwe

The table below summarizes adult NCD risk factors in Zimbabwe.

Table 1: Summary of NCDs risk factors in Zimbabwe

	Males	Female	Total
Current tobacco smoking (2011)	25,0%	<1,0%	12,0%
Total alcohol per capita consumption in liters of pure alcohol (2010)	10,8%	0,8%	5,7%
Raised blood pressure 2008	30,1%	31,6%	30,9%
Obesity (2008)	2,14%	11,6%	7,0%

Adopted from WHO NCDS country profiles (2014)

2.4. Economic development and NCDs

There has not been much research in the area of NCD health and economic development in Zimbabwe. The literature that this researcher used for this section is mostly from research done across the globe especially in Europe, Asia and some South American countries. These researches have shown that there is a close link between economic development, at household level and in health systems development as well as at national level, and NCD prevention and control.

2.4.1. Economic impact of NCDs on households

According to a survey done by the World Bank; Narayan et al (2000), in 60 countries sickness was discovered to be a frequent trigger for downward mobility. NCD related health care costs lead to a decrease or eventual loss of household income. Thus a vicious cycle emerges where poverty causes an increase in the incidents of NCDs and NCDs associated treatment and care costs cause poverty as those with the least financial cushion can withstand the effects of NCDs.

A report by the world health organization (2010) indicates that 100 million people are, each year, pushed into poverty because of payments for health services form direct out of pocket payments. This is exacerbated by the fact that 50% of total health expenses in most low-and middle income countries are from out of pocket payment. According to the Zimbabwe statistical fact sheet (2010) out of pocket expenditure as a percentage of private health in Zimbabwe was at 45.5%in 2000 this increased to 50.4% in 2007. NCDs worsen social inequalities as their burden is worse on those poorly resourced in terms of finance. This increases the chances of families being impoverished. In the event of sickness or a death of the family's bread winner as a result of NCDs major cuts in the family's income can result in reduced spending on food and education. Family asserts may be liquidated.

According to Savak et al (2010) premature and preventable death as a result of NCDs may lead to widowhood and poverty, thus increasing the burden on social welfare on countries without adequate social policies. Care and investment in children may also be lost. NCDs are associated with disability in some instances as a result of stroke. Permanent disability of bread winners may cause poverty. This is because disability is a burden normally thrust on women and children. Women and children might forego education as well as employment opportunities leading to financial insecurity later in life. Thus children may lose opportunities for going to school and women may also lose sustenance for their families.

Very little data is available on how out of pocket expenditure for health care (NCDs) affects Zimbabwean population. Available information is on studies carried out in India, Russia, Nepal, Brazil, Malawi and Tanzania. In 2004 in between 1.4 million to 2 million people experienced high spending and between 600 000 and 800 000 were thrown into poverty as a result of cardiovascular disease and cancer care (Mahal et al; 2010). Krut et al (2009) reveals in their study on borrowing and selling for health that of every four families affected by NCDs one family borrows or sells assets to pay for health care in the world's poorest countries.

There are projections from WHO that the prevalence of NCDs will increase. This in turn implies that the economic impact of NCDs will grow and if not controlled will have negative effects on sustainable development. This is because studies such as Russian federation living standards measurement carried out between 1997-2004 shows that NCDs have long term expenditure as they are chronic disease.

The cost of medicine is so high in developing countries, such that it may cost up to eight days wages to purchase a month's supply of treatment for cardiovascular disease and a day's

wage to purchase medicine for diabetes (Gelders et al; 2006) and Cameroon et al ;2009). In Malawi treatment for coronary heart disease costs 18.4 day's wages and the cost of one month treatment for asthma is 9.2 day's wage in the same country (Mendrs et al; 2007). Neuhan et al (2001) explains that for Tanzanian households the cost for diabetes treatment is about 25% of the minimum wage. Clearly the data presented above reflects a need for prevention and control of NCDs for sustainable human development. This area has hugely been understudied in Zimbabwe and there is need to pursue it in order to inform policies and programs.

2.4.2. Economic impact of NCDs on health systems

The cost of health is continuing to increase due to an increase in the number of people suffering from NCDs. The cost of treatment of diabetes only is up to 65 billion in Latin America and the Caribbean region. This is about 2% to 4% of the GDP Wild et al (2004) and Zhang et al (2010) puts this at 8% to 15% of national health care budgets. The cost of health care is not only increasing in low income countries. Oman a high income nations has realized an increase in per capita expenditure as a result of NCDs. In a period of 10years from 1995 to 2005 a 64% increase in health expenditure has been realized. According to Al lawati (2008) it is projected cardiovascular diseases will be accounting for 21% health expenditure in 2025 in the same country.

According to the African health observatory (2010) government expenditure on health in Zimbabwe was at 9% of total expenditure, in 2000 it was at 10.7% and this decreased in 2001 to 8.9%. Per capita total expenditure on health (Ppp int. \$) was at 26 in 2000 and decreased to 20 in 2007, while in Africa it was at 86 in 2000. This trend shows that as NCDs increase expenditure on health also increases. These preventable health problems are taking a toll on national health budgets as well as individual household incomes, thus they have become a

developmental burden and in turn are affecting socio-economic as well as environmental development

2.4.3. Social factors and NCDs

NCDs cause inequality as they result in unfairly distributed opportunities. Poor people are more exposed to risk factors and consequently have an increased burden of disease but they have little resources to deal with them. The poor are more exposed to NCD risk factors because they cannot afford the cost of less energy dense food stuff. The poor can neither afford the cost associated with screening or treatment of NCDs. As a result there is an increase in the numbers of poor people who are suffering and dying from NCDs, thus cause orphan hood which is closely linked with poverty. Failure to access treatment and care has led to increased need for chronic care like dialysis and burden on home based care givers places a burden on families, thus causing social disruption (Kimmel 2001).

Gender inequality is both a cause and a consequence of NCDs, chronically ill patients need care and this is normally provided by women and girls. Women and children might forego education as well as employment opportunities leading to financial insecurity later in life. Savak (2004) explains that premature and preventable death as a result of NCDs may lead to widowhood and poverty. This increases the burden on social welfare on countries without adequate social policies. These may forego education and employment opportunities. This puts them at risk of financial insecurity. This causes social inequality.

According to the NCD Alliance (2010; 2) “inequalities are a major driver of NCD epidemic and social factors or the conditions in which people are born, grow, live, work and age, are at the root of much inequality” education and income hugely influence vulnerability to NCDs and their risk factors. In Asian countries such as Thailand Bangladesh, India and the Philippines

tobacco use is highest among uneducated and poorest populations (Palipudi et al 2012). Removal of barriers to preventing access to health services and addressing social conditions that expose people to NCDs must be set as a priority (WHO Global Status report) Bangladesh has made huge strides in addressing these through inclusion of NCDs in strategic investments Plan and public financing insurance health vouchers.

2.4.4. NCDs prevention and control and poverty alleviation

If prevention and control of NCDS is strengthened the health and economic burden on the poor and more vulnerable groups is reduced. Health care systems are also strengthened through NCD control and prevention. This will help improve interventions “for all diseases and health conditions, including improving and strengthening, public health literacy, human resources technical capacity, primary care capacity and delivery, diagnostic capacity, infrastructure for secondary and tertiary care and procurement strategies for essential medications”. (American Cancer association 2012; 4) Maternal and child health will benefit from tobacco control and improved nutrition. Beaglehole (2011) explains that reducing smoking and indoor air pollution decreases childhood illness. Thus all these improvements in the quality and accessibility of health care may have a ripple effect of addressing poverty alleviation and promoting sustainable development.

2.5. NCDs and sustainable development

2.5.1. NCD prevention and control and sustainable development

Sustainable development policies on food security, sustainable agriculture, sustainable transportation and urban air pollution can help prevent some of the NCD risk factors. If NCDS are addressed within the frame wok of sustainable development they can provide evidence based support for the negative impact of some environmental policies. Educational efforts for NDCs prevention have a link to environmental sustainability. Wellness initiatives

by government and the private sector will contribute to a greener economy thereby reducing burden on the economy and health systems.

Demographic trends are important as they inform sustainable development policies and plans. NCDS can help in assessing impacts of sustainable development. Agenda 21 Paragraph 19 emphasizes the importance of monitoring demographic trends for the formulation of policies for development. But progress with NCDs has been slow, even though, importance of NCDs prevention and control, as a founding principle for sustainable development is well acknowledged. There is an interconnection between health and development. According to the American cancer society (2012) "environmentally problematic forms of economic development can result in severe environmental health and nutrition problems". Agenda 21 and the Rio declaration on environment and development acknowledge the connection that environment, socio-economic disparities and poverty have.

According to Agenda 21 Section I health is regarded as a very important condition for the realization of sustainable development goals. It cannot be over emphasized that human beings are at the centre for sustainable development. The American cancer society (2012) noted that the connection between NCD prevention and control and sustainable economic development is very much overlooked. It is of paramount importance to note that degradation of the environment and NCDS have similar causes and solutions and to include NCD challenge as part of sustainable development agenda is vital.

Curative and preventive health care systems that are accessible to all are regarded as important for sustainable development. Alleyne (2013) explains that multisectoral actions are also important for sustainable development. Multisectoral actions are also important for especially preventative health. Health related health sector, non health sector coordination is

also crucial (business, social educational and religious institutions) in coming up with solutions to health challenges (Agenda 21). The Johannesburg declaration on sustainable development also emphasized the need to “give priority attention to the fight against the worldwide conditions that pose severe threats to sustainable development which include chronic diseases (Alleyne; 2013). However despite the entire consensus that health is crucial to development there has been minimal focus accorded to NCDs.

Synergy between NCD control and sustainable development policies for the control of NCDs and environmental issues has the potential for significant synergies. The American cancer society has elucidated that there is need to combine environmental policies with those policies governing the control of NCDS. An example is that of the bio fuel policy being advocated for by Zimbabwe. While the bio fuel policy is very noble in principle it may undermine the country’s food security and nutrition. Food security is an important part of sustainable agriculture development.

There is need to look after and give power to communities and groups that are vulnerable, such as women and children and the poor and voiceless within societies in decision making processes. Issues pertaining to fast paced urbanization, pollution, provision of essential drugs, universal access to health are all important for sustainable development and are closely linked to NCDS.

The concept of duality of structure should be taken as the starting point in order to understand the relations between prevention and control of NCDs and sustainable development. It is the beginning of uncovering structural factors which either make possible or impossible sustainable development initiatives. There is a link between sustainable development and prevention and control of NCDs. As a result in trying to solve either health problems related

to NCDs or sustainability problems new problems are created. According to Kjaergard (2014) it is a paradox that there are a number of initiatives for the promotion of prevention and control of NCDs and sustainable development but at the same time there is an increase in NCDs.

Kjaergard (2014) believes that his paradox is a result of failure to include NCD prevention and control and the sustainability dimensions at local, regional and global levels. These problems are caused by intensification of agriculture and food production. Brown et al (2005) explain that clearing of tropical rainforests for palm plantations in countries such as Malaysia, Indonesia, Cameroon, and Nigeria is intended to solve health problems. Palm oil is free from Trans fat and provides affordable supplies of food oil. But the negative side is that palm oil is rich in saturated fats which are a risk factor for NCDs. Production and consumption processes caused by market forces together with cost reduction are the major causes of health problems such as NCDs.

Sustainable development according to Olsen et al (2003) and Shiva (2005) is a process towards a new normative horizon and implies a paradigm shift from a development based on inequality and over exploitation of natural resources and environmental services to one that requires new forms of responsibility solidarity and accountability. On the other hand NCD prevention and control is part of the dynamics of social organization, lifestyle and patterns of consumption and are influenced by the bio-physical environment. Therefore health including NCDs incidence is determined by a complex framework of social and economic systems, the bio-physical environment and the person's individual characteristics behaviors, (Kjaergard; 2014). Thus focus of NCDs prevention and control should be on strength and assets to health.

Kickbusch (2010) is of the conviction that within the international arena, specifically WHO, environmental sustainability should be realized as a structural condition for promoting health. On the other hand health should be recognized as a precondition for sustainable development. The increasing demand for bio fuels and tobacco poses a threat to health and increases risk factors for NCDs as local farmers may substitute food crops with bio-fuels and tobacco. Tobacco processing may lead to pollution which is a risk factor for NCDs. Reduction in food crops threatens household food security and may result in malnutrition in children which is a risk factor for NCDs in adulthood.

According to FAO (2009) more people are living in urban areas than in rural areas. In Zimbabwe in 2008 38.6% of the population lives in urban areas (WHO NCDs statistical Fact sheet; 2014). Urban agriculture has the potential to improve availability and diversity of food as well as creation of jobs. Urban agriculture may reduce food insecurity which is closely linked to overweight and obesity (Haering and Syed 2009: 34-43). Eisenmann et al (2011) explains that food security and over weight as well as obesity coexist and that the prevalence of those over weight remains high among food insecure children.

Urban agriculture could be a way of making cities more climates friendly and strengthening local food markets. Lessons can be drawn from the city of Havana where about 70% of fresh produce is grown within the city's borders. (Altierr et al; 2012). Therefore applying duality to urban agriculture would mean to focus on structural factors and actors which enable or constrain changes in practice. Challenges may be the knowledge of local actors on the conditions for changes of the social system.

Neither health nor sustainability should be given precedence over the other in strategy development and hence in the implementation of concrete initiatives. To be truly integrative,

a strategy should consider sustainability in a health perspective and health in a sustainability perspective and address both perspectives in the formulated policy strategies and the concrete development initiatives.

There is generally a short of knowledge on how strategies related to NCDs and sustainability work together. Thus it becomes vital to include social science in health issues more actively than they are today. Cooperation involves co-production of knowledge on how to incorporate health and sustainability as equal critical components in strategy development, choice of means and in implementation in practice. Kjaegard (2014) argues that allowing those citizens with NCDs or their representatives to engage and play a role in integrating health and poverty reduction and sustainability may be a way of addressing problems.

2.6. NCDs, the environment and multisectoral approaches to sustainable development

According to the American cancer society (2012) environmental factors in their broadest sense include chemical, physical and biological factors as well as built environment and community arrangements. Both NCDs prevention and environmental protection require a multisectoral approach i.e. whole government. These require health, environment, transportation, agriculture, finance, foreign affairs and education. Concentration should be on prevention programs rather than control through treatment. This fact is further emphasized in the political declaration of the UN High level meeting on the prevention and control of NCDs. The declaration explains the importance of establishment of “or support and strengthen, by 2013, as appropriate mutli-sectoral national policies and plans for the prevention and control of NCDs” (Political declaration 2011). Thus including environmental factors becomes important for (NCDs) and sustainable development. Environmental factors such as urbanization and urban green development shall be discussed below.

2.6.1. Sustainable agriculture

Kickbusch (2005) sustainable agriculture could play a part in giving people healthy diets that can help avoid NCDs. Kjaergard (2013) quotes the American Public Health Association (2007) who define a “sustainable food system” as “one that provides healthy food to meet current food needs while maintaining healthy ecosystems that can also provide food for generations to come with minimal negative impact to the environment.” Ensuring food security is a precondition for preventing NCDs. Food security is when all people can have access at all times to sufficient, nutritionally adequate and safe food. Under-and over-nutrition are key drivers of the NCD epidemic in developing countries.

Policies and programs to improve maternal and infant health and nutrition can trim down a child’s susceptibility for developing NCDs later in life, particularly diabetes and cardiovascular disease. The NCD alliance (2013) explains that policies to encourage moves in agriculture from production of produce such as meat, dairy, palm oil, and tobacco to more fruits and vegetables would lessen greenhouse gas emissions and protect the environment, while also contributing to NCD prevention efforts.

2.6.2. Sustainable energy for all

According to Wilkinson et al (2009) women and children who are open to the elements of household air pollution and indoor smoke from stove emissions can use cleaner cook stoves to prevent illness and death from respiratory and cardiovascular diseases. Cleaner cook stove programs have been implemented in countries such as China, India, and Guatemala. Rio Declaration on Environment and Development, June 1992. According to a Guatemalan research showed that cleaner cook stoves had a 90 percent reduction in carbon monoxide levels in the kitchen, while those field-tested in India showed a 50 to 60 percent reduction in indoor air pollution.

2.6.3. NCDs control, urbanization and urban green development

Enhanced urban planning and transport policies can support a move from private motorized transport to walking, cycling, and public transport. This helps to prevent heart disease, diabetes, cancers and stroke. Research from Sao Paulo, in Brazil, has shown a decline in death rates from cardiovascular disease between 1980 and 2005, which may be partially due to prevention efforts, including the city's Promotion of an Active Lifestyle project. This is one project that the city of Harare can learn a lot from in terms of designing and implementing policies for public transportation.

According to the NCD alliance (2010) the shift away from motorized transport can also help prevent respiratory and cardiovascular diseases through reductions in air pollution. The according to the NCD Alliance (2010) the United Nations Department of Economic Affairs (2011) propounds that while it is certain that more than half of the world's population lives in urban areas, and by 2030 it is estimated that two-thirds of the world's population will be urban dwellers, the issue of urban planning becomes all the more important. Urban planners should shift from considering motorized transport to working more with cycles and or walking.

Improved management of the city should pay attention to the needs of women and children. For urbanites most factors that affect human health are not within the health sector. Therefore there is need to coordinate services. Urban sustainable development policies are important for the control of NCDs which are related to obesity. A population in which 40% of people are obese needs estimated 19% more food energy than does a population with a normal distribution of body mass index (Edwards et al 2009; cited by Alleyne; 2013). This is because urbanization reduces physical activity, compromises and increases air pollution.

The greener Economy Brief (WHO 2011) explains that cycling, walking and use of transit or public transport enhances activity levels preventing NCDs such as cancer and diabetes. Thus according to the American cancer association (2012) green urban planning policies reduce NCD risk factors and at the same time address pollution problems. Local governments influence and are responsible for planning how environments in which people live should be designed. These are the natural environment, manmade, social and economic environments. It is the duty of the local government to manage socio-economic infrastructure, manage planning processes establish policies and regulations.

Local governments have a lot to do with energy management through town planning, local transport, land use infrastructure provisions and community education. Where the local government works in partnership with health, transport is designed such that there is not much dependence on motorized transportation to reduce pollution and also to encourage the population to exercise. This helps to reduce risk factors for NCDs. If land use is properly designed recreational parks are included in town planning to allow for children to have safe places to play and exercise thus encouraging healthy lifestyle from childhood.

Tobacco-production contributes to climate change; clearing land to grow tobacco and curing of tobacco requires wood. Trees used could remove carbon dioxide. In times of electricity blackout air pollution from burning wood may cause fine particulate air pollution resulting in indoor pollution which can cause obstructive pulmonary disease. Tobacco tax may be instituted (Reed; 2010). Work places and public places can be made smoke free places to reduce passive smoking, thus reducing absenteeism improving productivity lowering health care costs and insurance premiums (Ross; 2005).

2.7. NCDs and millennium development goals

If interventions are made towards prevention and control of NCDs considerable progress will be made towards attainment of MDGs. If NCDs are controlled poverty will be reduced. For MDG 1, reduction in adult death rate reduces poverty as bread winners continue to fend for their families. On the other hand if NCDs are averted and reduced more funds will be directed at poverty alleviation rather than disease prevention and control. MDG 2 if prevention and control measures are not put in place more children will be excluded from school. Children may forego education owing to financial constraints imposed by medical and treatment expenses.

MDG 3 is concerned with gender equity. Women can be empowered if intervention is made toward reducing NCDs. Women are the care givers for the sick as a result they may forego employment opportunities for care duties. This leads to financial insecurity. In Zimbabwe cancer is killing one in every four women. If NCDs are prevented and controlled a lot of deaths will be reduced and more time will be spent productively. On the other hand MDG 4 and 5 can be attained through prevention and control of high blood pressure and gestational diabetes. The effects of HIV are reduced if less people living with HIV suffer from NCDs. These infections can increase undesired outcomes of pregnancy. Maternal exposure to second hand tobacco smoke increases the risk of respiratory infections like asthma.

MDG 7 can be promoted through biodiversity friendly, sustainable food production, limiting production of and exposure to air and water pollution and limiting exposure to toxic compounds among other measures. MDG 8 a multi- sectoral approach to NCDs will go a long way towards achievement of global partnerships. It is however important to note that for global partnerships to be achieved relations between the north and the south should not be exploitative in nature.

Table 2 Effect of NCDs on MDGs

MDG	RELEVANCE TO NCDs
Eradicate Extreme poverty and hunger	NCDs are driven by poverty and can reduce or perpetuate poverty.
Achieve Universal Primary Education	For many NCDs result in or are a cause of exclusion from school.
Promote gender equality and empower women	Women suffer inequality and need urgent support to strengthen or transform their roles as caregivers.
Reduce child mortality and improve/ improve Maternal Health	Prevalence of BP and gestational diabetes increases risk of adverse outcomes of pregnancy and maternal health.
Combat HIV and AIDS malaria and other diseases.	Siloing of disease has led to neglect of NCDs. Response should be on improving general health of the population.
Ensure Environmental sustainability.	Environmental factors are important for NCD prevention and control.
Develop a global partnership for development.	Partnerships need to be developed and a multi- sectoral approach needs to be strengthened.

Adopted from Hobbs (2011)

2.8. Embedding NCDs in sustainable development

2.8.1. Lesson for NCDs from HIV

With the advent of HIV and AIDs initial focus was on prevention in order to contain the pandemic and also because Anti-Retroviral Therapies were very expensive. This focus on prevention shifted after the Durban Aids conference in 2000. Stevens (2011) explains that the focus moved to treatment because the benefit of treatment showed that more deaths could be prevented per dollar spent than by focusing a lot on prevention. Treatments have been expensive in low in-come countries because of lack of health infrastructure.

Placing priority on treatment over prevention has resulted in failure to stop new infections thus increasing numbers of people with HIV. This was a strategic error as there are growing concerns on increasing needs for funds for treatment for people currently on treatment of and

those requiring to be initiated on treatment, rate of infection is resulting in more people needing treatment but only a few are being initiated on ARV therapy. Over (2008) explains that newly infected people added to the increased lifespan of those infected already creates a new global entitlement to treatment that could grow to \$16 billion by 2016.

There are many lessons to draw from the history of HIV for addressing NCDs. NCDs need long term expenditure for treatment and care just like HIV and AIDs. These NCDs just like HIV and AIDs can be prevented. Daar et al (2007) explains that 44% of deaths from NCDs can be prevented. More concentration on prevention is needed if funding “liabilities such as being created for HIV and AIDS can be avoided (Stevens; 2011). Thus prevention should not be neglected at the expense of treatment.

As highlighted earlier on the major risk factors for NCDs are centered on diet, physical inactivity obesity tobacco use and excessive consumption of alcohol. Low cost interventions to reduce these risk factors may include promoting physical exercise and healthy eating. The food industry may be given incentives for replacing unhealthy ingredients with healthier alternatives. The disease control priorities projects of 2006 cited in Stevens (2011) explains “that replacing trans fats in manufactured products with poly unsaturated fats would reduce cardiovascular disease 7 to 40 per cent, depending on the region”.

When looking at the medical prevention of NCDs it is important to realize that they are a developmental problem. Thus I concur with Steven (2011;12) where he explains “that behavioral measures may fail to reduce NCDs burden because NCDs are at the middle of the interplay of a complex range of local behavioral and socio-economic factors, such as increased prosperity and cultural preferences”. Some best buy interventions have been

identified and these cost below US\$1 per capita population each year. A wide range of low cost proven methods of preventing NCS should be prioritized.

As opposed to popular belief HIV is not the biggest health problem in the poorest countries instead NCDS kill more people of productive age. Forgone, productivity as stated by Gunde et al (2006) is projected over 84 billion for the period 2006 to 2015 in the 23 worst affected countries. The funding landscape for HIV and AIDS is over crowded with donors such as the USAID, PEPFA, DFID, World Bank Global Fund UNAIDS, Gates foundation and many other smaller groups and NGOs. With so many funders the risk of duplication of activities is very high (Ravishankar et al; 2009). Other priority health sectors such as NCDS have thus been left unattended or with very little funding from the country's fiscal budgets. In Zimbabwe for instance according to the statistical fact sheet (2010) government expenditure on health as a percentage of GDP was at 8.9 % in 2007 down from 10 % in 2000.

Cavagnero et al (2008) noted that countries that increase health spending are at risk of Dutch Disease. Heller et al (2004) in Stevens (2001:14) explains that "Dutch disease is when large inflows of foreign currency will raise local exchange rates, halting exports; inflation will increase when aid funds are spent locally on "non tradable goods", and in response domestic interest rates will be pushed up thereby squeezing social spending by raising public debt service payments". This will reduce employment and revenues available to the state as international competitiveness will hit the export sector. According to Cavagnero et al (2008) risk of Dutch disease is high in countries that have a high HIV prevalence rate such as Malawi Swaziland, Tanzania, Zambia and Zimbabwe. This therefore implies that as the burden of NCDs increases it is imperative not to over rely on foreign aid in prevention and control strategies.

Another lesson that could be drawn from HIV and AIDs is that innovation is vital as vaccines and treatment can reduce deaths. The advent of ARV therapies has resulted in improved health and prolonging life spans of people with HIV resulting in improved economic productivity and less money used in Hospitalization (Stevens 2011). Innovation in NCDs could reduce medical costs associated with cancer diabetes and cardiovascular diseases. This will allow people to continue to be economically productive for longer.

The other important lesson should be drawn from how the MDGs were drafted in relation to disease prevention. There was emphasis of HIV/AIDS malaria and Tuberculosis as well as maternal and child health. There is need to avoid soloing diseases, that is, dividing them into, cancer diabetes or cardiovascular diseases. Debate should focus on response to improving general health of the population. Prioritization of individual diseases leads to funding competition between disease or overlap and repetition of efforts thus wasting valuable resources.

Drug quality is of paramount importance when it comes to decrease of the rate of clinical failure of drugs. In relation to NCDs drugs quality of medicine must be maintained during production, transportation and storage. According to Stevens (2011) failure to maintain quality can pose health as well as macroeconomic threats as drug users may end up spending prolonged periods in hospitals. Government should only have a role to play in commissioning services ensuring standardization, monitoring of quality of service. Service providers should be given autonomy when it comes to management. Barriers to the formation of private risk pools and new health providers should be removed.

A well-coordinated multi stakeholder network of informed knowledgeable professional is important for advocacy. This has worked in the prevention and control of HIV and AIDs and

this framework can be used as basis for setting up advocacy work for NCDs. On the international front the NCD alliance and the Lancet NCD Action Group can be the starting point. It is however sad to note that in Zimbabwe there has not been much coordinated work. Individual organizations work in isolation and this impedes progress. According to the Alleyne (2013) “official development assistance is likely to be scarce and even now bilateral agencies are reluctant to direct resources to NCDs prevention and control”. Therefore there is need to coordinate advocacy work with in the NCD community so that effectiveness of aid is not compromised.

There is need to encourage partnerships for promotion of prevention and control of NCDs. Partnership with environmental department, Agriculture and food production, Environment is important because current pathways for development are not sustainable. Addressing these challenges posed by the environment on NCDs will make sustainability achievable. On the other hand agriculture and food production are linked closely to nutrition related NCDs, Stevens (2011) is of the conviction that research to determine whether food and food policy will lead to more NCDs or to making healthy and sustainable diets reasonably priced and accessible to all will have to be made.

Secondary prevention of NCDS can also be attained through strong joint venture with adolescents and young people because many risk factors that affect young people start with consumption patterns developed at adolescence, explains Sawyer (2012). These need to be addressed as they are the adults of the future. Further partnerships should be made with maternal and child health departments. This is aimed to result in life- course approach where NCDs are addressed as “early as in-utero and continue throughout life into old age” Alleyne (2013) this approach can provide a long term answers to NCDs and their metabolic risk factors.

Political leaders are already leading in terms of NCD prevention and control. The global goal of reducing NCDs by 25% by 2025 was adopted by political leaders. WHO and UNDP have also underscored the need to address NCDs prevention and control when charting the development path after 2015. There is however little or no information to indicate this awareness at national level. Political leaders need to be sensitized about this. Thus this becomes another area of inquiry for this researcher.

2.9. Health promotion and NCDs

Health promotion can be defined as involvement in health by individuals or groups. This involvement empowers people to have more control over determinants of health thereby improving their health. Health promotion also includes social and political processes. The major relevance of health promotion to NCDs is that it enables tackling of fundamental determinants of NCDs. NCDs prevention and control interventions emphasize advancement of people's health, prevention of disease and appropriate and accessible treatment.

The distinguishing factors of health promotion in Africa are that the process hugely focuses on the community; more focus is placed on methods such as behavior change communication and information education and communication rather than the broader process. Nyamwaya (2009) explains that the results of health promotion in relation to NCDs are that health promotion can lead to reduction of the risk factors associated with specific diseases. For instance life skills education for the youth can help them stop smoking thus reducing risk of lung cancer. If populations are encouraged to adopt healthy lifestyle they will adopt exercise, environmental and nutrition practice.

Table 3 Major health promotion strategies and their end results

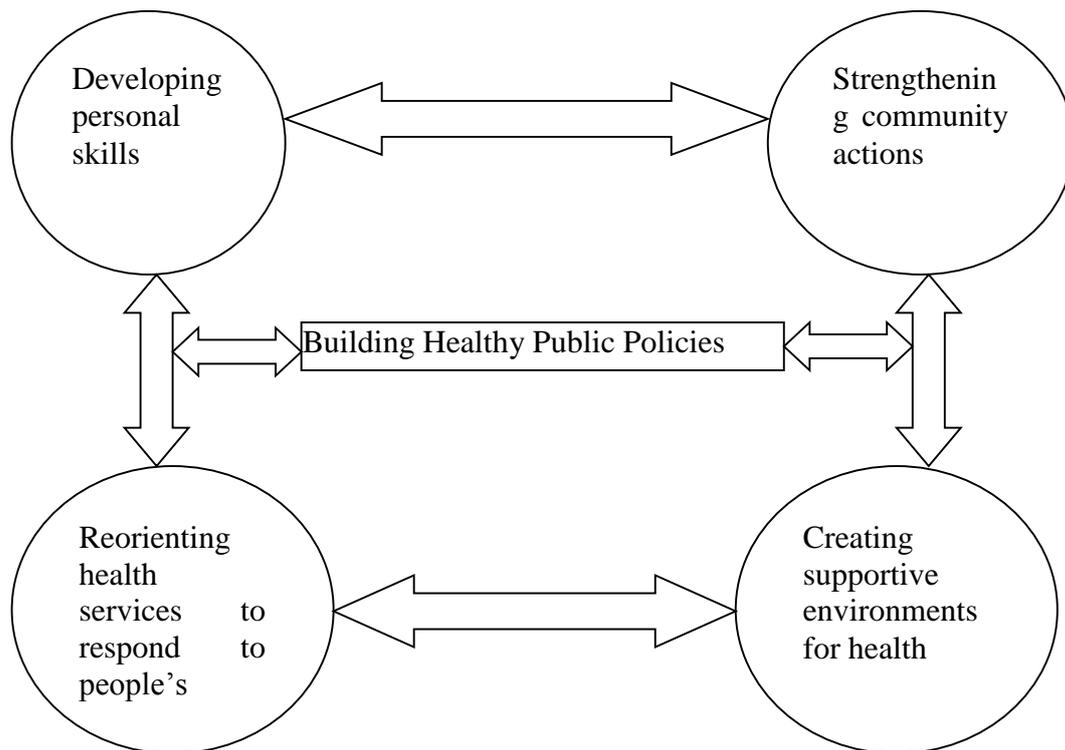
Health promotion strategy	End Results
Knowledge and skills Development	Empowerment for healthy behavior
Mitigation of competing interests in society	Creation of conditions that support healthy behavior including reorientation of health service, health policies, legislation and regulations
Advocacy for health	Increased resources and political support for health service and development

Adopted from Nyamwaya (2009)

Building of healthy public policies is important for the prevention and control of NCDs in order to achieve sustainable development. Those that are responsible for policy formulation and implementation need to be aware of the consequences of their decision on health. According to Nyamwaya (2009) this translates to policies that promote safer as well as healthy goods and services and environments which are clean and enjoyable. Policies to do with nutrition such as fortification with iodine and vitamins, tobacco control and alcohol control may be instituted. NCD policies and strategies need proper implementation.

Community actions for NCD can be developed to provide people with knowledge on causes and prevention of NCDs. If people are knowledgeable, healthy priorities can be set correctly with proper selection of strategies and implementing activities such as on issues to do with diet, treatment and physical activity. Community action for NCDs depends on already existing resources (human and material) in the community to enhance self-help as well as social support. This dependence underscores the need for sustainability, as resources need to be preserved for future generations. Health promotion helps people to identify options that are at their disposal so that they can have more control over their health and their environment such as medical checkup, self-care, treatment as well as access to health services.

Fig 2 Levels of action in health promotion



Adapted from Kickbusch (2005)

Common approaches to health promotion are individual, group population setting and issue approaches. The methods most popularly used are health education, behaviour change communication, social marketing social mobilizations advocacy and lobbying as well as information education and communication. Each of these approaches will be discussed below in order to have an appreciation of how they can be used in promoting prevention and control of NCDs in Zimbabwe and Harare in particular

The health promotion concept has been used in this study and nine public health concepts have been adopted for this study. The respective to underpin the concept are:

- Public health perspective
- Health determinants
- Cluster of risk factors

- Life course approach
- Preventive strategy identification
- Population wide is individual based approaches
- Health disparity

2.9.1. The public health perspective

According to the Report of the Committee of Inquiry into the Future Development of the Public Health Function (1988) public health is both an art and a science of preventing disease, lengthen life and encourage good health through organized efforts and choices of society, public and private organizations communities and individuals. This approach puts emphasis on the population and NCD risk factor rather than on individual symptoms or diseases. This approach helps in achievement of prevention of disease while addressing the factors that determine health. This perspective increase effectiveness and efficiency of the broader health care system.

2.9.2. Health determinants perspective

Factors that determine health are important in coming up with health on NCDs. These factors include the physical psychological, social, environmental and economic factors. The factors, which have great influence on health, are what are known as the determinants of health. Dahgren et al (1991) explains that these are the factors that influence health and disease status. These health determinants include:

- Generic predisposition of people
- Lifestyle and behavioral factors
- Social relationships (family friends community socio-economic & cultural environment where (learning playing working and living).

2.9.3. Cluster of risk factors

NCDs are caused by common risks factors, as explained earlier on four major NCDs cancer diabetes mellitus chronic respiratory disease and cardiovascular diseases are caused by three behavioral risk factors, which are smoking physical inactivity and an unhealthy while alcohol use is related to cancer heart and disease. These are mediated through biomedical risk factors such as obesity hypertension and an adverse lipid profile Browns et al (1998). Prevention of risk factors will result in reduction of obese people or an ideal lipid profile, thus achieving an improved health profile of the community.

2.9.4. Life course approach

It is important to make use of opportunities that arise at each stage of life. People's health is hugely influenced by factors that affect all stages of their life span. Aboderin et al (2002) explains that risk factors of NCDs increase with age. Therefore the life course approach underscores the interactive and cumulative impact of social and biological, factors especially in early life, predispose people to NCDs later in life (Aboderin; et al 2002). A decline in the functional capacity of individuals is determined by behavioral factors. Adopting a lifestyle which is healthy will prevent early functional capacity decline during older age. It is therefore of great importance to ensure secured growth and development early in life, maintaining good levels of function and independence in adulthood to prevent disability.

2.9.5. Preventive strategy

Prevention of NCDs should be planned on three levels:

- Primary prevention
- Secondary prevention
- Tertiary prevention

A. Primary prevention

This is prevention of onset of diseases. Methods to use in primary prevention are health education, immunization, environmental measures and social policy. A change in behavior is the desired goal to prevent diseases from developing. Mass media, pamphlets, recipes Distribution, health talks, exhibition boards' display, posters and 24 hour health education hotlines can be adopted as methods. So in addressing low fruit and vegetable consumption the 2 plus 3 a day campaign was launched by the UK government to encourage consumption of fruits twice a day and vegetables three times a day. These can be lessons for other countries such as Zimbabwe.

B. Secondary Prevention

This method largely has to do with stopping of progression of a disease after it has already occurred. This can be done by early detection and diagnosis then early effective treatment. When relapses of disease are averted through lifestyle improvement measures it also becomes secondary prevention, like what happens when a smoker quits the smoking habit after a heart attack. Screening of disease is a measure that can be adopted to prevent disease. Cervical cancers with smear or VIAC are examples of this secondary prevention of NCDs

C. Tertiary Prevention

This is when rehabilitation is used on people with confirmed diseases to reduce residual disability and associated complications thus maximizing potential years of enjoyable life even though the disease cannot be cured. The rehabilitation may include education and counseling, exercise training, risk factor modification vocational counseling and emotional psychosocial support.

2.9.6. Population-wide versus individual- based approach.

There is a need to strike a balance between population-wide and individual-based strategies for NCD Prevention. Population-wide interventions target the control of determinants of health in the population as whole. The gains of population-wide interventions are that it lowers risk of NCDs in the entire population; gains are wide as more people are reached, but the effect on the individuals concerned may not be very observable. Population wide approaches may include raising duties on tobacco products, reducing salt content of processed foods on the market. This can be done through legislation or self-regulation of the industry.

On the other hand an individual-based intervention identifies high risk susceptible individuals and gives them attention at individual level Ross (2001). The gains of the individual based approach are appropriate for the individual but they have a limited effect on the population at large as more concentration is on the individual. Underlying causes of illness are not altered. This approach may be expensive owing to costs of screening to identify high risk individuals Rose (1992). An example of this approach is cardiac rehabilitation. This reduces cardiac deaths; a review showed that death was reduced by 26% to 31% in exercise only and comprehensive cardiac rehabilitation Jolliffe (2001). There is therefore need to properly balance population wide and individual based strategies because each has its unique benefit for people in relation to NCD prevention and control.

2.9.7. Health disparity

These are the differences in the health status of population groups. These can be as a result of lifestyle, material resources and opportunity of receiving health services (Leon; 2001). There is therefore great need to reduce the gap between population sub-groups. There is need to reduce the gap between the rich and the poor. It therefore becomes an important public health

task to identify those determinates that cause health disparities and develop responsive policies to reduce them.

2.9.8. Heath literacy and social marketing

Heath literacy which is the ability to read and understand as well as act on health information must be increased. People need to be literate enough to read and understand health information on leaflets and brochures. Social marketing can be defined as an approach used to come up with activities intended at altering or maintaining behavior for the good of individuals and communities. This is usually done through mass media such as news papers, radio and television. This can encourage people to use health information for behavior change.

2.9.9. Setting heath priority

Correct priorities need to be set to address important heath issues. This enables correct use of resources for health. There is need to agree on what priorities should be set and what targets need to be met. Factors that may determine whether or not to focus on a particular NCD are listed below.

- Public health importance as cause of death
- Consequences as a source of morbidity
- Financial cost to the community
- Preventability or possibility of early detection
- Potential for increase in morbidity or mortality
- Opportunity for achieving substantial heath gain through cost effective interventions
- Importance in terms of public perception

2.10. The mutual linkages between NCDs prevention and control and sustainable development.

Hancock (1993) has contributed immensely to the development of a conceptual understanding of the relationship between health promotions and sustainable development. His work has been the basis or theoretical framework for addressing programs, indicators and projects within the field of healthy cities and communities (Kjaergard; 2013). According to Hancock (1993; 43), health places emphasis on equity, its concern with the broad social ecosystem and its concern for human health. Sustainable development on the other hand places emphasis on future generations, natural ecosystems and health of other species.

Hancock's model reflects crucial links between health and social wellbeing, environmental and economic wellbeing with a focus on equity and sustainability. According to this model focus must shift from economic development to human development. Economic activity must result in the resources of earth being distributed in such a way that health for all is achieved. Thus equity becomes a key word. According to Hancock (1993) besides depending on wealth generated and its equitable distribution, health should also depend on available environment.

Hancock's theory has been taken further by Kickbusch (2010), who places both health promotion and sustainable development at the core of the model. According to Kickbusch (2010) the interdependence between the three pillars of sustainable development i.e. economy, social and environment are major concepts to create a healthy and sustainable community. According to Kickbusch (2010:11) the "sustainable development concentric model has the economy on the core, the society in the inner concentric circle and the environment in the outer circle. The health promotion concentric model is close to the one presented by Hancock. Here health promotion is placed at the core. It is important to note that both models are driven by similar forces, such as socio economic, cultural, environmental and

political factors. Kickbusch (2010) is convinced that health promotion and sustainable development have shared goals and joint strategies for action. As a result they should complement each other rather than compete against each other.

2.11. Theoretical framework

2.11.1. Dependency theory

This section of the review examines available literature on the theoretical frameworks that have been used by previous researches researching on NCDs and development. The medical model has been the dominant paradigm just seeking to identify the risk factors and prevalence of various NCDs. The researches done previously do not acknowledge the influence of the environment, society and the economy on NCDs. This researcher deliberately chose not to use medical theories such as the self-care theory by Orem because focus is not on health in isolation but on health as it impacts development. Here health is being viewed as a determinant of sustainable development.

The theoretical framework adopted for this study is therefore the dependency theory. According to this theory there is a relationship between the center, developed countries, and the periphery, developing countries. The growing burden of NCDs is being accelerated by the negative effects of globalization, for example, unfair trade and irresponsible marketing, rapid and unplanned urbanization and increasingly sedentary lives. Marketing targeting women, children and adolescents promotes the consumption of junk food and alcohol. Multinational co operations are used to represent the interests of developed countries at the expense of the health of people in developing countries.

The burden of NCDs in developing countries is worsened by the negative effects of globalization like unfair trade and irresponsible marketing of finished products by the North.

The south (low income countries) depend on the North (developed countries) for information and technology as well as medication and even cheaper food stuffs. According to Beaglehole et al (2001) health policy makers and public health practitioners are being challenged to understand globalization because besides impacting on the productive sector, food and pharmaceuticals, education and environment, dependency of the North also affects education and health as well as society as a whole.

This critical assessment of dependency is as a result of uneven distribution of benefits and costs of globalization. It is easy for aggressive firms and individuals from developed countries to get the benefits of deregulation and liberalization policies since they are the ones who set the standards for success. The adjustments process is quite rigid and sectors are displaced by the stiff internal and external competition generated by opening of the economy. This has resulted in widening of income gaps between the rich and poor countries. This unevenness has “created a digital divide and other categories that rule out sectors and persons from participating and reaping the profit of globalization.

Globalization which has resulted in dependency, by less developed countries on more developed countries has impact on NCDs. Globalization results in trade liberalization integration of financial markets, increasing trade of services, globalization of knowledge and ideas through information communication technology and globalization of culture. On trade liberalization the effects of dependency are that it causes displacement of labor, unemployment lower income to other sectors, leading to reduced access to food, nutrition and health services. Thus becoming a risk closely linked to NCDs. Popkin (2001), Horton et al (2001) explain that cheap imported food entering the developing countries threatens domestic producers resulting in reduction of work forces leading to poverty.

Food consumption habits have also changed from traditional diets to fast foods which are high in salt saturated fats and trans fatty acids, with children eating corn snakes such as jiggies and biggies. Access to food is also affected as it becomes uneven as a result of the unevenness of trade liberalization. Food access is a result of the inequalities in technology. Redundant inefficient technology is dumped on developing countries for example the Chishumbanje plant.

Trade liberalization leads to entry of cheap processed food which is unhealthy, cigarettes and alcohol. Tariffs may be reduced as a result of liberalization of trade. For example reducing “tariffs on alcohol as part of WTO commitments, excluding effects of brand switching to domestically produced alcohol” this increases alcohol consumption as a result of tariff reductions. This increases risk factors associated with NCDs (Gould & Schactrer 2002). Peto et al (1994) also points out that tariff reduction in nicotine increases consumption of tobacco. Popkin et al (2001) also cites cheap imported processed food as leading to nutrition transition.

Integration of financial market has resulted in developing countries depending a lot on donors from developed countries. ESAP in Zimbabwe is a result of this dependency and it resulted in removal of subsidies on health and education. As a result health services became inaccessible to many charging high costs for medical services. On the other hand reliance on integrated financial markets makes economies, of especially, developing countries, vulnerable to fluctuations of the global markets. This may lead to inflation, reduced customer spending thus leading to nutritional deficiencies as experienced by Indonesia and in Zimbabwe in 2008 (Andersen: 2000).

Integration of financial markets may cause foreign indebtedness. As inflation rises domestic currencies deprecate and the country’s foreign debt swells measured in domestic currency.

This leads to services, health included, charging additional exchange rate alteration fees to charge the service when exchange changes (Stevens; 2011). On the other hand MNCs which advance interest of their home countries use enormous advertising budgets encourage a culture of high alcohol consumption, tobacco intake and a diet rich in fats salt and sugar. These are all risk factors for NCDs burgers, pizza, food franchises influence consumption patterns.

Dependency on medical health and nutrition information from the west may result in self-medication. Applying this information can cause harm to individuals. Information on herbal remedies for, hypertension has led to some people abandoning medication and strokes and disabilities have resulted. Information on risk factors should be interpreted with guidance of medical and health professionals.

2.11.2. Nutrition transition and dependency

Nutrition transition is a shift in physical activities and dietary patterns from a traditional diet which is high in cereal and fiber to a Western diet which is high in sugars, fat, meat and meat products. This is generally taking place in developing countries Hawkes 2006 and Popkin 2006). This phenomenon has its roots in globalization. Globalization is the “reduction of barriers of cross border movement of goods, services and capital with quicker integration of world markets and increased flow of commodities technologies, information financial capital modes of distribution marketing as well as movement of peoples and labor” Mwana (2013:15). As a result of globalization, there is a change in food production, processing, transport and marketing. This change has resulted in increased production of food and a change in the type of food being consumed. More and more food is becoming processed. The law of supply and demand states that the more the products on the market the lower the cost.

As a consequence of increased production the prices of food have lowered and consumption patterns have greatly changed.

Zimbabwe is a developing country where nutrition transition is taking place in its cities. More and more fast food outlets are opening shop. The type of food sold consists of food prepared by frying, for example fried chicken and or potatoes. Energy dense food consumption is increasing because of low cost. A study by Drewnowski et al (2005) also reveals the relationship between low prices of highly dense food stuffs and increase in their consumption. These foods are also resilient to inflations, thus obesity continues to increase among the poor. High pricing of healthy food which is less dense limits the poor to adapt to eating healthy food. This shows the link between poverty and NCDs and the need to approach this issue as a developmental concern.

There is therefore need to delink “global health spending from politics Stevens (2011: 16). This can be done by using the private sector, to manage health spending, encouraging a multisectoral approach to prevention and control, policy reform and working with those affected by NCDs. Interventions such as the nutrition policy can go a long way in reducing the prevalence of NCDs which are overwhelming the public health sector. Other measures include those that support informed choice of food and those changing the market environment. Informed choice is supported by activities such as education programs, nutrition labeling, social marketing and restrictions on commercial advertising.

There are also other measures to change the market environment such as standards to regulate nutrition content of food, taxes and subsidies on unhealthy foods or nutrients, regulation of food available in school or workplaces canteens and measures to improve healthy food availability to low income households (EATWELL PROJECT 2012). This

researcher is of the same conviction with Mwana (2013) who noted that these measures are designed for the developed world but they can be useful in developing countries. Work with industry to advocate for the reduction of carbon content of beverages and other food products with a lot of sugar and fat. Kleiman et al (2012) explained that this can be done with the companies not losing their profit.

It can therefore be noted that based on the dependency theory it is imperative to research and come up with sustainable development mechanisms to reduce the burden of NCDs. Social economic and environmental initiatives that are locally developed should be used as models for development. Partnerships for development of health initiatives should be formed so that interests are advanced in a single and unified voice.

2.12. Chapter Summary

The issue of NCDs and sustainable development is very complex and diverse in its consequences; however, most researchers or studies seem to agree that NCDs are driven by poverty and those NCDs also drive poverty and they have the potential to break or perpetuate the cycle of poverty. Sadly, though most of the consulted studies are medical studies seeking to identify risk factors and prevalence rates of NCDs only and not linking them to sustainable development. NCDs create a myriad of social problems including perpetuation of gender inequality widowhood, orphan hood and exclusion from education and health among others. A conceptual understanding of the relationship between health promotions and sustainable development were reviewed. Models on health and sustainable development were also examined. Literature reviewed has shown a lot of gaps that need to be filled through research. There is need to examine how Harare has adopted these concepts in relation to the emerging threat of NCDs.

CHAPTER 3: METHODOLOGY

3.1. Introduction

This chapter gives an explanation of the research methodology that was adopted for this study. This research is a descriptive research and it sought to document and describe how NCDs prevention and control contributes to sustainable development in Harare. For purposes of data collection qualitative research methods were used, these include in-depth interviews, focus group discussions and observations. A lucid description of how the researcher chose the sample, how data was collected and analyzed, trustworthiness of the research and the ethical considerations that the researcher considered in the research is given.

The use of the qualitative research method is premised on the need to enhance participation of people with NCDS in matters that affect their health and lives in general. Lived experiences provide first-hand information that is vital for improvement in health services outcome. Health matters are private and confidential issues, as a result of this, the researcher adopted non probability sampling and snowballing technique because it is difficult to identify people with different health conditions. The subsections under review are research design, sampling techniques, data collection methods, trustworthiness, ethical issues as well as the study limitations. This researcher chose to use qualitative methods because they are important tools it obtain insights and perspectives of study populations. These insights are important for the drafting of solutions to problems related to public health. The purpose of this research was to explore the phenomena (NCD prevention and control and sustainable development) and the objective was to describe and explain the relationship between NCD prevention and control and sustainable development and to describe the individual experiences of those

affected and infected by NCDs. This methodology is also vital because it helps in coming up with sustainable solutions to prevention and control of NCDs.

De Poy et al (1994) explain that the methodological perspective relates to the underlying logic or ways of thinking about the data: whether data are interpreted from a prior frame of understanding (i.e. deductively or inductively). In this case the researcher is working within a theory this using inductive research. Inductive research allowed this researcher to collect data from numerous sources. This also allowed the researcher to use different methods of data collection such as interviews, focus group discussions, observations and reviews of documents. For this reason Creswell (1994) explains that the ontological assumption of naturalistic research is that reality is subjective and data collection is basically through interviews and focus group discussions and observations.

The methodology allowed the researcher to gain better understanding of the participant's feelings and emotions. Using the qualitative methods the researcher gained more insight into the participants physical functioning, physical health, social functioning as well as their perceptions of the risk factors that cause or may lead to NCDs. The qualitative methodology used enables the researcher to explore and explain the phenomenon within its context with the varied sources of data. This approach is very relevant to this study as it involves in depth investigating into prevention and control strategies adapted in Harare.

The qualitative methods allowed the researcher to have an inside view of the variable under study. Instead of relying on studies done by researchers in other parts of the world the researcher got to understand the vicious cycle caused by NCDs and poverty. It became clearer for the researcher how NCDs causes poverty and how poverty causes NCDs. The interviews gave the participants a chance to identify those NCDs risk factors that perpetuate

poverty. As a result they came up with solution to some of their problems. A comprehensive understanding of the effects of NCDs on vulnerable groups such as women and children was obtained through the use of the qualitative research methods. These could have escaped the researcher had she used other methods. These details were obtained in a focus group discussion held with people with NCDs such as diabetes, cancer and hypertension.

Data analysis is going to be done through content analysis. Based on the fact that reality is subjective this researcher realized that the set of objectives could only be achieved through collecting data in interviews. The collected data included information about the information on perceptions of their situation. In describing these emotions, feelings needed to be captured. Thus the researcher adopted the qualitative research methodology. This justifies the use of qualitative methods as the methodology to be used. Thus a thematic approach was used to analyze the data. The researcher was mostly concerned with the depth of the information obtained rather than the total number of the samples taken from the population.

3.2. Research design

This research is an explorative health services research. It looked at how accesses to prevention and control of NCDs, how quality of care and cost of health care and wellbeing are affected by social micro economic and environmental factors, financing systems, organizational structures and processes and health technologies, within the city health department and other stakeholders in the field of NCDs. It focused on service delivery, management and organization of prevention and control of NCDs. This research focused on the city health department as an institution, organizations such as the cancer and diabetes association, and communities of people with NCDs.

This area of health services research according to Bowling (2002) is a space within which disciplines can meet. In this instance this research is merging health and sustainable development. According to Cartwright (1992) quoted by Bowling (2002) Health services research is responsive to current policy and political issues. This therefore means that health services are a developmental issue. Health services research on NCDs aimed to produce reliable and valid research data which can be used to base appropriate, cost effective, efficient and acceptable health services for those with NCDs.

This research sought to find information on the relationship between NCDs and sustainable development. There is not much known about this subject. Bowling (2002) explains that “if research aims to find out information on a topic about which little is known, then the qualitative methods (e.g. observational methods, in depth interviews and for focus group) may be more appropriate. The research sought to find information on a topic about which little is known so it is therefore an explorative research. It discusses and interprets findings on prevention and control of NCDs and explains how this impacts on sustainable development.

3.3. Sampling technique and sample

The reason for choosing purposive sampling was that the researcher took account of the position and experiences of respondents in prevention and control of NCDs. The sample was chosen using purpose sampling. Network and snowballing sampling were used. The first method that was used to identify the informants was network sampling. Network sampling is the use of social or other networks such as workplaces, organizations and support groups to locate and recruit participants. This method has been used before by researchers such as Smith et al (2008). In their research they recruited participants through seminars. In this research the networks that the researcher used are the support groups at the cancer association and kids can as well as the diabetes association. The work places used in this case were PSI

(new start center), ministry of health and the Harare city health department. It is important to note that network sampling was the initial point of contact with the participants

The decision to use network sampling and snowball sampling was made as a result of the realization that health matters are private matters and as a result it was difficult to identify people with NCDs. The participants that were identified through network sampling were the ones who directed the researcher to other participants; thus snowball was used. With snowball sampling the research participants are the ones who make referrals to other potential informants who in turn make referrals to others.

Prompted by the realization that finances were constrained, these non-random purposive sampling methods proved appropriate. It is however important to note that the sampling methods used might not be representative of the whole population, in numerical terms. The focus of the researcher was on representativeness in terms of the challenges faced and the health conditions that were being investigated. The sample was representative as it helped in describing explaining and understanding the population. Thus it was trustworthy.

The researcher relied on people with NCDS such as cancer, diabetes, kidney ailments and heart diseases as well as from stakeholders in the field of the health. In total 15 people with NCDS and four key informants were interviewed. Informants from the cancer and diabetes associations, the city health department and the ministry of healthy were interviewed and these were the key informants.

3.4. Data collection methods

The data collection methods that were employed by the researcher are interviews, focus group discussion and the questionnaire. Triangulation of methods was employed i.e. in methods triangulation. Interviews were carried out with all the participants and focus group

discussions were held with those with NCDs. The use of multiple data collection methods and analysis techniques enabled the researchers to triangulate data in order to strengthen the research finding and conclusion.

Informal interviews were also employed in some instance. Rubin et al (2005) explained that this type of an interview is an unplanned and unanticipated interaction between an interviewer and a respondent that occurs naturally during the course of field work. This is a very open ended form of interviewing. This type of interview allowed the researcher to be flexible thus pursuing relevant information in whatever direction that seemed appropriate.

3.4.1. In depth interview

This is a technique used to get information on the participant's perspectives on the topic under research. The person interviewed is considered the expert and the researcher the student. Here the role of the researcher is to pose questions, listen to participant's responses, and ask follow up questions and probe further based on the initial responses. The researcher did not lead participants according to her preconceived ideas. It was not the role of the researcher to prove or disapprove what the participant said. This kind of interview was conducted face to face or over the phone. Telephone interviews were done to seek further clarification on collected data.

In this research in depth interviews were done with the key informants. In this case these were officials from the ministry of health, city health department and the officials from the cancer and diabetes association. In depth interviews were also done with individual respondents who are NCD patients. In depth interviews proved particularly useful as informants would freely talk about how living with NCDs has affected their socio economic

lives. These are rather personal issues and may be difficult to elicit clear responses in group set ups.

The researcher took extensive notes. The researcher observed and documented behaviors of the participants, also taking note of the context. These notes were expanded immediately after the interviews. Interviews with participants from the ministry of health, city health department and cancer and diabetes association were carried out in their offices. These locations were selected because this is where the participants felt that their confidentiality was protected. The interviews with the other participants were carried out at their homes in the living rooms with only the researcher and the participant present.

The researcher employed the use an interview guide with a list of topics to be covered. These questions covered prevention strategies control measures, stakeholder's participation, and leadership structures, financing, availability of medicine, accessibility of care, impact of NCDs on economy, efficiency and effectiveness of prevention and control strategies, social and environmental pillars of sustainable development. Respondent offered some support documents which this researcher also re viewed. These include the national health strategy, the strategic plan for Harare 2012 to 2025 the Urban Councils Act and the Regional Town and Country Planning Act, various development plans for land that was subdivided in Harare south district and Zimbabwe demographic and heath survey. The interviews lasted between one hour and one and a half hours.

3.4.2. Focus group discussions

Focus group discussions were employed by this researcher to determine services and products that are in place for prevention and control of NCDs in order to determine gaps that exist.

This method was used to get information about the collective opinion so as to measure services that are in place to meet the needs of people with NCDs.

This method was adopted by the researcher because it is cost effective in terms of time. The focus group discussion enabled the researcher to elicit information on the challenges faced by people with NCDs in accessing health services and medication. Issues of finance and stigma were also discussed. The complete picture of how NCDs pose a challenge to sustainable development was therefore obtained using this method.

Focus group discussions are not appropriate for getting information on individual experiences and for dealing with sensitive issues. For this reason in depth interviews were carried out to compliment focus group discussions. Data collected in focus group discussions was then analyzed and put into themes which were then presented in chapter four.

3.4.3. Participant observation

Participant observation as a method enables the researcher to approach research participants in their own environments rather than have the participants come to the researcher. This allowed the researcher to have an inside view of the participant's life but at the same time remaining an outsider. Informal conversations and interactions with the community were important and were thus recorded to enable the researcher to have a wider understanding of the research topic. Mass media communications such as television and radio advertisements as well as short text message sent via cell phones were also made use of.

The major advantage of using observation was that it enabled the researcher to have deeper understanding of the physical cultural, social and economic context in which people with NCD's live. Participant observation proved invaluable as it enabled the researcher to better

understand information collected through interviews and focus group discussions. Observations were also used as the basis for designing data collection methods.

Observations are usually discredited because they are time consuming but this researcher was very focused on the research problem and is familiar with the research setting and possesses a cultural awareness of the research setting. This made this researcher better placed to concentrate on the research question itself rather than try to start by learning the cultural dynamics of Harare. Field notes of what the researcher experienced and learnt through interactions with participants and their environments were taken. These were then analyzed and placed into themes.

3.5. Trustworthiness

The findings of this study are trustworthy as the researcher used different approaches such as within method triangulation where data was collected through both formal and informal interview, focus group discussion and documentation reviews. Documentation reviews were especially employed to complement in depth interview with key informants from the city healthy and ministry of healthy.

The researcher sought informed consent and ensured that informants did not feel exploited. Thus aiming at beneficence and not harming the informants. This according to Kvale (1993) is catalytic validity of the research. The researcher gave clear description of the research procedures. A lucid description of how the sample was selected, what happened to be the sample and how the data was analyzed was given.

3.6. Limitations

The goal of the study was not to generalize information gathered but the goal was to provide thick and rich information on prevention and control of NCDs for sustainable development.

Time and financial constraints were identified as the major limiting factors. The amount of time and money required for the research was not commensurate with what could be afforded by the researcher. As a result this researcher reduced the intended geographical area to be covered. Instead of covering the whole of Harare the researcher was then limited to Harare south district. After this was done the researcher was able to complete the study with in submission time.

3.7. Data processing and analysis

In depth interview notes and focus group discussion notes were expanded by the researcher. This included additional information collected over phone. These were read many times to allow the researcher to identify patterns or categories of common themes. The second stage consisted of placing data relating to identified patterns in correspondent patterns. Step 3 consisted of examining patterns of experience conveyed. Patterns of experience were then combined into themes. These study themes are explained in the result section of the presentation

3.8. Ethical considerations

Matters of health are held in confidence by people because they are very private and confidential. As a result the researcher found it imperative to ensure that ethical considerations pertaining to consent, confidentiality, anonymity and non-harm were guaranteed to participants. Drawing from the Nuremburg code an informed consent form was drafted and this outlined the benefit and limitations of the study to the participants. The researcher outlined the time the interviews and focus group sessions would take. Participants were informed from the one set that there were no monetary benefits for participating in the study.

Anonymity and confidentiality were guaranteed and maintained throughout the research to protect the privacy of all research participants. Rubin et al (2005) argues that anonymity is maintained when the participant will continue to be anonymous throughout the research even to the researchers themselves. Participants were given codes instead of using their real names. Confidentiality was guaranteed by explaining to the participants that the information which they divulged was not going to be shared with anyone else in ways that will reveal their identities.

Forcing informants to participate in a research by exercising social dominance by the research is what is called coercion. This can be by use of language or force. The informants in this study were not coerced or forced. Participants were informed through a consent form that participation was voluntary and that they could withdraw from the study at any point if they so wished. This message was also repeated verbally by the researcher to ensure that the participants understood this fact.

3.9. Chapter Summary

The researcher adopted the qualitative research method utilizing the in-depth interviews, observations, document analysis and focus group discussions. This was adopted because the research is an explorative health research which gathers quality data if the qualitative design is adopted. The purposive sampling method was used to select the sample for the research and network sampling and snowball were employed. Methods used to collect data enabled the researcher to give textual descriptions of those living with NCDs thus gathering valuable data. Data that was obtained was placed into themes and presented as such. Issues of trustworthiness and limitations of the study were also discussed. Ethical considerations that include informed consent, anonymity and voluntary participation among others were adhered to.

CHAPTER 4: DATA PRESENTATION ANALYSIS AND DISCUSSION

4.1 Introduction

In this section key findings of the research study are discussed and are placed in the wider framework of existing knowledge. The study has shown the relationship that exists between NCD prevention and control and sustainable development. There are a number of factors that have been noted that impact negatively on prevention and control of NCDs for sustainable development. The results have been organized into themes that were identified by the researcher as data was being analyzed. The findings are placed in themes that reflect the connection between NCDs and sustainable development pillars of social economic and the environment. The study themes are centered on public health systems capacity, accessibility of treatment and care, activities to reduce progression and healthy environments. The discussion concentrated on approaches to disease control, financing of prevention and control health services management and the environment as it relates to NCDs prevention and control.

4.2. Why NCDs are on the increase

It emerged from the focus group discussion that lack of knowledge is leading people into unhealthy eating and sedentary lifestyles. More than 80% of the respondents concurred that they started to take interest in learning about nutrition and exercising after they had been diagnosed with diabetes, hypertension, or cancer. This reflects that people are not well informed on risk factors of NCDs. This is why it is difficult to control the increase in the prevalence of people with NCDs.

Another factor that was noted by all the key informants and the 15 respondents was the cost of unhealthy food. It was a unanimously agreed that food that is high in fats is cheaper to buy.

Pork for instance is way cheaper than fish which can be a more healthy option. On average the price of pork is \$3 per kilogram while fish cost about \$4-5 per kilogram. Fruits for many families are a luxury. Very few people 4 out of the 15 interviewed ate fruits every day. It emerged that fruits were taken once or twice a week by 7 of the 15 respondents.

Others reported that even though they are aware of the health benefits of eating fruits they could not afford to eat while their children did not. These findings are in line with what was outlined by Mwana (2013) and Dormon (2005) who argued that there is a relationship between increases in consumption of energy dense food stuffs and their low prices. Energy-dense grains such as maize and white rice, fats, and sweets such as biscuits represent as cheap dietary options to the consumer. Failure to afford healthy food is an indication of an economic system that cannot equitably allocate resource to its populace. A malnourished population runs the danger of having NCDs. With increasing numbers of people in need of treatment the burden on health systems will increase in turn. This negatively impacts on the public health delivery system which largely depends on a strong economic base.

Cultural factors were reported to be contributing to the increasing numbers of people with NCDs. Women were reported to be using herbs that contribute to development of cervical cancer. On the other hand negative perceptions about thinness have also led many to be overweight and or obese. Thinness is closely associated with ill health and HIV and AIDS. As a result people think it is better to be fat than to have people pointing fingers. It emerged in the focus group discussion that most women are not aware of the risk of obesity. Of the nine female respondents in the focus group discussions six expressed reservation about the use of body mass index as the basis for measuring body weight. This is despite the fact that these are people who have information on importance of maintaining good body weight. These views are supported by what was observed in the review of the demographic and

Health survey (2011) out of 1465 women consulted in Harare; overweight and obese women were 43% and those overweight were at 27.7% and obese women were 17.3%. This presents a health risk for NCDs and may pose a challenge for the sustainability of the health system.

The focus group discussion revealed that Socio-economic activities which take place outside the home influence eating of energy dense foods. Soft drinks offered by street vender and restaurants which offer fast foods both contribute to high consumption of fats and sugars. More than half of the participants in the focus group concurred that peoples attitude towards fast foods is promoted by detest of cooking and the convenience of fast food. The participants in the focus group discussion noted that fast food is being sold at every street corner. Single men and youths frequent fast-food outlets more than men who are married and the elderly. In terms of prevention and control of NCDs this finding sets a base for audiences that can be targeted with educational and social marketing messages. This in turn helps in the creation of vibrant societies that are equipped with information on how to prevent preventable infections. These result in the creation of one of the three pillars of sustainable development.

With regards to food consumption all the participants in the focus group discussion concurred that in both print and electronic media influenced in one or way or the other their food consumption patterns. It was acknowledged that the way the advertisements are presented was in such a way that one ends up feeling the urge to taste the food. Unlike with alcohol and tobacco adverts the dangers of consuming fatty foods is not given. The greatest risk was discovered to be mostly among the youths who take fast foods often. This is a result of failure by the government to put in place regulations concerning production of energy dense food. In this case it is worth to note that the effects of dependency on western values also results in adoption of western diets at the expense of traditional diets.

4.3. Accessibility of treatment

It emerged from the focus group discussion and some of the interviews that income, gender, type of occupation and level of education caused inequalities in accessing health services and in society in general. It emerged from the interviews that those who earn less did not have medical aid and women constituted the bigger chunk of those that are not gainfully employed. Of the participants in the focus group discussion 11 out of 15 were not on any medical insurance. These participants pay from out of pocket.

One participant explained how she had stroke and almost died as a result of abandoning treatment. This resulted in her being hospitalized for over two months. This meant an increased burden on the family's finances and on the health system because of the prolonged period that she spent in hospital. These findings confirm the data that was published by in the Zimbabwe demographic and health survey (2011) that over 86% of women and above 84% of men had no insurance in Harare. Therefore tackling unemployment would help to effectively prevent and control NCDs. There is need it was pointed out, to tackle poverty and prevent and control NCDs at the same time because these two are intertwined. This adds to huge macro-economic impacts on governance and capacity building

At city Health clinics health is subsidized for those with NCDs, consultation fees are paid for visits made to the clinics. Those with diabetes and hypertension, have got days set aside for them to get supplies of medication. These days vary depending on the clinic. What this means is that every three months one gets to be examined and then collect the three month's supply of medication. Cancer is not managed at local clinics but at central hospitals such as Parirenyatwa. The report from the respondent from the cancer association highlighted that treatment and care for cancer is expensive with dialysis and radiotherapy costing not less than \$300 per cycle in the private sector and \$80 per cycle at public hospitals. This has led many

people into abandoning treatment because of financial strain. This makes the service inaccessible to the poor.

Health insurance is a way of improving equity amongst social groups. This failure to pay for or to access health services affects the people's quality of life and affects the economy as more and more people will require social service assistance to pay for health services. This makes development unsustainable as more and more resources that could be preserved for future generations are consumed through social services and this contributes to an increase in poverty.

4.4. Partnerships

The researcher gathered through informal interviews that the health sector's capability and eagerness for interaction with non-health sectors and participation in relevant inter departmental bodies is not very pronounced. More synergies could be made with the planning and social service department and a lot could be achieved if other government ministries such as the ministry of youth could be engaged to address alcohol and tobacco use among the youth.

The institutional capacity to interact with other sectors (through understanding of public policies, politics, economics and human rights expertise etc.), in order to recognize inter departmental opportunities for cooperation is there; as there is a health promotions officer at each clinic. The health promotions officers are however not seeking to understand other non-health sectors and their policies, in order to establish links and possible avenues for cooperation in health delivery.

According to the key informant from the city health department the city health department does not participate in activities that are led by other departments. But it is important to note

that being an agent in other sectors' initiatives works for their benefit through reaching more people with health education. Efforts directed by the other sectors widen the coverage of health education recipients. This could help to improve relations and strengthen shared, multisectoral engagement.

The key informant from the city health department noted that there are no engagement plans that have been developed and there is no strategy in place to involve significant sectors. Most important aspects of these plans such as shared goals and targets; pooled resources; defined tasks, roles and responsibilities are missing. These plans are however important for the implementation and they help in ensuring who does what, when and how thus ensuring accountability.

There has been a common understanding of key issues by the cancer association and diabetes association and the city health department. These two organisations i.e. the cancer association and the diabetes association are helping with health promotion and screening thus complementing city health department in NCD prevention and control initiatives.

Currently there are very weak governance structures to ensure successful implementation of intersectoral action with no shared budgets between departments. It was observed that accountability is low. It is difficult to say who is in charge of NCDs programming at the health centres. The community health nurse, the health promotions officer or the sister in charge's responsibilities overlap when it comes to NCDs. Public participation level is low and not supportive of integration of health determinants across sectors.

The city's strategic plan is crafted in a way that does not reflect partnerships for health. Each departments objectives are outlined separately reflecting a task centered approach rather than a result based approach where focus must be on health for both the environment and the

human population. The city health department has two main objectives for the period 2012 to 2025 with the first objective aimed at achieving a healthy city. The first objective is to have responsive medical teams which are proactive.

The second objective is to make primary health care service available to all residence of Harare with more focus on more vulnerable groups. Each ward should have a clinic and health care campaigns with major stakeholders in all the wards are encouraged. It is however important to note that these campaigns were not given frequencies and the stakeholders to work with were not specified which therefore makes implementation very difficult. NCD health promotion initiatives contribute to achievement of this objective but all interviews confirmed that no campaign has been had in the district since formulation of the strategic plan. As a result communities continue to be unaware of the risk factors that predispose them to NCDs.

The urban planning service department on the other hand has a role to play in terms of prevention and control of NCDs. The department's strategic objectives that can help in the achievement of prevention of NCDs are the formulation of efficient mobility systems, to have safe energy sufficient and environmentally friendly city and to have a sustainable outdoor. The strategic plan explains that this is to be done through introduction of mass transit with strategic partners and decongesting the city making it conducive for free flow for human traffic.

The strategic action plans for the housing and community service department are to empower residents through setting up of work space through creation of home industries, markets and schools so that residents can earn a decent living. These also aim to avail social service facilities such as gyms and community halls for holding awareness campaigns. At the

moment Mbare and Waterfalls are the only suburbs in the district with community halls. Retreat, Hopely and Southlea Park and ushehwokunze do not have.

The researcher observed that city health strategic objectives are achieved through establishment of complete health care centers which are equipped. It is of importance to note that the aim is to eliminate HIV and TB thus not approaching health holistically. Fragmented approaches to health places extra burden on health systems. For that reason Stevens (2011) express the view that this does not result in total health of the individual. Failure to address total health of the individual leads to an increase in numbers of unhealthy people with diabetes and hypertension. Therefore addressing NCDs together with TB and HIV will help in making a sustainable health system as health is approached holistically.

There is very little being done in terms of training of non-health sector personnel on NCDs. It was observed that NGOs such as PSI through their own initiatives have included NCDs in their curriculum for wellness champions training. Trainings are done in various companies around the city. It is important to note that this endeavor is for HIV prevention but NCDs have only been included because they are closely related to HIV. Coverage has been low and most companies are not interested in trainings for their staff because PSI does the course at a fee. Companies do not yet realize the importance of these trainings and the impact they have on improving productivity. The official from the city health acknowledged the need to further educate the non-health sector.

It was highlighted that it is important to note that the way NCDs education is being presented at health centers reflects partnerships between NCDs and maternal and child health. These findings confirm the importance of partnership in HIV prevention. Alleyne (2013) expressed the same views wrote about NCDs and possible partnerships with maternal and child health.

This was in line with the global trend as highlighted in the literature review by Alleyne (2013) when he outlines that partnerships should be made with child health departments. This life course approach is believed to offer long term solutions to NCDs and their metabolic risk factors.

The level of engagement between NCDs prevention and other sectors outside health is very low. The council clinics in the district have partnered with ministry of education. School health programs where clinic personnel get into schools to monitor the children's nutrition status are held once a year. A child's weight and height is measured and used to determine the child's nutrition status. Health talks are given but they are not specific to NCDs. They cover general health, this is different from HIV and AIDS which has been placed in the national curriculum. Attending to health needs of the community starting from those in school is an example of a public health system that is vibrant, which has adopted the life course approach to prevention and cure so that future infections are prevented.

All the three key informants that the researcher interviewed concurred that, the increase in the numbers of people with NCDs and the associated disability and mortality are preventable if policies in other sectors can be influenced to consider NCDs in their design and implementation. All key informants noted that if changes are made in health alone, that will not help much in prevention and control of NCDs. All sectors outside of health such as communication, social service, environment, planning, economy, education and technology need to be engaged. At government level it was expressed by all the key informants that, an approach that encourages collaboration of all of government was the way to go. Collaboration should be people centered with involvement of community in agenda setting planning and implementation of intervention.

The researcher learnt from document reviews that the government of Zimbabwe under the ministry of health has set an NCD unit which is responsible for coordinating programming and monitoring all NCD related efforts in the country but this unit has not been decentralized to district level. In Harare the department has managed to establish a stakeholder working group. All the stakeholders involved have agreed that NCDs pose a challenge to socio-economic development efforts to reduce poverty and achieve sustainability. These stakeholders meet regularly to discuss various issues pertaining to NCDs.

Currently the stakeholders that are working in partnership with the city health are the cancer and diabetes associations, island hospice, HOSPAS association of Zimbabwe, UNICEF and PSI Zimbabwe as well as other organizations that represent other NCDs such as epilepsy foundation and eczema. These organizations each play a peculiar role in ensuring prevention and control of NCDs in Harare. The cancer association and the diabetes associations are involved in advocacy, resource mobilization and health promotion. Island hospice trains and provides community based volunteers for palliative care in the different suburbs.

On the other hand UNICEF provides different kinds of medication and PSI Zimbabwe has recently added cervical cancer screening and blood pressure monitoring in its HIV prevention programs. The concept underpinning the stakeholder forum and partnerships is to make all the other sectors realise the centrality of health in development. Kickbusch (2010) has advanced that health i.e. prevention and control of NCDs and sustainable development are at the center of sustainable development. Therefore prevention and control of NCDs and sustainable development have the same goals and for the two to be achieved joint strategy should be used.

4.5. Activities for prevention and control

The activities being done by the city of Harare to reduce progression and complication associated with NCDs were assessed through interviews, observation and reviews of important documents such as the Zimbabwe national health strategy and the strategic plan 2012 to 2025. The respondents all noted that there were a lot of activities that were being undertaken to prevent and control NCDs but the main focus was on curative health care.

The City Health official highlighted health education, behavior change communication, social marketing, advocacy and information education and communication as strategies for reducing progression of NCDs.

The activities that are being undertaken were listed as Health Promotion, treatment and care for those with NCDs. In response to the question on how the council is operating in terms of treatment and care of those that have NCDs, the informant from council responded by explaining that all those who come in need of treatment for diabetes and raised blood pressure are availed the required service for complementary fee of \$1. At that cost they have the opportunity to see a nurse and get supplies of medication that they require. The fact that patients of diabetes and hypertension come for treatment and supplies of medication indicates that the council is also engaged in secondary prevention of NCDs.

Two of the participants revealed in individual interviews that their conditions were not catered for at council clinics. One has coronary heart disease the other one has a kidney problem. Their conditions are deteriorating owing the fact that there is no adherence to treatment due to costs. The participant with kidney problem is required to go to Parirenyatwa hospital for dialysis once every week at a cost of \$80 dollars per cycle. But at times he misses treatment because of failure to pay. The other participant with coronary heart disease is getting treatment from the private sector but is now contemplating to go to the public hospital

because he can no longer afford to pay private doctors. So in terms of accessibility the cancer dialysis and coronary heart disease accessibility is limited.

Asked about those that are too sick and cannot manage to visit the clinics, the response was that there is a community nurse stationed at every clinic who liaises with community members to identify the health needs in the community. This community health nurse is the one who then directs clinic personnel i.e. nurses to those that need home based care. Home visits are made and patients can be attended to at home as required. Depending on the severity of the condition some patients are then referred to Island hospice for palliative care.

In terms of procedure it was outlined that Island Hospice, which is an organization that does palliative care for suffers of chronic diseases is given the name and address of the person requiring care. They then send the community home based care givers that have been trained to attend to the given patients. These home based care givers each keeps a register of patients under their care. This is done to avoid duplication of services and each one has an allocated case load. The city health official was quick to point out that this is done at “absolutely no cost for the patient.”

Asked about why the council together with the Island Hospice engaged services of community home based care givers instead of allowing for one to be cared for by their relatives, the respondent responded by explaining that the reason was to try and remove the burden of care on the family so that other duties could be performed without hindrance. “Think of a woman, husband or child whose husband, wife or parent is sick and they have to shoulder burden of caring for the sick and at the same time try to fend for the family and or go to school. This can be nerve wrecking”, he noted. This reflects that socially, NCDs cause social disruption and this is consistent with what was said by Kimmel (2001).

Health promotion was identified as another avenue for reducing progression and complications association with NCDs through information dissemination. Those that were interviewed from the cancer center, diabetes association and from the city health department all acknowledged the need for health promotion. The various health promotion strategies are used to help scale up and strengthen high impact interventions for prevention and control of NCDs through healthy life styles and adherence to medication.

Advocacy was highlighted as a major component of health promotion strategy in the district. The respondents from the Cancer Association and the diabetes association expressed that there are laws and policies that need to be aligned with the needs of those with NCDs. As the representative bodies of those with NCDs in Zimbabwe, they engage responsible authorities at different levels of governance to encourage policies favorable for people with NCDs. It was reported that at the moment there is a drive to advocate for a policy or plan of action for NCDs. With a clearly specified policy health service delivery improves

These two respondents from the cancer association and from the diabetes association highlighted that in terms of policy advocacy, there has been a shift from advocating for an NCD levy to inclusion of NCDs in already well-funded programmes such as HIV, Child Nutrition and maternal child health. Embedding NCDs in these already well-resourced fields will reduce the burdens of trying to find new funding for new programs, in a health delivery system that is already burdened. This notion is well in line with what came out of the literature review that NCDs prevention and control and the economy are closely interlinked. Hancock (2010) wrote that health programs needed to focus on human development with resources being distributed in a way that health for all is achieved.

The respondent from the cancer association highlighted that their advocacy work is starting to bear fruit as some organizations are starting to adopt this position. “I am happy to say that PSI is one organization which has responded well in this area. They have taken on board cervical cancer screening and blood pressure monitoring in their HIV programming and a lot of people are benefitting because this is a donor funded program and services are for free. The city health department has also introduced cervical cancer screening as a result and many women are benefitting.

Documents reviewed showed that during the parliamentary portfolio committee meeting on health the minister of health explained that as the ministry of health they were shifting from trying to put a cancer levy but to embed cancer in already existing programs and structures set up for HIV and AIDS. The adaptation of structures such as the AIDS action committees from the family level right up to the provincial level could help. This underscored the fact that HIV programmes are becoming entry points for NCDs prevention and control in the city of Harare. What these efforts have achieved is in line with what Nyamwaya (2009) explained when he wrote that advocacy should result in increased resources and political support for health services.

The starting point for advocacy work, it was highlighted was to make the public aware of the burden of the disease and how it impacts on a person’s functioning. These two respondents explained that they commemorate days set by WHO to publicize risk and effects associated with these burdens. Cancer Association has October set aside as the cancer month whilst the Diabetes Association commemorates the World Diabetes Day on 14 November every year. It was established as an official UN Day in 2007. These campaigns are held in the city center and not much is being done at district level. As a result people continue to be ignorant of those factors or habits that put their health at risk.

Asked about the exact advocacy activities that they are involved in the respondent from the Diabetes Association explained that they do radio and television coverage free screening for diabetes, distribute posters and leaflets, press, conferences, Newspaper and magazine articles and exhibitions on different platforms. These same activities are also done by the cancer association in their advocacy initiatives. All these activities are done at the macro level and not much is being done at district level. This leaves out the poor who cannot travel to attend such functions in the CBD. Exclusion from services and information predisposes people to NCD risks which eventually lead to an increase in numbers of those with NCDs.

Island Hospice which falls under the Hospice Association in the country is also involved in advocacy work. These advocate for policy review in relation to drugs i.e. medication that is taken by chronic disease patients. There are some drugs which are regarded as dangerous drugs and current regulation restricts who manages or administers these drugs. The informant was delighted to say that these organizations were able to successfully advocate for a review and now drugs like Morphine and Pathedine can be dispensed and administered by nurses with palliative care training.

Women who attend antenatal clinic and well-baby clinic also receive health education on NCDs. Family health clinics are being used as avenues for disseminating health information. According to the respondent from the City Health official, this is premised on the fact that during pregnancy women are at risk for raised blood pressure and diabetes. These are conditions which can complicate pregnancy and may result in mortality. Therefore these women and their spouses are encouraged to exercise and are taught aerobics. Each clinic has a day set aside for antenatal clinic.

Asked how health education was being conducted, the respondent explained that this was done at health center with patients that come for treatment and those that accompany them. This respondent highlighted that every morning a health talk is given on selected topics. These topics include but are not limited to NCDs risk factors such as diet, physical activity, tobacco use, adherences to medicine, importance of diet in controlling diabetes. On each and every day at all clinics, there is a nurse assigned to do this, he noted.

Concern was raised that a lot of concentration should be on prevention of new infections and improving the quality of life of those living with the chronic illness. All the research participants agreed that political commitment and participation by various communities would go a long way in improving prevention and control strategies. It was outlined that there is need to strengthen private public partnerships. It was also noted that government through local authority (city health department) should make the initiative to engage the private sector to promote healthy lifestyles.

The other method that was identified was behavior change communication. This researcher observed that organizations such as Econet have taken it upon themselves to disseminate behavior change information. Even though they target all Econet cell phone users, the message also target or reach residents of Harare south. The researcher observed that these health tips can contribute to the reduction of mortality and morbidity, therefore increasing awareness in society.

Knowledge obtained from health tips may lead to behavior change. This can also reduce the ballooning costs that are associated with treatment and care of NCDs. Reduction in treatment costs for the individual translates to savings which can be invested in other sectors such as children's education or infrastructure development. Reduced morbidity relieves the burden on

health systems, strengthening the public health capacity and enables savings which can be used by future generations thus achieving sustainable development.

This researcher observed that PSI, an organization that is into social marketing for health, has a lot of activities on HIV and AIDS and Malaria prevention and lately they have taken onboard cervical cancer screening. A lot of marketing of this product is being done in both the print and electronic media. Women are being encouraged to have cervical cancer screening. Their approach is directed at the whole country so this means that Harare is included as well. For Harare exhibitions are done at various platforms including at wellness days at different companies and various commemoration where the organization may have been invited. In this district the seventh day Adventist church is doing wellness campaigns for the prevention and control of NCDs. PSI is invited to all these gatherings to do HIV testing BP screening and to refer those that need cervical cancer screening to the nearest screening center.

With social marketing the social pillar of development is addressed through education from the marketing messages, social marketing advertisements give people information on the effects of cervical cancer. The public is educated about the rate at which women are dying as a result of cervical cancer and the economic pillar is addressed through the cost effective means in which social marketing is done i.e. one message wide audience coverage. A single advertisement aired on radio has the potential to be heard by millions of Zimbabweans.

The respondents from the cancer association and from the diabetes association explained that they are involved in information, education and communication. Pamphlets and leaflets are distributed. These are in both English and Shona. The respondent from the cancer association explained that their pamphlets and leaflets have a wide range of information on cancer. Some

are on definition of cancer, diet and facts about men's cancer. These are designed to give people knowledge about cancer and associated risk factors. This respondent explained that, "the purpose of information education and communication is to empower population and communities' with knowledge that they can use to make health related decisions"

Three organizations are engaged in screening of NCDs. The Harare city health department is involved in cervical cancer screening, testing for diabetes and blood pressure. The cancer association screens for cervical cancer, breast cancer, prostate cancer and blood pressure. The diabetes association on the other hand only tests for diabetes. It is important to also note that psi also tests for cervical cancer and blood pressure. Except for the cancer association the all the other organizations that screen for cervical cancer do so for free. At city health centers blood pressure and diabetes are tested after one pays a consultation fee.

It also emerged from some individual interviews that some of the participants are experiencing challenges as far as stopping smoking is concerned. One of the participants in his 60's has a heart condition which developed as a result of a combination of smoking and raised cholesterol. The participant is well aware of the dangers of continuing to smoke but he highlighted that the withdrawal symptoms were so severe that he would rather continue to smoke.

4.6. Healthy environments

This part of the review presents data which reflects the quality of life of the residents of Harare south district with regards to the connection between environmental factors and social factors that determine quality of life. This part concentrates on the environment and how it impacts on the society i.e. how healthy ecosystems and supportive built environments

promote healthy and vibrant societies. A vibrant and just society is assessed through an assessment of social networks available, cultural values education level and health literacy.

This researcher realized from reviewing documents such as the city of Harare's strategic plan 2012 to 2025, that the environment is viewed in isolation and not as it relates to health. The environment contributes to good health and for development to be sustainable that link between the environment and human health should be clearly specified. The emphasis that is placed on environmental health at the expense of human health is worrisome. The co-operate strategy for health is to promote safe environmental practices. But for sustainable development to be achieved human health must be the focus of all activities. As was specified by Kickbusch (2010) when he explained that in the health promotion concentric model health must be at the center of development.

According to the key informant from city council, council is mandated to ensure healthy environments by the urban councils act and the regional, town and country planning act. These acts were reviewed by this researcher and they stipulate many land uses which include commercial, housing, industrial stands, open spaces and services which are roads, electricity and telephone line spaces. Under plan number 31 of 1999 it was noted that land that is marked as residential agriculture should be 8000m² and above. The respondent from the city council explained that agriculture should be practiced within the residential stands not outside the residential stands. Where stand sizes are bigger the areas are classified as gro-residential areas and residents can do agriculture and at the same time live at same piece of land. However in most high density areas stand sizes are smaller 150 to 300 square meters in most cases. This does not allow for any agricultural activities.

Some of the farms acquired and sub divided in the area were Waterfalls and Hatfield Development Plan No. 26 with a planning area of 5013 hectares was subdivided into residential stands measuring 1000m² for medium density, 2000m² for low density and 700m² for high density. On the other hand Saturday Retreat farm Development Plan No. 50 of 2001 with a planning area of 2727 hectares was subdivided into 200m² for high density areas 500m² for medium density area 1.5 ha for residential/agricultural zone and 50 hectares for rural agriculture zone.

Low education levels on the connection between the environment and NCDs impact negatively on efforts to prevent and control NCDs. Pertaining to how this impacts on sustainable development it reduces the people's quality of life because the link that should exist between the environment and social functioning is not there. If this persists it will be difficult to achieve sustainable development in the city. FAO (2009) explained that urban agriculture has the potential to improve available food as well as creation of jobs.

Therefore in those areas it is difficult to practice urban agriculture. This therefore means that the poor cannot afford. It therefore becomes difficult for them to do any agricultural activity to supplement their diet sustain their livelihoods. Where there is food insecurity the risk of developing NCDs is also high because the risk of obesity is closely linked to food insecurity. Hearing et al (2009) and Eisenmann et al (2011) produced similar findings.

The key informant from the city council explained that the importance of urban agriculture was also underscored by the urban councils association at their 21st annual conferences. Conference delegates agreed that urban agriculture played a major role in reducing poverty, enhancing food availability and food security and employment creation and thus enhancing economic development. It is however important to note that this has not yet been

implemented even though the city fathers realize the importance, rather they are acquiring farms that are close to the city for residential purposes as outlined above.

There has not been any agricultural intensification in Harare but deforestation has been hugely a result of urban expansion. This compromises the ecosystem and in turn affects sustainability of the environment. Climate change as a result of greenhouse gases may threaten the environmental sustainability. Farms such as Hopely, and retreat farm in Harare south district have been converted from highly productive agricultural farms to purely residential, where urban agriculture is practiced illegally. As a result majority of people who live, in the high density areas practice urban agriculture only in the rainy season but occasionally during rainy seasons council officials destroy crops planted on undesignated areas. There was concern raised by participants in the focus group discussion about the continued destruction of crops by the council.

When asked about this the key informant from the city council explained that at the moment there is no agreement between the city health department and the planning department on how to deal with urban agriculture. There are no plans for urban agriculture because in Zimbabwe agriculture is not given priority in urban areas. But after the city fathers realized the importance of agriculture for urban dwellers there was huge agreement by the city fathers that urban agriculture can play a great role in improving and sustaining livelihoods of people in the urban area. As a result the Harare Combination Master Plan for intensification of agriculture was put forward in 1992.

The use of wood as a source of cooking fuel is very common in areas such as Hopely, Southlea Park, retreat where there is no electricity. The researcher observed that even though most of the cooking is done outdoors the level of air pollution especially during times for

cooking evening meals is high. Asked to respond to what the council is doing in terms of reduction of pollution the respondent only said that the council was working closely with EMA to educate people but nothing had yet been done. No campaigns have been done at district level.

The same respondent was however quick to point out that electricity distribution was not within their jurisdiction. Hence it was an avenue for collaboration to reduce risk of NCDs. Pollution from cooking puts women and children at risk of respiratory complications later in life. An unhealthy environment is a result of failure by responsible authorities to prioritize electrification for new residential areas. This increases risk of respiratory diseases and as such there is great need to attend to this problem with urgency.

In trying to assess how knowledgeable focus group participants were, on the benefits of urban agriculture and how it could help them as people with NCDs. The respondents were quite knowledgeable of most of the benefits. The immediate benefits that they identified were, an improvement in diet and availability of fresh fruits and vegetables and physical exercise. Other benefits such as clean air from reduced carbon were not immediately identified. The level of knowledge of people on how climate change impacts on food production and nutrition is very low.

Nearly 87% (13 out of 15) of the respondents in the focus group discussion did not have a clue on what climate change is. On assessing the level of education of those that did not have a clue of what sustainable development is, it emerged that they had not gone beyond form 2. Confirming that level of education determines how well people make use of their natural environment. This confirms Hancorck's (2005) assertion that there is a direct relationship between level of education and how people interact and make use of the environment.

The key informant from the city councils health department outlined that land uses vary as stipulated by the Regional Town and Planning Act. There is provision for open spaces in both residential and industrial areas. Previously, he noted, the open spaces were left for recreation parks in both low and high density areas. However due to the increase in demand for residential stands fewer spaces are being left. As a result there are no spaces left for recreational parks. This is in direct contravention of the Environmental Management Act Chapter 20:27 which promote environmental health and encourages planners to leave open spaces in residential areas to allow the environment to breath.

All the 9 participants that engage in agricultural production during the rainy season continued to grow maize which is not very drought resistant and thus they get low yields in times of low rainfall. Maize is energy dense. This negatively impacts on the family's food nutrition and food security. Nutrition is closely linked with prevention of NCDs, therefore if people are well nourished biomedical risk factors such as obesity hypertension and undesired lipid profiles are reduced.

Harare city fathers realized the effects of climate change as indicated in the city's strategic plan 2012 to 2025. The council realizes the impact that this phenomena has on social economic and environmental problems. But the greater part of the focus in the strategic plan is climate change as it impacts on the environment and not on human health. Here focus is on urban management planning and vehicle emissions and land use controls to prevent people from risk of flooding and landslides. Rather focus should be on climate change as it impacts human health because development is dependent on health. This is in line with the theory that was advanced by Kickbusch (2010) when he explains that health promotion should be placed at the center and care of any development model.

The quality of life of the residence of Harare south district is generally below standard with most of the residence living below the poverty datum line, without electricity and living in areas where there is either no electricity at all or where power cuts are the order of the day. From an environmental perspective this presents a health challenge. Urban planners have put more emphasis on urban expansion at the expense of the people's health. The research shows that people are not even aware of the effects of this expansion which does not leave room for open space for green areas.

Raphael (2004) and Baum (2008) express the sentiments that creating sustainable environment for health through ensuring natural and built environment, social and economic environments encourage people to lead healthy lives. This is also true for the area that was under research. At the moment there is need to create environments that are healthy pockets of land are not being left open to allow for creation of green belts that allow the environment to "breathe and so reduce carbon content in the air".

Lack of health knowledge about the interplay between conditions of living and health exposes people to NCDs risk factors such as pollution from cooking using wood. Low levels of knowledge on how the community interacts with the environment. There is no knowledge that elevated carbon and pollution contributes to heating the environment, which contributes to climate change which then affects food production causing food insecurity and malnutrition and eventually NCDs.

Knowledge on the importance of planting small grains which are more resistant to drought is very little; this lack of knowledge contributes to food security thus affecting family nutrition. In urban environments there is a challenge of heat because the sun's energy is not used by

vegetation and trees. Vegetation and trees are cut down to pave way for urbanization (Harms 1994) but direct sunlight can cause cancer of the skin.

Urban green agriculture reduces food insecurity thus ensuring nutrition. Haering et al (2009) are of the conviction that urban agriculture could reduce food insecurity which will result in less people being overweight or obese. The benefit of urban agriculture was documented by Altieri et al (2012) when he wrote about the successes of city of Havana on the United States of America. As far as the built environment is concerned there is need to factor in recreational parks, sidewalks and ensure that these places are safe for adults, children to relax and play.

4.7. Public health capacity

Results reviewed in this section are those that reflect existence or nonexistence of a strong public health capacity. Data presented here reflect the connection between social factors and economic factors that are at play in the district. Social networks, cultural values, education and literacy are examined in relation to economic factors such as the districts preparedness and response to NCDs, reduced impact of disease and reduction of pressure on the health care system.

The exact number of deaths attributed to NCDs is not clear for the district. There is no district register for deaths. But the city health officials interviewed expressed concern that morbidity, disability and premature death as a result of NCDs was on the increase. The city health department gave a report which is quite consistent with what was reported by Palipudi et al (2012). The respondent explained that the incidence of hypertension and diabetes was on the increase among the poor communities in Harare. At Hopley Clinic on the outskirts of Harare South District the prevalence of people who have raised blood pressure is so high with over

70% of those screened for blood pressure having raised blood pressure of a systolic of above 160 and a diastolic of above 120. This reflects moderate to severe blood pressure.

The official from the cancer association also expressed concern that the numbers of people that were coming to seek help from their organization was on the increase. He was not sure of the percentage increase from the previous year. He however explained that these increases exerted pressure on health system, thus making treatment difficult to sustain. This means that the numbers of people requiring medication to control hypertension is on the increase this puts more pressure on financial requirements for the management of the condition. This finding is consistent with Narayan (2000) who expressed the view that increases in disease triggered downward mobility in health delivery.

It emerged that concentrating on communicable diseases and maternal and child health was costing the health sector. The respondents all seemed to note that while it was noble to fight these communicable diseases leaving out NCDs would mean that efforts at reducing sickness would be in vein and the burden on health systems will continue to increase. This shows how NDC contribute to increased burden on the health sectors.

It was also noted that people need be empowered to contribute to initiatives for the prevention and control of NCDs. Empowerment comes through possession of information and assets to health such as medical aid and employment. Home industries are being developed in other parts of the city and not much is being done in Harare south. There have not been any home industries constructed for residents of Harare south. The only market / home industry in the area is Siyaso and Mbare Musika but market stalls have been occupied by residents of other suburbs. This has incapacitated the residents of Harare South to access health thus requiring more from social services department which is already failing to cater

for those on the needs list. It also emerged from the interviews and the focus group discussion held that poverty was the main cause and result of failure to prevent NCDs.

The local authority representative acknowledged that it is the duty of the city health department to ensure that finance and services are provided to enable prevention and control of NCDs. But there are financial challenges that the city health department is facing that make it difficult to provide such finance and or services. The same challenges and more were identified by the cancer association and the diabetes association. These challenges include lack of financial resources, the market forces that are driving NDCs such as the emergence of fast food out let all over the city and the increasing numbers of registered companies that manufacture sweetened beverages, a weak Multisectoral response, under resourced health systems especially those directly managed by the state and failure to address the social determinants of health. This reflects that the department is ill equipped to deal with NCDs in the district.

Gathered data has shown that from resource allocation point of view prevention and control activities are marginalized. Very little is being allocated for NCDs. Government does not fund non-government entities that operate in the field of NCDs. This means that government is not funding all the activities that are not initiated by the ministry of health. It emerged that the diabetes and cancer association as well as all other organizations that deal with various NCDs do not get grants from the government. This failure to get grants has hugely limited education initiatives for NCD risk factors yet, education and finance have been viewed as prerequisites for creation of a strong public health system.

It also emerged that because there are no funds there are very few volunteers that work with the cancer and diabetes associations. The funding for NCDs unlike that of HIV, TB and

Malaria is very limited. This in turn constricts the amount and quality of work done to prevent behavior associated with major risk. As a result of financial challenges the cancer association for example, has had a very high staff turnover. This limits the organization's service delivery capacity.

A volunteer community health worker whom the researcher managed to talk to in an informal interview also expressed concern that they face challenges with procurement of consumables that they use with palliative care clients. These volunteers are either cancer survivors or relatives of those that have cancer and are on palliative care. Unavailability of these essential consumables has been discovered to be the reason why some people have stopped volunteering. This further reduces the organization's capacity to deliver services to cancer patients.

Despite these challenges the key respondents outlined that palliative care has been scoring a lot of success in terms of enabling care givers to attend to other business and for children to go to school while the patients are being cared for by home based care givers. This partnership with Island Hospice to cater for palliative care patients has resulted in reduction of the impact of the disease on the families, thus improving equity as opportunities for employment and education are not lost.

Services for cancer and dialysis are centralized and for patients to travel from their places of residence to the medical centers can be a challenge. People need transport fares and food to eat while they wait to be attended. Due to failure to raise transports fees some patients especially cancer patients end up not receiving required screening or treatment. Many do not attempt to seek assistance from the government department of social welfare because The

assisted medical treatment orders (AMTOs) are usually not accepted by the central hospitals. This means that the numbers of those that are morbid will continue to increase.

It also emerged that as a result of disease progression the burden on the family will increase. In the case of a breadwinner they may end up unable to work thus reducing the income in the family. Three of the participants are no longer employed as a result of sickness. Based on this it can be observed that NCDs progression is perpetuated by lack of a strong financial base and as a result of the effects of the NCDs on a person's productivity poverty is perpetuated. Same findings have been put forward by Gelders et al (2006) and Cameron et al (2009) when they researched about cost of treatment in relation to income.

With new innovations in diagnosis of cancer demand for finance also increases. In 2013 the Harare city health department engaged on an expanded role out of cervical cancer screening using visual inspection with acetic acid and a cervicography. This procedure the respondent noted needs digital cameras and computers. Therefore demand for financial input increased. It has not been possible for the city health department to decentralize this service to all clinics in the district because of failure to procure the required equipment for all the health centers that they manage. On the other hand a separate budget for training of staff is required. So only a few nurses and doctors have been trained to perform the procedures. Out of the 6 clinics in the district only 1 is offering the service.

Financial requirements were also noted by the cancer and diabetes association, as posing a challenge to procurement of equipment. The cancer association of Zimbabwe is also screening for cervical cancer. Above screening for cancer of the cervix the cancer association also tests for prostate cancer and breast cancer. These are all areas that need to be adequately financed. The numbers of people that are served at the end are very minimal an average of 10

to 15 per day because the organization cannot afford to employ more nurses. This limits people's access to health services.

Advocacy work requires staff to be mobile. The diabetes association together with the cancer association noted that it is a challenge for them to procure vehicles. The fact that the staff complements are small has also made it difficult for them to cover all the invitations for wellness campaigns that they get from different companies. This means that a lot of people will not be reached with information on NCDs and continue to engage in NCD risky behavior increasing their risk of getting infected by NCDs. An increase in people requiring treatment and care results in an increase on the burden on health system that is already overburdened and underfinanced. This reverses the goals of development.

Health promotion requires information education and communication materials to be produced in huge quantities. The diabetes association and the cancer association have had problems producing these materials. These organizations depend mostly on donations if donations do not come through services may be suspended. Information education and communication materials need to be complemented by health expositions so that questions and misconceptions may be addressed. No such expositions have been held in the district.

In response to the question on effectiveness of interventions, the key informants from the cancer association outlined that it varied on what aspect of the program is being looked at. Generally advocacy work has been successful, but the respondents from the diabetes and cancer association outlined that they have not managed to reach all intended populations owing to financial and policy constraints. The youth in high school have not been reached because of protocol required to get access to children during school hours. According to the model presented by Kjergard (2013) this implies that the public health system is

compromised and with a compromised public health system, the youth are ill prepared to deal with or avoid NCD risk factors because they do not possess or have access to the health information. Consequently they are prone to engaging in risk behavior that predisposes them to NCDs thus putting a strain on the economy in future.

The fact that NCDs prevention and control is underfunded is also evidenced by the report from the focus group discussion where a participant underscored that the waiting period at Parirenyatwa Hospital's radiotherapy centre is very long. This is because the demand for the service is increasing and the centre is failing to cope, some patients are deteriorating or even die before they get either to be screened or treated. These same views were expressed by the key informant from the city health department who expressed that failure by the responsible authority to establish other screening centers is largely due to lack of finance.

Deterioration results in patients needing palliative care and expensive drugs for pain management. With adequate funding this can be prevented and a great deal of savings can be made. This can result in funding being directed to other non health sector priorities for development. The assisted medical treatment orders (AMTOS) that are given by social services department are being turned down by central hospitals such as Parirenyatwa and Harare hospital. Even if one has an AMTO they are not receiving the required service, patients are still required to pay cash.

It was reported that the long waiting periods have prompted some patients to seek services in the private sector where treatment costs are very high. In some cases cows or other properties are sold for one to get treated in the private sector. Because of the prolonged periods of chronic care family lifestyles change. It was reported that some ended up dying with no treatment because of failure to pay the associated costs. Long waiting periods and denial of

the AMTOs are a reflection that the health delivery system is incapacitated to deal with the increasing numbers of those with NCDs. This finding is consistent with Mahal et al (2010) and Krut et al (2009) who revealed that in the world's poorest countries families affected by NCDs borrow or sell assets to pay for health.

The fact that many patients are dying without being screened or getting adequate treatment as was generally agreed in the focus group discussion reflects that widows and orphans are on the increase. These require social services for health and education. If this continues unabated further burden is thrust on social services department and supporting these may be difficult to sustain. In this respect failure to adequately finance procurement of diagnostics equipment for NCDs has resulted in perpetuation of poverty in the household.

The respondent responded to the question on how increasing demand for palliative care affects development by explaining how families lose sustenance in cases of prolonged sickness. This view was expressed by the respondent from the cancer Association who also aired out the sentiment that cancer is a very impoverishing sickness as it drains finances to treatment and care at the expense of other facets of development. It puts more burden on the health system as the cost of care is high as illness is prolonged. This is consistent with findings by American cancer association (2012) that increased burden of NCDs makes health delivery unsustainable. This means that the economic pillar of sustainable development will have been weakened and this makes it difficult for sustainable development to be achieved.

It is, however, important to note that the same respondent also outlined that palliative care has been scoring a lot of success in terms of enabling care givers to attend to other business and for children to go to school while the patients are being cared for by home based care givers. This partnership by Island Hospice to cater for palliative care patients has resulted in

reduction of the impact of the disease on the families. Family members who act as care givers for terminally ill relatives now have the opportunity to attend to other business due to assistance by these care givers. This thus improving equity as opportunities for employment in education for women and girls are not completely lost.

Tertiary prevention is offered by the cancer association which does counseling and Island Hospice which also offers counseling and palliative care. It is not worth noting “that secondary and tertiary prevention are difficult to sustain as they need to have a stable financial base”. This was expressed by the representative from cancer association. It therefore becomes evident that preventive primary prevention is the most sustainable option for NCDs prevention as it is less costly in terms of finance and not costly on the social fabric of the community.

The report by the city health official that women who attend antenatal clinic get health education on NCDs is evidence to show that the council is adopting a life course approach where the unborn child is protected in uterus. When women go for well-baby clinic they are also offered information on health and on NCDs and their risk factors. This education covers nutrition and balanced diet for children and whole families. This is consistent with what was expressed by Aboderin (2001) who has discovered that the life course approach places emphasis on interaction and impact of social and biological factors mostly during early life predisposes people to NCDs later in life. This approach helps children to secure growth and development. This thus reduces the burden of sickness in future.

On the other hand the city health official had a different response in terms of effectiveness of activities for prevention of NCDs; his response was that the program has not been very effective because of the curative approach that is being adapted by the city health department.

“More and more people are coming and being diagnosed with diabetes or hypertension. This means that our people are not aware that these illnesses are caused by a person’s lifestyle”. This response meant that the burden of diabetes and hypertension is on the increase in city health clinics and this is exerting pressure on the health system that is already overburden by HIV, TB, and Maternal and child health. Increasing numbers of morbidity exerts more pressure on the health system and health delivery quality is reduced. This view has also been expressed in previous presentation by the NCD Alliance (2010) when they discuss the effects of NCDs on health systems. This therefore means that if prevalence of those with NCDs increases economic prosperity is reversed and sustainability will not be achieved.

4.8. Approach to Prevention and Control of NCD

The study discovered that prevention and control of NCDs does not have a policy and therefore at district stage there are no plans for action that have been formulated for prevention and control of NCDs. as a result prevention and control just becomes mere talk with not much being done to reduce the risk factors. Activities for NCDs prevention are embedded in other programs and no emphasis is being placed on associated risk factors. Most of the activities at these health centers are on the well-funded disease such as HIV and tuberculosis.

The service delivery i.e. NCD prevention and control is not very efficient. The approach that is being used is such that clients need to present to the clinic with problems then they get education on risk factors and healthy living. This approach places a burden on the health system. Rather than treat already infected patients, it is more cost effective to prevent therefore there is need to put in place efforts to reach those sectors of the population that do not have access to information on NCDs such as the youth out of school.

Cases that present at the health center with signs and symptoms of NCDs are the ones that get the attention required. Health information is only given to those that visit the clinic for different reasons and health talks are only done in the morning. Those patients that come late in the day will not have the opportunity to get the health education. Baum et al (2008) argues that this curative approach to disease is what dominates poor countries. This biomedical imagination which is based on western values is the basis for the preferences of curative approach over prevention of disease.

The fact that there is a separate entity for environmental management, i.e. EMA which is not under direct control of the city fathers presents a problem for environmental policy implementation. Environmental management patterns are determined by market individualism. The city planning department could be treating environmental management as a preserve of their department rather than an obligation to provide and ensure environments that promote good health for the human population and not just environmental health.

4.9. Financing of Prevention and Control

It has also been discovered that this area of health is very much underfunded. Prevention and control activities for NCDs are not utilized very much. In the city health department there is no funding that is specifically directed for prevention of NCDs or awareness campaigns. Even in the not for profit organization, funding is very limited and this affects efforts to increase people reached with educational information for reduction of risk or maintaining a healthy lifestyle while living with NCDs. NCD programs are executed within other programs like maternal and child health, HIV or school nutrition programs. All this comes back to the fact that NCDs prevention comes second to treatment/ lessons that should have been drawn from HIV are not being considered. HIV and AIDS had the same challenge after there was a

shift from prevention to treatment Stevens (2011). With increasing numbers of people with NCDs the burden on treatment will become unsustainable.

The living conditions of people in the newly established suburbs of Harare South district leaves a lot to be desired. The roads are not tarred and the level of dust in those areas is high. There is no electricity in most of the suburbs. There is therefore need to improve the living conditions in these areas through investment in infrastructure development. The report by the world commission on social determinants of health has also expressed the importance financing infrastructure development in order to improve living conditions of residents.

Community health care committees are very poorly resourced, as a result funding is needed for them to be able to perform their mandate adequately. Nyamhanga et al (2014) expresses the view that these groups could put funds together for purposes of funding prevention programs. But for them to do this they need to be trained to raise funds. The city health department in partnership with non-health sectors could fund these trainings.

It also emerged that the city health department does not have personnel especially trained to deal with NCDs, except for those that have been trained for cervical cancer screening. For diabetes they use the digital test which does not require any special training. More still needs to be done to capacitate health personnel to better deal with NCD cases. Laboratory scientists need to be increased and trained to carry out tests such as histology tests for cancer patients.

Patients that have heart diseases and elevated blood pressure problems are referred to central hospitals such as Parirenyatwa or Harare central hospital. Patients are referred to central hospitals based on severity of presenting symptoms and or results of tests. Those with severely high / raised blood pressure are referred to central hospitals for further management.

The same also applies to diabetes. Some patients may fail to continue with screening or treatment as they cannot afford the costs of transport and treatment at the referral centers.

The infrastructure available at the local clinics is not in good condition. Most of the equipment is in bad condition. Blood pressure testing equipment is functional and the digital machines are also available for quick testing. This concern was raised by the minister of health when he officially introduced the health services board on 9 August 2014 (the chronicle).

4.10. Health Service Management

The study results indicate that in terms of governance, the structures that are in place if well utilized, can achieve the desired goal of prevention and control of NCDs. The existing structures are comprised of people who lead community based programmes. Park Hurst (2004) made a comparison of Uganda and South Africa political environments of HIV. Accessibility equity and a public health capacity are criteria for evaluating governance in health. This study has shown that levels of accessibility hugely depended on which NCD one suffers from, for those with cancer, accessibility is very low. The issue of equity has been addressed through subsidizing education and consultation fees for those with diabetes and hypertension. Provision of palliative care is also an effort to reduce inequalities with regards to medication.

NCDs prevention and control is managed from top down, even at the local level. Research has shown that initiatives that flow from the bottom to the top are more sustainable than those that are top down. There is very little involvement or inclusion of communities in planning for prevention and control campaigns. Health committees have been minimized to become

mobilizes of people for events. All activities are organized by the health promotions officer who also gets directives from the district office.

4.11. Chapter Summary

This chapter has presented data that was obtained during the field study. The data was analyzed under five broad themes. Data was grouped to concentrate on themes centered on accessibility of services, partnerships for health, activities for disease prevention, health and the environment, public health capacity, the approach to disease control, health services management and financing.

CHAPTER 5 SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter gives the summary, conclusions and recommendations for the study. The summary will cover the whole presentation from the purpose of the study methodology adopted data collection and analysis as well as the results of the study. The researcher's concluding remarks will be given at the end and the last part will outline some recommendations suggested by the researcher. The recommendations are directed at different audiences such as the city health officials and other non-health sector personnel.

5.2 Summary

This study sought to explore the phenomenon of prevention and control of NCDs for sustainable development in Harare. The research questions that the researcher sought to answer included questions to do with why NCDs are on the increase, what factors are influencing the increase in NCDs prevalence, how non health sectors are being engaged in prevention and control of NCDs and how environmental health is related to NCDs prevention and control.

The qualitative methodology was adopted and the methods that were used for data collection are in-depth interviews, observations, and the focus group discussion. For sampling the researcher used purposive sampling and the methods adopted were network sampling, which was used as the entry point to the first participants. After having been introduced to participants through network sampling the researcher then progressed to use snowball method to recruit other study participants. Collected data was analyzed and placed into categories and was then presented and discussed.

There are many factors that are leading to an increase in numbers of people with NCDs. These include failure to afford healthy food on the market, cultural factors, market forces (with energy saturated food stuffs on the market), affordability and lack of knowledge on the NCDs risk factors. The other factors are increase in numbers of people who smoke and the increased rates of alcohol consumption, low knowledge levels of risk factors as well as living in dusty areas where there is use of wood as a source of energy relationship between the environment and NCDs. As a result there is need to increase awareness through health promotion at community level and to advocate for legislation that controls availability of alcohol tobacco and energy saturated food production and marketing.

The study revealed that there is a reciprocal relationship between NCDs prevention and control, and sustainable development. Poverty perpetuates an increase in numbers of those with NCDs and NCDs on the other hand can also lead to poverty. It also emerged that most patients with NCDs are not on medical aid and medical expenses are paid from out of pocket. For diabetes and hypertension patients accessibility is better compared to the other NCDs such as cancer and heart diseases.

It emerged that NCD patients who suffer from hypertension and diabetes have more access to medication and health care services compared to their cancer counterparts. This fact is attributed to the fact that hypertension and diabetes drugs are subsidized, costing \$1 for a supply of 3 months. At each visit patients have an opportunity to be examined by a nurse. However it also emerged that there is only one medical doctor in the whole district. Cancer treatment is expensive with dialysis costing at least \$300.00 per cycle in the private sector clinics. These services are only available at the central hospital where they also cost around \$80 per cycle. As a result some patients especially those with cancer, heart diseases and kidney problems end up failing to access health services due to escalated costs. Therefore

there is great need to come up with plans for poverty reduction in order to tackle NCDs successfully.

This study showed that the approach to disease control currently being applied in the city of Harare is a curative approach and curative approaches have low success rate in disease mitigation as they focus on the individual rather than the whole population. The curative approach places more burdens on the health system as response is directed at treatment instead of prevention. The cost of treating new cases coupled with already existing ones becomes economically unsustainable. If properly implemented through concentrating on prevention health capacity in the district will improve. NCDs prevention and control should result in people or communities becoming more knowledgeable about NCD risk factors thus reducing rate of new cases of NCDs.

It also emerged that there are very few partnerships for health at local level. There are opportunities for synergies between NCDs prevention and control and other sectors which are not within the health sector. Current levels of partnerships are not very strong. Within the city council there are no strong inter departmental partnerships for the prevention of NCDs. No youth organizations are involved in prevention and control activities yet the youth are the county's future. The only organizations that are working in partnership with the city health are PSI, the cancer and diabetes associations and Island Hospice. The point at which all sectors from the economy, social and environment meet is the point where sustainability is realized.

Advocacy, information education and communication, and social marketing are the health promotion strategies that are being employed currently. Two organizations cancer and diabetes associations are doing advocacy in the district. Information education and

communication is the most widely employed strategy. Pamphlets and leaflets are available at all health centers. More still needs to be done in terms of social work as only PSI is marketing cervical cancer screening. It is important to note that all these efforts are heavily underfunded thus reducing coverage.

Environmentally healthy environments are characterized both by a built environment that is supportive of health and ecosystems that are healthy. Built environment in the new suburbs of Hopely, Southlea Park and Retreat Farm have no open spaces which are safe for people to exercise. Prohibition of urban agriculture by the city fathers is impacting negatively on nutrition for some households and opportunities for reducing climate change through urban green environments are lost.

The introduction of palliative care has helped to reduce burden of care on families of those that are terminally ill. In cases where the family's bread winner gets sick opportunities for employment and education are reduced or missed. However island hospice has been active and is helping with palliative care for the terminally sick. This reduces the effects of NCDs on the social fabric.

There is no health policy or a strategic framework that has been designed for NCDs within the city of Harare. This makes it difficult for those on the ground to implement the programs there are no plans of action to address risk factors prevalent in the district. The lack of policy and lack of action plans needs to be addressed as it enables structured and smooth implementation.

Financial constraints were identified as the major challenge to efforts directed at prevention and control of NCDs. All NCDs related activities are underfunded. Funding also needs to be injected for infrastructure development and procurement of equipment. Community health

committees fail to perform their mandate owing to lack of financial resources. The researcher came up with a number of recommendations in relation to financing partnerships and rules and regulations that should be put in place to ensure sustainable development through prevention and control of NCDs in Harare.

It was identified that implementation is from top down. There is very little involvement of communities in planning for wellness campaigns. All the activities are organized by the health promotions officer. This makes it difficult for the people to participate and take ownership of the challenges posed by NCDs to sustainable development. There is need to meaning fully involved the community for community health development to be achieved.

5.3. Conclusion

Most of the results obtained reflect a similar picture/pattern to what was discovered by researchers in other parts of the world. NCDs continue to pose a major challenge to sustainable development in Harare south district. This is largely owing to the fact that the prevention and control efforts are not being coordinated efficiently. They are top down with no meaningful involvement of the non-health sector and the community. There are no adequate financial resources that are coming for prevention and control of NCDs. Treatment and care for those living with cancer and those that have heart or kidney conditions remains out of reach for many. They end up failing to access the much needed health services.

The major challenge that is hampering prevention and control initiatives is finance. There is no funding for health promotion activities such as advocacy, IEC materials production and for procurement of equipment and training. The government, private sector, the council and the donor community itself is not injecting enough for prevention and control and as a result the department has been imbedded in other already existing health programs that are well

funded such as HIV, maternal and child health. As a result less concentration is given to NCDs and thus people are not getting enough information on the risk factors.

Social, environmental and financial challenges are all contributing to increasing numbers of NCD patients in the city. Failure to equitably distribute resources and to come up with environmental policies that consider human health is contributing immensely to the increase in NCDs prevalence in Harare. EMA has failed to implement section 20:27 of the EMA act to control activities of the city's planning department. There is need to control issuing of stands in places that have been designated as an open space to allow green belts so the environment can breathe and reduce/ pollution. On the social front even though the researcher realized the need to come up with a plan to have more people on health insurance there is need to realize that there are some sections of the community that can afford to pay for their health costs or are on medical aid.

Achievement of MDGs is closely connected to prevention and control of NCDs. If NCDs are prevented children can be sent to school and women may not loose opportunities for employment, child and maternal health improves and generally poverty is reduced, thus MDGs can be attained. As a result there is need to plan and finance implementation of NCD prevention and control activities in the district. If this is done MGDs can be achieved and development becomes sustainable.

This study has demonstrated that despite the council's failure to provide accessible health services to most patients that have cancer, kidney problems and heart diseases. there are a few in the district that can afford to access these services owing to the fact that they are either on medical aid or have sources of income that enable them to pay cash for these services.

This reflects the need for a health insurance plan for all to reduce need to pay cash up front for medical expenses.

This research was particularly important as it identified target groups for health promotion activities and messages in the district. Single men and the youth need to be targeted as they are the ones that are exposed to the risk factors associated with NCDs more than the elderly citizens. Alcohol consumption and smoking is high amongst the youth than among the elderly.

5.4 Recommendations

Based on the above conclusions the researcher came up recommendations for Harare city health department, the government and for the non-health sector stakeholder.

Recommendations for Harare city health department

- Adopt a health in all policies approach. Here one general strategy integrates a methodical consideration of health concerns into all other sectors' regular policy processes to promote better quality of life of the citizens.
- Participate in activities led by other departments
- Improve on partnerships i.e. inter departmental partnerships within the council, especially between planning and social services and also with other non-health sector organizations.
- Adopt a health promotion approach rather than a curative approach to disease control
- Increase health promotion activities through public and professional information and education
- Formulate engagement plans and strategies to involve other sectors.
- Strengthen governance structures for implementation.
- Increase public participation to promote accountability.
- Monitor the implementation of regulations put in place by government.

Recommendations for Government

- Introduce an action plan to reduce harmful use of alcohol.
- Formulate clear policy aimed at reducing tobacco use in public.
- Formulate policy or a plan of action to reduce entry of unhealthy food on the market.
- Develop a standard operating procedure for the management of major NCDs through primary health care.
- Put in place a surveillance and monitoring system to enable reporting of NCD targets. This will enable future planning for resource allocation.
- Controlling prices of food grain, skimmed and low fat milk, vegetables and potatoes;
- Increasing the prices for sugar, butter and margarine
- Put in place regulations to encourage provision of healthy foods by retailers, vendors and institutions such as schools.
- Food processing and labelling regulation

Recommendations for Non-health stakeholders

- Capacitate health care committee to mobilize funds for NCDs programming within the district.
- Encourage formation of co-operatives to form nutrition gardens to help manage environment and at the same time improve on nutrition requirement (food access and food security).
- Encourage community members to start community health savings club, in order to save for health costs.

Appendix 1

Interview schedule for individual participants

SECTION A: PERSONAL INFORMATION

Age

Sex

Educational level

Primary	
Secondary	
Tertiary	
Dropout	

Quality of life

- What condition do you have
- Are you on any treatment
- How have you been feeling since you started treatment
- Is there anything you could not do or perform before you started on treatment
- How supportive has your family, community been with support did you get
- What were the major challenges that you faced with your treatment schedule
- What factors would you attribute to your success or failure to cope with your condition
- Has the knowledge that you have a condition that will require you to take medication for life affecter the way you perceive yourself or the world around you.
- What major challenges have you faced either regard to accessibility of treatment and care
- Type of energy used for cooking and lighting

Obesogenic Environment

- Factors that influence the food choices you make
- Availability of the food on the market , cost of food income which I can afford
- Managing a healthy life
- Safety of your working environment in terms of pollution.

Structural Environments

- Exercise
- Frequency of exercise
- Facilities in your area? if they charge how much, do you afford that
- Are there any recreational parks, sidewalks
- Urban agriculture
- Energy used and perceived risks

Appendix 2

Key Informant Interview Guide

- Organisation's profile
- Activities for prevention and control they engage in
- Staffing and technical expertise of people involved
- Infrastructure available
- Any SOPs for service delivery
- Partnerships that are in place
- Standard on how care should be provided?
- How effective is the service delivery system i.e intended benefits achieved under the usual conditions of care.
- How issues of equity and accessibility being addresses- i.e provision and availability of service to everyone likely to need the service. Information on risk factors – reach of service or product.
- Efficiency of service – great benefit for the least cost.
- Financing to get required inputs for service delivery.

Appendix 3

Focus group discussion guide

- Knowledge of risk factors
- Accessibility of services: level of use by the different peoples Patient professional contacts and their type
- Home visits for those with NCDs
- Frequency of collection of medicine visit ideal what can be improved.
- Challenges faced
- globalization and Implications for health

Appendix 4

Consent

Dear Participant

Thank you for volunteering in this study.

The purpose of the study is to explore and understand how NCDS prevention and control impacts on sustainable development in Harare. Your response is solicited because you are living with one of the conditions which fall in the category of NCDs.

The information that you share will be kept in confidentiality, so whatever you say will not be shared with others. Your identity will remain anonymous there will be no mentioning of names or other personal details. The results the study can be shared with you if you so desire. You are also free to withdraw from the study at any time during the research.

The interview entails conducting face-to-face interviews observations and a focus group discussion. You are requested to respond to interview questions as truthfully as you can. The interviewer will write some notes with your permission and the notebooks will be securely stored and disposed of after all the data has been captured.

If there is need to contact me on matters concerning this research my contact details are as follows; 0772996578 or email me at ndanazimash@yahoo.com.

Thank You

Ndanatsiwa Zuze

INFORMED CONSENT FORM

Dear Participant

You are kindly requested to read this letter of consent so that you make an informed choice to participate in the study.

Purpose of the study

The purpose of this study is to explore and understand how NCDS prevention and control impacts on sustainable development in Harare.

Methodology

The study is an exploratory health services research. The study adopts a qualitative methodology. Data will be collected from adults aged 25 years and above and stakeholders involved NCDS prevention and control activities. I request to have face-to-face interview with you. Data will be recorded in a notebook.

Research Ethics

You are required to read the following information carefully so that you can make informed decision about your participation.

Conditions for participation

- Participation in this study is voluntary and should be done out your freewill. You are free to withhold any information that you decide not to share with the researcher or withdraw from an interview at any point if you feel like doing so for whatever reasons.

Protection accorded to participants

- Confidentiality: all information you supply during the research will be held in confidence.
- Anonymity: your individual identity will be revealed in any reports from this study.
- All notes, transcripts and summons will be given codes separate from your name. Codes will be used.

Risks and discomforts

- There are no foreseeable risks or discomforts involved in participating in this study.

Benefits and compensations

- There are no direct benefits to you or any other individual participants. The anticipated benefits are a better understanding of the psychosocial effects of artisanal mining on children.

Informed consent

This is to confirm that I am 25 year of age or above. I have voluntarily agreed to participate in the research study being carried out by Ndanatsiwa Zuze.

I have been told and I understand the purpose of the study. I have also been told and I understand that I may elect to withdraw from the study at any point if I so wish and without any penalties.

I have read and understood the client consent statement.

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