

Non-communicable diseases - diseases of excess



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Non-Communicable diseases – often referred to as “ Diseases of Excess” or “ Diseases of Affluence” – are increasing in both rich and poor countries. What factors are contributing to this trend? What are the implications for public health policy?

“ Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1948) where as “ Disease is a condition where any deviation from or interruption of the normal structure or function of any body part, organ, or system that is manifested by a characteristic set of symptoms and signs and whose etiology, pathology, and prognosis may be known or unknown” (Dorland’s Medical Dictionary, 2007). Disease can be divided broadly into two categories as Communicable and Non Communicable Diseases (on the basis of its spread). Communicable disease is a disease which can spread from one individual to other through any carrier/organism (Malaria, HIV/AIDS, etc). It is also known as “ Infectious or Contagious” disease. There are many factors responsible for the cause of communicable diseases like social, environmental, sanitation and education. Non Communicable disease is a disease which is not communicated from one individual from another (Hypertension, Cancer, etc). It is also known as “ Chronic diseases’ because these diseases takes lot of time to show the sign and symptoms within an individual. The major causes for NCDs are lifestyle, habits like smoking and alcohol, inadequate diet and physical inactivity.

Communicable diseases was reported to be the major cause of death in earlier time where as Non Communicable diseases(NCD’s) are of major threat in current era except in some countries like Africa where still people

die out of infections. In some countries like USA, the leading cause of death in 1900's was tuberculosis and pneumonia where as these diseases are secondary nowadays and their places are acquired by the cardiovascular diseases on the top and cancer being the second. The main reason for the reduction in communicable diseases are the improvement in diagnosis, treatment, sanitation, nutrition, housing, working conditions, preventive measures such as immunization, evolution of life saving drugs like antibiotics and sulpha drugs.

Non-Communicable diseases or Non-Infectious diseases are caused by factors mainly behavioural, lifestyle and heredity and which cannot be transmitted to other individual. It is also caused as the " Disease of Affluence" or the " Disease of Excess" as it is caused due to negligence or disturbance caused in the normal routine lifestyle which is mainly found in the upper class of the society where there is more chances of misbalance between diet and work can be seen. Few of the examples which come under non communicable diseases are Heart diseases, Stroke, Obesity, Diabetes, Cancer, etc. Acc. to WHO's statistics in 2008, Heart Stroke has become the leading cause of death globally leaving behind the infectious diseases like HIV/AIDS, TB, Malaria, etc.

In 2003, there was an estimated 56 million death globally, out of which 60% death was supposed to be due to non-communicable diseases (WHO, 2003). Among NCD's, 16 million deaths resulted from cardiovascular disease (CVD), especially Coronary Heart Disease (CHD) and Stroke; 7 million from Cancer; 3.5 million from Chronic Respiratory Disease; and almost 1 million from Diabetes (Ibid). Apart from these, mental health problems are also the

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leading contributors to the burden of disease in many countries nowadays and play a major role in contributing to the severity and incidence of other NCDs.

NCDs are now considered to be the major threat contributing 59% of death in 2000 and predicted to account for 73% by 2020 (WHO, 2002). NCDs are also termed as a “Disease of Affluence” due to incidence and prevalence mainly in the developed countries (Anand K et al, 2007). But according to them, this seems to be a misleading term as the NCD trend is increasing at a higher pace in middle and low income countries leaving them in a double burden of Communicable diseases as well as NCDs. It can more appropriately be labelled as “Disease of Urbanisation” (Ibid). Several studies done by them have proved that the NCDs and its risk factors are found in higher proportion among urban population than rural population. Their study shows that urban population has increased during past decade due to migration where as urban growth is stabilized at 3%. Contrary to it, the urban slum growth rate has doubled which has made the situation worse as these migrated poor people living in urban areas will adopt the NCD lifestyle but will not be in a condition to access the healthcare due to their poor purchasing ability. Study shows a high prevalence of NCDs risk factor in the urban slums of Haryana, India. The population residing in the slums is at high risk than the urban population due to poor access as well as no social and health support system for them. This requires an urgent intervention which can work at national, community as well as local level. A framework of the policy is required at national level which has tobacco and alcohol control measures, promotion of good diet and involvement of proper exercise.

Simultaneously, reorientation and strengthening of the government's health system is needed to face the challenge of NCDs community level efforts to create an environment which promotes adoption of healthy behaviors. To overcome this situation, government has started the Integrated Disease Surveillance Programme (IDSP) which provides a rational basis for decision making and implementing public health interventions and also ensures involving the slums as well (Ibid).

A survey was being conducted by Anand et al in urban areas slums of Faridabad District, Haryana, India, in February 2003 to June 2004 for checking out the prevalence of NCDs in urban poor people. Their study followed the STEPS approach of WHO where questions related to tobacco use, alcohol intake, diet, physical activity were included and history of treatment for hypertension, diabetes, physical values like height, weight, waist circumference and blood pressure were also measured. They surveyed 1260 men and 1304 women of age 15-64. The result came out of this survey was very alarming. The rate of smoking and alcohol drinkers were high among urban slums male population. Almost one third of the population had at least one risk factor. Alcohol consumption among younger population indicates gradually falling economy of the country in the coming future.

The table 1 (Appendix) shows that NCDs are the leading cause for the death in both developed and developing countries except some countries like Africa where still today, there is more number of death due to communicable diseases than NCDs. In 2003, 2.8 million CVD deaths occur in China and 2.6 million in India. NCDs contributed substantially to adult mortality with central and eastern Europe having the highest rates (WHO, 2003).

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The Table 2 (Appendix) shows that the developed countries have seven NCDs out of ten leading risk factors which are contributing to the global burden of disease, whereas six and three out of ten with low and high rates of mortality respectively, in the developing countries. These NCD risk factors are increasing at a higher rate in the developing countries and assumed to continue in the same manner for the next two decades.

Chronic diseases attribute to the 46% of the global burden of the disease, Cardio Vascular Diseases (CVDs), in particular. Although some of the communicable diseases are still prominent in the some parts of the Africa, Asia and Latin America, deaths mainly due to chronic diseases were reported in five out of the six WHO regions (Africa, America, South east Asia, Eastern Mediterranean, Western Pacific and Europe). In developing countries also, 79% of the deaths are reported due to the chronic diseases. Incidence and prevalence of obesity, diabetes, cancers, respiratory diseases and other NCDs are increasing all over the world (Murray and Lopez, 1996).

Developing country like China has experienced an epidemiological transition shifting from the infectious to the chronic diseases in much shorter time than many other countries. The pace and spread of behavioral changes, including changing diets, decreased physical activity, high rates of male smoking, and other high risk behaviors, has accelerated to an unprecedented degree. As a result, the burden of chronic diseases, preventable morbidity and mortality, and associated health-care costs could now increase substantially. China already has 177 million adults with hypertension; furthermore, 303 million adults smoke, which is a third of the world's total number of smokers, and 530 million people in China are passively exposed to second-hand smoke.

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The prevalence of overweight people and obesity is increasing in Chinese adults and children, because of dietary changes and reduced physical activity. Emergence of chronic diseases presents special challenges for China's ongoing reform of health care, given the large numbers who require curative treatment and the narrow window of opportunity for timely prevention of disease (Gonghuan Y et al, 2008).

Common Non-Communicable Diseases

Cardiovascular diseases include all the heart diseases like hypertension, stroke, atherosclerosis, etc. Annually, 17 million deaths are reported mainly due to the CVDs globally out of which 80% are reported in low and middle income countries with a continuous increasing trend (Reddy and Yusuf, 1998). Acc. to Lenfant, CVD will be the leading cause of the death by 2010 in the developing countries due to changes brought about by urbanization and industrialization. Due to costly and prolonged treatment cost of CVDs, developing countries are at greater prevalence for the risk factors, higher incidence of disease and higher mortality (Reddy, 2002).

Diabetes is increase in blood sugar level in a person. International Diabetes Federation has released the statistics in 2003, according to which diabetes patients will going to increase from 194 million in 2003 to 330 million in 2030 and at that time every 3 out of 4 living person will be diabetic. The age of diabetic patients in developing countries is comparatively more than developed countries. The cases found in developing countries are above the age of retirement which may lead to conditions like blindness, amputations, kidney failure and heart diseases (Boutayeb and Twizell, 2004).

Cancer and its type are increasing at an alarming rate worldwide. It is known to be the major cause for the mortality and morbidity. More than 10 million new cases and over 7 million deaths from cancer occurred in 2000 (Shibuya et al., 2002). Developing countries contributed by 53% in incidence and 56% in deaths. By 2020, there will be an increase of around 29% cases in developed countries and 73% in developing countries (Mathers et al., 1999). Lung, breast, stomach, colorectal and liver cancer are the most frequent in developing countries. Cancer and its related types can be treated on a preventative basis. Early detection and control of risk factors like tobacco and alcohol can be said to be the cornerstones in this process because it is estimated that over one third of the cancer types are preventable and around one third are potentially curable if they are detected early (Alwan, 1997).

Other NCD's includes chronic respiratory diseases like asthma and chronic obstructive pulmonary diseases, mental and depressive disorders, osteoarthritis, hearing loss and disorder of vision (WHO, 2003). They all contribute mainly to the burden of disease in developing countries.

Conditions such as obesity and high blood pressure also has a double impact, either as a disease or as a risk factor for other NCD's (WHO, 2004).

Risk Factors

The life expectancy at birth has increased since 1970 in all the high, middle and low income countries (UNDP, 2005). Due to this factor, longer life span has resulted in the predominance of the chronic diseases in the population. The epidemiological transition has resulted in the higher proportion of the

adult's population due to decline in fertility rates and the infant mortality rates. The behavioural risk factors like smoking and nutritional transition towards diet having high fat, high sugar with low carbohydrates and fruits along with the physical inactivity and increase in alcohol consumption have become the greatest health challenge in the 21st century (Magnusson, 2007). The environmental causes are also responsible for the emergence of NCD as an epidemic. These factors have brought up the nutrition transition by industrialisation of the food production, expansion of the market economies in the developing countries, the growth of the complex supply chain management at a global level, rapid growth of supermarket in the developing world and the growing concentration of global food manufacturers (Ibid). Some other key factors like rising incomes, production of cheap and low energy-dense foods, growing urbanisation and increase in growth in demand for pre-packed food are also the major risk factors for NCDs (Ibid).

The evolution of NCDs has put up a double burden on low and middle income countries. Diabetes and lung cancer are also reflecting rise in the rate of smoking and obesity which are called to be the major risk factors for the NCDs (Leeder, 2004). In the year 2001, 17 million people died due to heart diseases where as 3 million people died due to AIDS (Ibid). During this year, heart disease and stroke were the leading cause of death in both high income and low-middle income countries, accounting for 27 and 21% population respectively. Out of all, 83% of death occurred in the developing countries (Ibid). Evidence has shown that CVD occurs at an early age in developing countries, consuming their productive years of life. Globally,

obese people are also increasing at a higher pace with a far higher number overall in developing countries. Due to this, diabetic patients are also increasing with more number falling in the 45-65 age group (Ibid). Tobacco causes 4.8 million premature deaths in the year 2000, half of which were in the developing world (Ezzati and Lopez, 2003). Since 1975, cigarette consumption has decreased sharply in the developed countries, but it is continuously rising in developing countries due to the rapid increase in population. More than 1 billion smokers live in the developing countries out of 1.3 billion smokers globally which indicates that the forthcoming threat of tobacco-related epidemic will impact the developing world. Even after non-smoking awareness programmes throughout the world, there will be around 1.45 billion smokers in 2025 (Guindon and Boisclair, 2003). Tragically, half to two-thirds of the chronic smokers will die out of their habit (Jamison et al, 2006). Peto and Lopez have estimated that if this trend continues, 10 million people will die every year because of tobacco where 7 out of 10 will be from the developing countries resulting in around 150 million deaths till 2025.

The ageing of populations, mainly due to falling fertility rates and increasing child survival, are an underlying determinant of non-communicable disease epidemics. Additionally, global trade and marketing developments are driving the nutrition transition towards diets with a high proportion of saturated fat and sugars. This diet, in combination with tobacco use and little physical activity, leads to population-wide atherosclerosis and the widespread distribution of non-communicable disease. Globally, many of the risk factors for heart disease, diabetes, cancer and pulmonary diseases are

due to lifestyle and can be prevented. Physical inactivity, Western diet, alcohol and smoking are prominent causes for the NCDs and its risk factors.

Tobacco is number one enemy of public health (WHO, 2000). It is the most important established cause of cancer but also responsible in CVDs and chronic respiratory disease. In the twentieth century, approximately 100 million people died worldwide from tobacco-associated diseases such as cancer, chronic lung disease, diabetes and CVDs. Half of the 5 million deaths attributed to smoking in 2000 occurred in developing countries where smoking prevalence among men is nearly 50%. Today, 80% of the 1.2 billion smokers in the world live in poorer countries and, while tobacco consumption is falling in most developed countries, it is increasing in developing countries by about 3.4% per annum. However, albeit these striking facts, the majority of developing countries which signed the Framework Convention on Tobacco Control (FCTC) (Joossens, 2000) remain passive about the control of smoking.

Obesity and dietary habits represent potential risk factors for CVDs (Kenchiah et al., 2002), type 2 diabetes (Drewnowski and Specter, 2004), and some types of cancer (Key, 2002), especially in absence of physical activity (Derouich and Boutayeb, 2002 and WHO, 2003b). Fish is considered to be a useful food intake to prevent CVDs and reduction of CVD associated deaths (Stampfer, 2000). Similarly, intake of an adequate quantity of fresh fruit and vegetables is recommended to help reduce the risk of coronary disease, stroke and high blood pressure (WHO, 2002). But, developing countries find it more fruitful to export most of the quality fruits and vegetable production in exchange of the foreign currency.

Alcohol causes more than 2 million deaths every year in the world. It is particularly associated with liver disease and esophageal cancer. The increase in alcohol consumption in developing countries will add other hazards caused by violence and road accidents to the burden of disease.

Public health policy and its implications

Lee, Fustukian and Buse provide a helpful framework for disentangling four dimensions of global health policy-making (Lee et al, 2002) as:-

- * Policy Actors - They are the power (political) who can drive the policy and decision making at a global level. In case of NCDs, United Nations, WHO, FAO, WTO, World bank, Codex Alimentarius Commission, etc.
- * Policy Process - Process through which policy is developed and implemented. Interactions and relationship between policy actors.
- * Policy Context - For NCDs, it's global.
- * Policy Content - Effective strategy should address universal prevention , selective or primary prevention for high risk group and targeted or secondary prevention and treatment for those with existing conditions.

It is pretty clear that NCDs has its roots in unhealthy lifestyles or adverse physical and social environments. Risk factors like unhealthy nutrition over a prolonged period, smoking, physical inactivity, excessive use of alcohol, and psychosocial stress are among the major lifestyle issues. Now to our understanding, it is known that what has to be done so we have to work more on how to do it (Aulikki et al, 2001). Well planned community

programmes can be a successful step towards this process. Several factors like cultural, psychological, political and economical factors has created a gap between what needs to be done and day to day happening in the developing countries because of which major health challenges cannot be achieved. So, a community programme will help in bridging this gap and also helps in changing the NCD related lifestyles (Ibid). .

The policies made at an international level also require global processes which can help to achieve a stable policy change at a country level, thus reducing the long term harm associated with it. International law is an example for this type of process. Multilateral agreements contain legally binding obligations, such as the “ WHO’s Framework Convention on Tobacco Control” (FCTC). FCTC includes hard law conventions. FCTC is an evidence-based treaty that identifies core areas of agreement over regulatory measures that involved countries are legally required to implement within their own domestic systems (WHO, 2005). Apart from FCTC, there are some soft law resolutions and declarations too, like United Millennium Declaration and WHO’s Global Strategy on Diet, Physical Activity and Health (GSDPAH). WHO also worked in the area of chronic, lifestyle related diseases through Global Strategy on Diet, Physical Activity and Health (GSDPAH, 2004). It works on a strategy which builds on the role of tobacco, unhealthy diet and physical inactivity in the most NCDs. GSDPAH works in close relation with the UN agencies, the WTO, World Bank, other Development banks, Codex Alimentarius Commission (WHO, 2004). One of the most significant health development programs within the United Nations system is the Millennium Development Goals (MDGs). “ The MDGs are a global partnership embracing

ambitious goals to be achieved collectively within 15 years timeframe from 2000-2015" (Magnusson, 2007, p 6). The MDGs and FCTC serve as helpful models when considering ways of strengthening the global response to non-communicable diseases.

The ideal step for developing countries to overcome the NCD epidemic and they have to plan and implement accordingly to control NCDs. Each community based prevention programmes require the same principles to be followed. As an example, The North Karelia Project in least developed areas of Finland which was based on low cost lifestyle modifications and community participation (Puska P et al, 1981). The reason to follow the general principle can be the collaboration between countries and different international organizations working on the similar fields and projects like WHO's countrywide Integrated Non Communicable Disease Intervention (CINDI, 1985). Even these sort of integrated programmes like CINDI were implemented in developed countries; they are now followed by the developing countries too. Many of these programmes are carried out in conjunction with the WHO integrated programmes, which was started in 1986. After the success of CINDI programme, American regional office had also launched CARMEN (AMRO) programme in 1990s. With the regional development experience, WHO has launched similar programme in Asian and African networks.

In Latin America, Cuba is carrying out the NCD prevention programme from long time with the collaboration with the WHO activities where Havana and Cienfuegos as the main sites. Chile also participated in the Interhealth Programme CARMEN and was the first Latin American country to join this <https://assignbuster.com/non-communicable-diseases-diseases-of-excess/>

programme and many other countries followed it. Argentina has started “PROPRIA” heart health intervention as an active network at various demonstration sites (Aulikki, 2001).

Africa has started community based CVD prevention programme long time back. Nigeria, Mauritius and united republic of Tanzania participated in Interhealth Programme and gained the positive responses. Mauritius intervention programme recorded considerable effect of nutrition policy and education interventions on diet and serum cholesterol levels, although rates of obesity and diabetes increased (Dowse G et al, 1995).

Asia’s community-based initiatives have been initiated in Sri Lanka, Thailand, Singapore, India, Pakistan, Malaysia, Iran and other countries. Particularly active development has taken place in China, where the Interhealth Programme was involved in initiatives in Tianjin and Beijing (Tian et al, 1995)

The Tianjin project in China was one of the major project launched in 1984 in China. This project was also cooperating groups in Finland, China and USA for NCD control since 1989. This project focused on 4 leading NCDs of China, i. e. stroke, coronary heart disease, cancer and hypertension. The aim of this project was to reduce sodium intake in the population, decrease smoking especially among men and provide hypertension care by reorganizing the existing primary health care services. The result of this project shows a significant reduction in the sodium intake after three years and also reduction in number of patients of Obesity and hypertension among 45-65yrs

old after five years of the intervention. Smoking cases were also reduced among men, especially those with the higher education (Aulikki et al, 2001).

Health education and the media campaigns also play an important role in the community programmes. Media campaigning although leaves the less impact on the population, it is one of the effective measure in the comprehensive package. Health service intervention such as primary care centre in the long run can also be one of the most effective intervention tools. This strategy can more appropriately work where certain biological risk factors such as hypertension and high blood pressure are dealt with. Primary health care workers played an important role in both North Karelia project and Tianjin project (Ibid).

The North Karelia project worked on a concept of Community organization where various sectors of the community were collaborated and involved. It involved many non governmental organizations (NGOs), such as Housewives` organizations. It is not easy to collaborate with the industries and businesses at a small community but a classic example for it is finland's cholesterol level, which reduces with the support and collaboration of the food industries, who supported the policy decisions (Puska P et al, 1986).

Aulikki et al had made some recommendations for a successful NCD prevention program which must include the following factors. A good understanding of the community, close collaborations with the various community organisations and the involvement of the local population is important for any community intervention programme. It should combine well planned media and provide some communication messages in the

community activities. It should involve different elements such as primary health care workers, food industries and supermarkets, voluntary organisations, schools work places, and local media for its success. It should be cost effective, mainly in the developing countries. For this reasonable outcome, effective dose intervention is a very important requirement (Aulikki et al, 2001).

The increasing NCDs burden should be controlled by the developed and developing countries as a global health priority. International organisations with the national, regional and each individual's contribution can make these programme a success. Controlling of risk factors like smoking, alcohol, obesity, diet and inactivity, sexual and environmental factors are must and should be considered seriously and worked upon to treat it. The poverty and the high cost of prevention and treatment of chronic diseases causes burden on many countries and thus demands for international solidarity and public private partnership. The coordination of health decision makers, non-governmental organizations, research institutions, community groups and individuals is must for controlling the incidence of diseases, preventing the spread of epidemics and regulate the health management of human and material resources (Boutayeb, 2005). WHO is a political champion for coordinating global response. The developing countries face problem in the implementation and enforcing the policies that are set up by the international legal standards which have a normative role and also these legal standards are not self executing, so compliance can be monitored by the NGOs and government. A global approach in a way like this could reduce health inequalities (Magnusson, 2007).

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