

**REDUCTION OF NON-COMMUNICABLE DISEASES WILL BE FAST IF THE RISK  
FACTORS ARE CONTROLLED**

**BY**

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## **DEDICATION**

This work is dedicated to the Almighty God and my parents for their steadfast support during the project.

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## ABSTRACT

Non-communicable diseases (NCDs) have claimed more lives than others diseases combined with mortality rate in the millions yearly. Contrary to popular opinion, available data demonstrate that nearly 80% of NCD deaths occur in low- and middle-income countries. Despite their rapid growth and inequitable distribution, much of the human and social impact caused each year by NCD-related deaths could be averted through well-understood, cost-effective and feasible interventions. Of the 57 million deaths that occurred globally in 2008, 36 million – almost two thirds – were due to NCDs, comprising mainly cardiovascular diseases, cancers, diabetes and chronic lung diseases. The combined burden of these diseases is rising fastest among lower-income countries, populations and communities, where they impose large, avoidable costs in human, social and economic terms. About one fourth of global NCD-related deaths take place before the age of 60. NCDs are caused, to a large extent, by four behavioral risk factors that are pervasive aspects of economic transition, rapid urbanization and 21st-century lifestyles: tobacco use, unhealthy diet, insufficient physical activity and the harmful use of alcohol. The greatest effects of these risk factors fall increasingly on low- and middle-income countries, and on poorer people within all countries, mirroring the underlying socioeconomic determinants. Among these populations, a vicious cycle may ensue: poverty exposes people to behavioral risk factors for NCDs and, in turn, the resulting NCDs may become an important driver to the downward spiral that leads families towards poverty. As a result, unless the NCD epidemic is aggressively confronted in the most heavily affected countries and communities, the mounting impact of NCDs will continue and the global goal of reducing poverty will be undermined.

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## CHAPTER ONE

### 1.1 INTRODUCTION

A Non-Communicable disease (NCD) is a non-infectious disease and non-transmissible medical condition that gradually develops from mild to severe or acute to chronic state or death. Globally known NCD includes: Alzheimer's disease, stroke, cataracts, heart diseases etc. majority of these disease go under the heading "chronic disease" i.e. the arthritis, asthma, diabetes and viral diseases. The distinguishable factor of NCDs is by their non-infectious cause, not necessarily by their duration. There is need for care management/prevention measures as majority of them are referred to as "lifestyle" disease. Greater number of death in relation to diseases globally is as a result of NCD.

### 1.2 WHAT ARE NCDs?

They are associated with economic development and were so-called a "diseases of the rich", but wealthy and poor countries alike face a growing incidence of non communicable disease. There are about four main NCDs. They are; CVS diseases, cancers, chronic respiratory diseases and diabetes. The common causes include tobacco use (smoking), alcohol abuse, poor diets (high consumption of sugar, salt, saturated fats and Trans fatty acids) and physical inactivity. Currently, NCD kills 36 million people in a year, a number that by some estimates is expected to rise by 17-24% within the next decade. New WHO report: deaths from non-communicable diseases are on the rise, with developing world hit hardest.

### 1.3 RISK FACTORS OF NCD's

The risk factors of NCD's are numerous and are interlinked at different rate /stages in their manifestations; some are controlled to manage one or two NCD's. The major known risk factors of NCD's includes: poor diets, physical inactivity, alcohol consumption, obesity, tobacco consumption, while others may include High BP and elevated blood glucose and cholesterol levels, sunlight, pollution, and lifestyle choices, even spontaneous genetic mutation.

### 1.4 NCDs IN MODERN SOCIETY

NCD's are currently the leading causes of death globally, mostly in women. In recent times, it has been attributed to the manufactured goods, ready to consume goods that stops people from acquiring natural requirements or ingredients that the body needs on daily basis. NCD's has manifested in various forms and the returns are youth and workers on the go that can not afford traditional meal. Recreational activities are also to blame as people are continuously looking for something new and trendy to try out. As NCD does not manifest immediately leads to manifested diseases in the future of the individual. NCD's is more rampant now in the modern society to the modern way of life.

## CHAPTER TWO

### 2.1 CAUSES OF NCDS

The causes of NCD's varies from environmental-related factors to spontaneous genetic mutation and even lifestyles but the resulting diseases are numerous with hazardous effects of their factors also their metabolic and physiological conditions mediate their effects and have been established in prospective cohort studies and randomized trials. This knowledge, together with data from risk factor surveillance, has helped to establish the mortality and disease burden attributable to risk factors globally and by region and country. There is less information on risk factor trends, which makes it difficult to assess how they have affected population in the past or how they may do so in the future.

### 2.2 POOR DIETS

Malnutrition caused by too little food, poor eating, the wrong kinds of food (example scurvy from lack of vitamin c and even the food and beverage industry directly and significantly contributes to diet related chronic illness. There is an association of specific foods and nutrients or overall dietary patterns with cancers, CVS diseases and diabetes and with an intermediate outcome such as weight gain, High BP and insulin resistance and hyperglycemia.

Although dietary patterns are shaped by cultural, environmental, technological, and economic factors, they can also be modified through mechanisms that range from broad food and agricultural policies to targeted pricing and regulatory interventions related to specific harmful or beneficial dietary components.

### 2.3 PHYSICAL INACTIVITY

Physical inactivity at work-absenteeism or absence from work because of illness and productivity lost from staff coming to work and performing below normal standards. Physical activity at work, walking, and, in some populations, bicycling used to be major contributors to total energy expenditure but have declined dramatically in industrial and urban societies. Physical dormancy contributes to NCDs. The limited available global data nonetheless show low levels of activity and long periods in sedentary conditions in high income and urbanized countries and higher activity levels in rural populations that engage in agricultural activity and walk or bicycle long distances for daily activities.

### 2.4 OTHER RISK FACTORS

#### 2.4.1 SMOKING

From a public health perspective, smoking is currently the most policy-responsive behavioral risk factor, with major successes in tobacco control in a number of high and middle- income countries but with a shifting burden to low- and middle-income nations. The hazardous effects of smoking on mortality from cancers, diabetes, and tuberculosis, cardiovascular and respiratory

diseases have been known for decades. Moreover, exposure of women, children and non-pregnant adults to second hand smoke at home and in public places is associated with adverse outcomes, childhood respiratory diseases and many of the same diseases associated with active smoking.

#### 2.4.2 ALCOHOL CONSUMPTION

It is associated with numerous diseases and injuries. Moderate alcohol consumption has been inversely associated with risk of CVS diseases and diabetes, although the benefits may be greater for persons with existing CVS risk factors than for those without such risk factors.

#### 2.4.3 EXCESS WEIGHT AND OBESITY

There is a measure of adiposity and excess body weight with increased total mortality and increased risks of diseases or death from diabetes, ischemic disease and ischemic stroke, cancers, chronic kidney disease and osteoarthritis and atherosclerosis.

#### 2.4.4 SPONTANEOUS AND INHERITED GENETIC MUTATION

These are error in genetic information through spontaneous errors or mutations to the genome example Down syndrome, cystic fibrosis, chimerism or heterochromia or inherited genetic errors from patients such as dominant or recessive genetic diseases.



## CHAPTER THREE

### 3.1 CHALLENGES

In combating NCDs, a lot of challenges are hindering the progress of successful NCD eradication. Challenges are encountered in different areas and sectors. They include; awareness, education of the masses, sponsorship by private and government, research facilities, availability of drugs and help to those that need immediately, time frame to embark on finding a reasonable solution.

### 3.2 MEASURES TO ELIMINATE THE RISKS

It has been estimated that if the primary risk factors were eliminated, 80% of the cases of heart disease, stroke and type 2 diabetes and 40% of cancers could be prevented. Efforts focused on better diet and increased physical activities have been shown to control the prevalence of NCDs.

-Reducing the levels of salt in foods, limiting inappropriate marketing of unhealthy foods and non-alcoholic beverages to children, imposing controls on harmful alcohol use, raising taxes on tobacco, and curbing legislation to curb smoking in public places.

-Leading health organizations and experts from around the world in order to fight against diseases such as cancer, cardiovascular diseases, and diabetes.

NCD/disease national plans for all:

- a tobacco free world
- improved lifestyles
- strengthened health systems
- global access to affordable and good quality medicines and technologies
- human rights for people with NCDs

### 3.4 EDUCATING THE PUBLIC ON NCDs

Patient education, understanding, and participation is vital for the eradication of NCDs. Public health safeguards must increase the availability of affordable healthy choices and discourage consumption of unhealthy foods. Government could use economic tools such as subsidies to counter the marketing of cheaper processed goods.

## CHAPTER FOUR

### 4.1 CONCLUSION

The major Avenue for the reduction of NCDs will come from a population-wide intervention, such as in tobacco, physical activity and alcohol control measures and salt reduction. Inadequate political commitment, insufficient engagement of non-health sectors, lack of resources, vested interests of critical constituencies, and limited engagement of key stakeholders has greatly affected implementation of effective of control of NCDs in modern society. Improved health care, early detection, the education of the masses and timely treatment will effectively reduce the impact of NCDs.

## REFERENCE

- Abegunde D, Stanicole A. (2006) *An estimation of the economic impact of chronic non-communicable diseases in selected countries (Working Paper)*. Geneva, World Health Organization.
- Abegunde DO, Stanciole AE. (2008). The economic impact of chronic diseases: how do households respond to shocks? Evidence from Russia. *Social Science and Medicine*, **66**(11):2296–3307.
- Alwan A *et al.* (2010) Monitoring and surveillance of chronic non-communicable diseases: progress and capacity in high-burden countries. *The Lancet*, **376**:1861–1868.
- Bagnardi V *et al.* (2008). Does drinking pattern modify the effect of alcohol on the risk of coronary heart disease? Evidence from a meta-analysis. *Journal of Epidemiology Community Health*, **62**:615–619.
- Bazzano LA, Serdula MK, Liu S. (2003). Dietary intake of fruits and vegetables and risk of cardiovascular disease. *Current Atherosclerosis Reports*, **5**:492–499.
- Bradshaw, S., Steyn, K. (2001). *Poverty and chronic diseases in South Africa*. Cape Town, Medical Research Council of South Africa and WHO.
- Brown, I.J. *et al.* (2009). Salt intakes around the world: implications for public health. *International Journal of Epidemiology*, **38**:791–813.
- Corrao, G. *et al.* (2004). A meta-analysis of alcohol consumption and the risk of 15 diseases. *Preventive Medicine*, **38**:613–619.
- Efroymson, D. *et al.* (2001). Hungry for tobacco: an analysis of the economic impact of tobacco consumption on the poor in Bangladesh. *Tobacco Control*, **10**:212–217.

- Gelders, S. *et al.* (2006). *Price, availability and affordability. An international comparison of chronic disease medicines*. Cairo, World Health Organization Regional Office for the Eastern Mediterranean.
- Global recommendations on physical activity for health*. Geneva, World Health Organization, 2010.
- Global status report on alcohol and health*. Geneva, World Health Organization, 2011.
- Karki Y., Pant, K.D., Pande, B.R. (2003). *A study on the economics of tobacco in Nepal*. Washington, DC, The World Bank.
- Kruk, M.E., Goldmann, E., Galea, S. (2009). Borrowing and selling to pay for health care in low- and middle-income countries. *Health Affairs*, **28**:1056–1066.
- Levitan, B. *et al.* (2004) Is non-diabetic hyperglycaemia a risk factor for cardiovascular disease? A meta-analysis of prospective studies. *Archives of Internal Medicine*, **164**:2147–2155.
- Line, H. *et al.* (2007). Tobacco smoke, indoor air pollution and tuberculosis: a systematic review and metaanalysis. *PLoS Medicine*, 4:e20.
- Mattias Oberg *et al.* (2011). Worldwide burden of disease from exposure to second-hand smoke: a retrospective analysis of data from 192 countries. *The Lancet*, **377**:139-146.
- McMurray, R.G. *et al.* (2000) The influence of physical activity, socioeconomic status, and ethnicity on the weight status of adolescents. *Obesity Research*, **8**:130–139.
- Monteiro, C., Conde, W., Popkin, B. (2007). Income-specific trends in obesity in Brazil: 1975-2003. *American Journal of Public Health*, **97**: 1808–1812.
- Mukamal, K.J *et al.* (2010). Alcohol consumption and cardiovascular mortality among US adults, 1987 to 2020. *Journal of the American College of Cardiology*, **55**:1328–1335.

- Obesity: third report of session 2003–2004. Volume 1: Report, together with formal minutes.*  
London, House of Commons, 2004. (Document HC 23-1).
- Parkin, D.M. (2006). The global health burden of infection-associated cancers in the year 2002. *International Journal of Cancer*; **118**:3030–3044.
- Popkin, B.M. *et al.* (2006) Measuring the full economic costs of diet, physical activity and obesity-related chronic diseases. *Obesity Reviews*, **7**:271–293.
- Qun, W., Dobson, A.J. (1992). Cigarette smoking and sick leave in an industrial population in Shanghai, China. *International Journal of Epidemiology*, **21**:293–297.
- Rani, M. *et al.* (2003). Tobacco use in India: prevalence and predictors of smoking and chewing in a national cross sectional household survey. *Tobacco Control*, **12**:E4.
- Rehm J *et al.* (2010) .The relation between different dimensions of alcohol consumption and burden of disease: an overview. *Addiction*, **105**:817–843.
- Resnikoff S *et al.* (2004). Global data on visual impairment in the year 2002. *Bulletin of the World Health Organization*, **82**:844.
- Roerecke, M., Rehm, J. (2010). Irregular heavy drinking occasions and risk of ischemic heart disease: a systematic review and meta-analysis. *American Journal of Epidemiology*, **171**:633–644.
- Ronksley, P.E. *et al.* (2011). Association of alcohol consumption with selected cardiovascular disease outcomes: a systematic review and meta-analysis. *British Medical Journal*, **342**:d671.
- Shafey O *et al.* (2009). *The tobacco atlas*, 3rd ed. Atlanta, GA, American Cancer Society.
- Sobal, J., Stunkard, A.J. (1989). Socioeconomic status and obesity: a review of the literature. *Psychological Bulletin*, **105**:260–275.

- Suhrcke, M. *et al.* (2007). *Economic consequences of non-communicable diseases and injuries in the Russian Federation*. Geneva. World Health Organization.
- Sundquist, J., Johansson, S.E. (1998). The influence of socio economic status, ethnicity and lifestyle on body mass index in a longitudinal study. *International Journal of Epidemiology*, **27**:57–63.
- Tsai, S. *et al.* (2005). Workplace smoking related absenteeism and productivity costs in Taiwan. *Tobacco Control*, **14**:i33–37.
- Van, Lenthe F.J. *et al.* (2004). Investigating explanations of socio-economic inequalities in health: the Dutch GLOBE study. *European Journal of Public Health*, **14**:63–70.
- Vorster, H.H. (2002). The emergence of cardiovascular disease during urbanization of Africans. *Public Health Nutrition*; **5**(1A):239–243.
- Wang, Y. (2001). Cross-national comparison of childhood obesity: the epidemic and the relationship between obesity and socioeconomic status. *International Journal of Epidemiology*, **30**:1129–1136.
- Woodward, A., Laugesen, M. (2001). How many deaths are caused by second-hand cigarette smoke? *Tobacco Control*, **10**:383–388.
- Xu, K. *et al.* (2007). Protecting households from catastrophic health spending. *Health Affairs*, **26**:972–983.