

AN OVERVIEW OF EPIDEMIC NON-COMMUNICABLE DISEASES & CARDIO VASCULAR DISEASES

Mrs. K. V. Sona (Ph.D. Research Scholar) & Dr. V. Vaithianathan (Assistant Professor)

Department of Economics, Periyar University, Salem-11

ABSTRACT

'Health is an asset to every person'. Health is at the heart of the 2030 sustainable development agenda. Promoting health is; therefore, central to delivering on the SDGs. Non-communicable diseases (NCDs) are long-term and chronic conditions that rob affected people of many productive years of their life, eventually resulting in debilitation and death in most cases. NCD & CVD is the leading cause of premature death in Worldwide & India also. Of the 56.4 million global deaths in 2015, 39.5 million, or 70%, were due to NCDs. NCDs have potentially serious socioeconomic consequences, through increasing individual and household impoverishment and hindering social and economic development. The main purpose of this paper is to analyse the increasing burden of NCDs & CVDs in present era & evaluate the preventing measures taken by the government. Health systems need to be further strengthened to deliver an effective, realistic and affordable package of interventions and services for people with NCDs & CVDs. Otherwise the most of the people's productive life affected by NCDs. So the government should take an initiative steps to tackle the problem.

Key Words: Sustainable Development Goals, Non-communicable diseases, Cardio Vascular Diseases, premature death, Health systems

Introduction

'Health for All' is a cherished goal of all governments the world over. Good health is an essential pre-requisite which contributes significantly both to the improvement in labour productivity and human resource development. It also makes an important contribution to economic progress, as healthy populations live longer, are more productive, and save more.

A disease is a particular abnormal condition, a disorder of a structure or function, affects a part or all of an organism. A Non-communicable disease (NCD) is a medical condition or disease that is non-transmissible. NCDs or chronic diseases are those diseases that progress slowly and afflict the patient for a long duration. The four most common NCDs are Cardiovascular diseases (heart disease and stroke), Cancers (malignant tumours), Chronic respiratory diseases (chronic obstructive pulmonary disease and asthma) and Diabetes.

Statement of the Problem

The increase in chronic NCD cases is a global problem on many levels, and we can only expect higher than the death rate caused by NCDs& CVDs. With more and more people getting affected, our global productivity is also getting hit. In spite of competent medical care, people affected by NCDs suffer the loss of valuable healthy years of their lives. Treatment cost is almost double for NCDs as compared to other conditions and illnesses. Burden of NCDs and resultant mortality is expected to increase unless massive efforts are made to prevent and control NCDs and their risk factors. CVDs affect many people in middle age, very often severely limiting the income and savings of affected individuals and their families. Lost earnings and out of pocket health care payments undermine the socioeconomic development of communities and nations.

Objectives

- To examine the status and burdens of NCDs in Worldwide & India also.
- To analyse the causes of death, by NCDs & CVDs
- To study on risk factors and prevention of NCDs.

Research Methodology: The study is based on secondary data collected from various reports and statistics.

Review of Literature

Aminde et.al (2018) mentioned CVD is the leading cause of deaths globally, with greatest premature mortality in the low- and middle-income countries (LMIC). They reported full economic evaluations of individual and population-based interventions, for primary and secondary prevention of CVD among adults in LMIC.

Gika (2017) noted CVD is the leading cause of non-communicable morbidity and mortality among developed and developing countries. To alleviate the crisis' adverse effects it is important

to maintain access to good-quality healthcare, improve prevention strategies and control of risk factors at individual and population level.

Prabhakaran (2016) identified that the CVDs have now become the leading cause of mortality in India, often impacting the most productive years of an individual's life. The epidemiological transition plays out differently in different regions of India because of varied economic development. The rising CVD burden and the damaging consequences it has on individuals, families, and populations require urgent attention.

Srivastava (2011) revealed NCDs and injuries account for 52% of deaths in India. Burden of NCDs and resultant mortality is expected to increase unless massive efforts are made to prevent and control NCDs and their risk factors.

NCD and CVD in the World Scenario

NCDs such as cardiovascular diseases (CVD) are now the major cause of death and disability worldwide, according to World Health Organisation (WHO). An estimated 17 million people died from CVD in 2005, representing 30% of all global deaths. Of these deaths, 7.2 million were due to heart attacks and 5.7 million due to stroke. About 80% of these deaths occurred in low- and middle income countries. If current trends are allowed to continue, by 2030 an estimated 23.6 million people will die from cardiovascular disease (mainly from heart attacks and strokes).

According to the Global Status Report, NCDs would claim nearly 52 million lives globally by the year 2030. In European Region, almost 77 percent of the disease burden is due to five major NCDs: diabetes, CVD, cancer, chronic respiratory diseases and mental disorders (WHO). As per the WHO, NCDs or chronic diseases, such as cancer, heart ailments, respiratory diseases and diabetes, kill 38 million people globally every year. WHO report said nearly half of the deaths due to NCDs occur in the 30 to 70 year's age group. Some of the targets include 30 percent relative reduction in mean population intake of salt, a 30 percent relative reduction in prevalence of current tobacco use in those aged more than 15 years and a 25 percent relative reduction in the prevalence of raised blood pressure.

Table 1: Cause of death, by NCDs & CVDs

(in thousands)

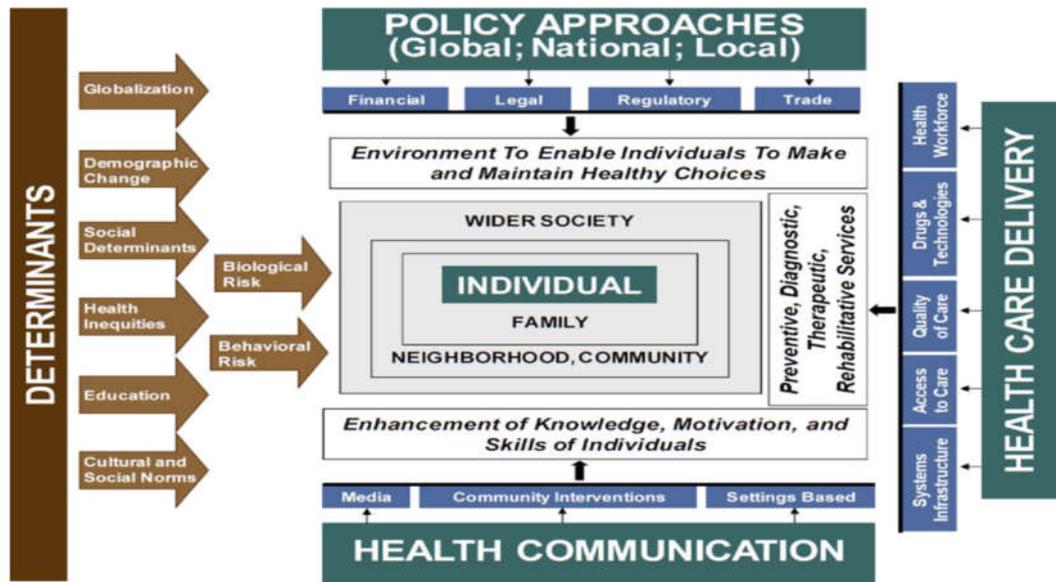
Years	NCD	CVD	Percent Share of CVD in NCD
2000	31391125	14424607	45.95

2005	33606210	15388435	45.79
2010	36405327	16623701	45.66
2015	39544157	17689163	44.73

Source: www.who.int

This table explores that the Causes of death, by NCDs & CVDs. NCDs death rate 31391125 to 39544157 increased by 2000 to 2015 periods. CVD caused death rate also increased by 14424607 to 17689163 during 2000. During 2000 to 2015 periods 8153032 were died in NCDs and 3264556 were died with CVDs. And this difference shows that the out of NCDs 40.04 percent deaths due to CVDs. The percent share of CVDs in NCDs shows that the out of NCDs about 46 percent death caused CVDs. The overall table shows that the NCD & CVD are the leading causes of death in worldwide & India also. So the Government takes precautions to tackle this problem & controls this problem.

Figure 1: Intersectoral Approach to Control Global Cardiovascular Disease



Multifactorial determinants of global CVD and 3 domains of intersectoral intervention.

Figure from *Promoting Cardiovascular Health in the Developing World: A Critical Challenge to Achieve Global Health* by the National Academy of Sciences and used with permission, courtesy of the National Academies Press, Washington, DC.

CVD in India

CVD is the leading cause of premature death in India. In India, NCDs are estimated to have accounted for 60 percent of all deaths in 2014, while 26 percent between the ages of 30-70 years had a probability of succumbing to the four diseases. The report highlights the need to act immediately. It said that all governments must commit and set national NCD targets this year and implement policy and cost-effective interventions for prevention and control of major NCDs. As CVD occur at the most productive years of an individual in India, the country is bound to sustain an economic slowdown. Studies said, death due to CVD in persons in the age group of 35-64 is highest in India.

Apart from health burden to the individual, CVD also poses economic burden on the State. On one hand there is the prohibitive cost of treating a large population with Hypertension, Diabetes, and CVDs besides burdening the health system of the State. On the other, since such diseases occur in adults during their most productive years, there is an indirect economic loss to the exchequer. A WHO study puts the loss to the national income due to CVD at USD 237 billion by 2015.

CVD: India's burden

- Roughly 40,000,000 deaths occur per year due to CVD.
- Expected to increase up to 30-40 per cent in the coming years.

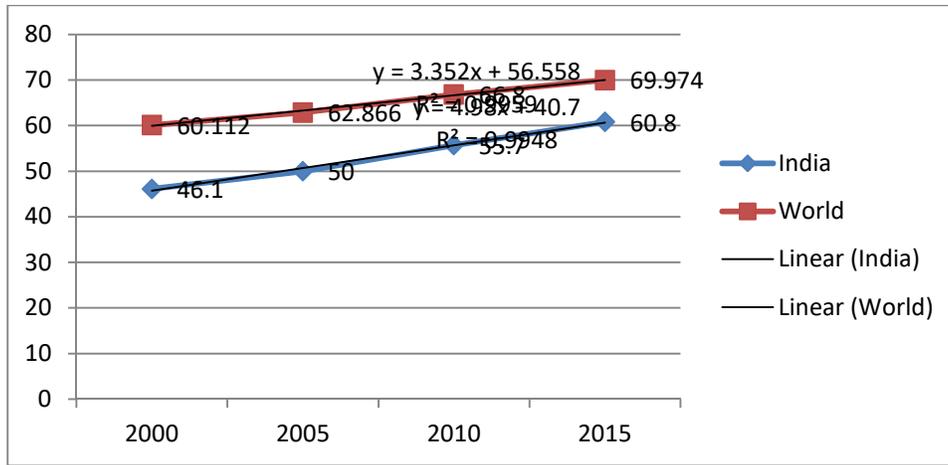
By 2025, India will have the highest incidence of diabetes and heart diseases in the world and CVD will be the leading cause of death and disability in India.

Table 2: Causes of death, by NCDs (% of total)

Years	India	World
2000	46.1	60.11
2005	50	62.87
2010	55.7	66.8
2015	60.8	69.97

Source: W.H.O: Global Statistical Report

Figure 1: Cause of death, by NCDs (% of total)



The above figure shows that there is an increasing trend in NCDs -world wise & India also. In 2000 60.112% peoples are died by NCDs & year by year indicated an increasing trend, during 2015 this leads to 69.974.

Table 3: Causes of CVD Estimated for the Global Burden of Disease.

CVD-Diseases	2000	Percent	2005	Percent	2010	Percent	2015	Percent
Rheumatic heart disease	298,111	2.07	287,797	1.87	298,483	1.79	305,272	1.73
Hypertensive heart disease	657,946	4.56	684,074	4.45	826,010	4.97	942,138	5.33
Ischaemic heart disease	6,882,843	47.72	7,516,064	48.84	8,223,632	49.47	8,756,006	49.45
Stroke	5,406,516	37.48	5,661,289	36.79	5,930,388	35.67	6,240,611	35.28
Cardiomyopathy, myocarditis, endocarditis	332,639	2.31	386,123	2.51	403,945	2.43	413,324	2.34
Other circulatory diseases	846,553	5.87	853,089	5.54	941,243	5.66	1,031,811	5.83
Total	14,424,607	100	15,388,435	100	16,623,701	100	17,689,163	100

Source:www.who.nit

The above table shows the trend of CVD caused deaths and its related diseases. During 2000, out of CVD **47.72 percent** due to Ischaemic heart disease & **37.48 percent** due to Stroke. In 2015, Ischaemic heart disease and stroke increased **47.72 percent to 49.45percent** and stroke 49.45 to **35.28 had depicted** respectively. And Rheumatic heart disease was the least caused death of CVDs 2.07percent to 1.73 percent. This table indicated that the Ischaemic heart diseases, Stroke are the main reasons for increasing CVD deaths. The other CVDs were also caused deaths marginally.

Risk Factors of NCDs

NCDs are caused, to a large extent, by four behavioural 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.

Four main shared risk factors—tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol—are the most important in the sphere of NCDs. Exposure to environmental and occupational hazards, such as indoor and outdoor air pollution, with fumes from solid fuels, ozone, airborne dust and allergens may cause chronic respiratory disease and some air pollution sources including fumes from solid fuels may cause lung cancer, indoor and outdoor air pollution, heat waves and chronic stress related to work and unemployment are also associated with cardiovascular diseases. Exposure to carcinogens such as asbestos, diesel exhaust gases and ionizing and ultraviolet radiation in the living and working environment can increase the risk of cancer. Similarly, indiscriminate use of agrochemicals in agriculture and discharge of toxic products from unregulated chemical industries may cause cancer and other NCDs such as kidney disease. These exposures have their greatest potential to influence NCDs early in life, and thus special attention must be paid to preventing exposure during pregnancy and childhood.

The Power of Prevention

Prevention encompasses **health promotion** activities that encourage healthy living and limit the initial onset of NCDs. Prevention also embraces **early detection efforts**, such as screening at-risk populations, as well as strategies for appropriate **management** of existing

diseases and related complications. The following examples show what targeted investments in prevention can achieve.

- The health benefits of quitting smoking are numerous, and many are experienced rapidly.
- Lifestyle changes in diet and exercise, including a 5%–7% maintained weight loss and at least 150 minutes per week in physical activity, can prevent or delay the onset of type 2 diabetes for Americans at high risk for the disease.
- An adult with healthy blood pressure and healthy blood cholesterol levels has a greatly reduced risk for cardiovascular disease.
- Instilling healthy behaviors and practices during youth, particularly in school settings, is far more cost-effective than waiting until unhealthy behaviors are entrenched.
- Community water fluoridation results in fewer cavities among community members.
- Regular screening for colorectal cancer can reduce the number of people who die from this disease.
- For women aged 40 years or older, mammograms every 12–33 months significantly reduce mortality from breast cancer. For women who have been sexually active and have a cervix, screening with a Pap test reduces incidence of and mortality from, cervical cancer. Females aged 11–26 years can help prevent cervical, vaginal, and vulvar cancers by getting the HPV vaccine.
- Improved glycemic control benefits people with either type 1 or type 2 diabetes can reduce the risk of micro vascular complications (eye, kidney, and nerve diseases) by 40%.
- Early diagnosis and appropriate management of arthritis, including self-management activities, can help people with arthritis decrease pain, improve function, and stay productive.

Conclusion

In summary, effectively preventing and controlling NCDs requires engaging actors and partners from various sectors who hold different agendas and reach different populations and communities. Four main shared risk factors—tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol—are the most important in the sphere of NCDs. Four types of NCDs—cardiovascular diseases, cancer, chronic respiratory diseases and diabetes make the largest contribution to morbidity and mortality due to NCDs. All four of these diseases are projected to continue to increase in prevalence in the near future. India is experiencing a rapid health transition with the problem of both malnutrition and over nutrition. India must orient the health

system towards prevention, screening, early intervention and new treatment modalities with the aim to reduce the burden of NCD disease. Surveillance of NCDs and their risk factors should also become an integral function of health systems. Keeping in view that chronic diseases have an impact on the health and productivity of the people, these measures are essential for the health of India as well as its economic progress.

References:

- Aminde, Leopold Ndemnge, Noah Fongwen Takah, Belen Zapata-Diomed, and J. Lennert Veerman., **"Primary and secondary prevention interventions for CVD in low-income and middle-income countries: a systematic review of economic evaluations."** *Cost Effectiveness and Resource Allocation* 16, no. 1 (2018): 22.
- Gikas, Aristofanis. **"Cardiovascular diseases in times of economic crisis: New challenges for medical and community research."** *Journal of Cardiovascular Medicine and Therapeutics* 1, no. 1 (2017).
- Prabhakaran, Dorairaj, Panniyammakal Jeemon, and Ambuj Roy. **"Cardiovascular diseases in India: current epidemiology and future directions."** *Circulation* 133, no. 16 (2016): 1605-1620.
- Samuel, Prasanna, Belavendra Antonisamy, Palani Raghupathy, Joseph Richard, and Caroline HD Fall. **"Socio-economic status and cardiovascular risk factors in rural and urban areas of Vellore, Tamilnadu, South India."** *International journal of epidemiology* 41, no. 5 (2012): 1315-1327.
- Srivastava, R. K., and D. Bachani. **"Burden of NCDs, policies and programme for prevention and control of NCDs in India."** *Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine* 36, no. Suppl1 (2011): S7.
- Oldridge, Neil B. **"Economic burden of physical inactivity: healthcare costs associated with cardiovascular disease."** *European Journal of Cardiovascular Prevention & Rehabilitation* 15, no. 2 (2008): 130-139
- Leal, José, Ramón Luengo-Fernández, Alastair Gray, Sophie Petersen, and Mike Rayner. **"Economic burden of cardiovascular diseases in the enlarged European Union."** *European heart journal* 27, no. 13 (2006): 1610-1619.
- www.who.int.