

GLOBAL INTERVENTION FOR PREVENTION AND CONTROL OF NON-COMMUNICABLE DISEASES

Vaibhav Khandelwal

Indian Institute of Management Indore, Indore, Madhya Pradesh, India

Correspondence to: Vaibhav Khandelwal (vaibhav.p.khandelwal@gmail.com)

DOI: 10.5455/ijmsph.2013.060720131

Received Date: 16.06.2013

Accepted Date: 05.07.2013

ABSTRACT

The aim of this paper is to provide an overview of the discourse currently going on in the world about the prevention and control of non-communicable diseases. There is a realization now across nations, whether developed or developing, that NCDs are a serious threat and must be dealt with, as proactively as communicable diseases. There is also an understanding that this is not an issue that can be dealt with, in isolation. There has to be a collaborative approach between the various State and Non-State actors. The paper puts forth the major risk factors and provides some statistics to comprehend the grimness of the situation. Some estimates of the global economic burden of NCDs in 2010, and the projected figures for 2030 have also been put forth to highlight the fact that it's not only an individual who suffers the brunt of the disease, but it is the whole economy that has to face the effects of it indirectly. Some intervention measures that have been researched upon and found to be an effective way to tackle this looming threat have been put forth in this paper. The paper also briefly talks about the role of International Partners, WHO and member states in fighting against this growing menace.

Key-Words: Non Communicable Diseases; Risk Factors; Global Economic Burden

Introduction

Non-Communicable diseases (NCDs), as the name suggests are those diseases that are non-infectious and get doesn't get transmitted between persons by any form of contact. These include diseases like Cardio-vascular diseases, Cancer, Diabetes and other chronic respiratory diseases.^[1] NCDs are slowly occupying a large proportion of the total deaths due to diseases in the world. NCDs account for 63% of the deaths due to these diseases.^[2] As highlighted by Murray & Lopez,^[3] epidemics of non-communicable diseases (NCD) are presently emerging or accelerating in most developing countries. These countries account for 80% of the global deaths due to NCDs.^[2]

These are not only posing a danger to human health but are also impacting the growth of economies. NCDs are detected late thereby resulting in early deaths in low and middle income countries. Due to late detection, the cost of medical treatment goes up. Also, since the penetration of Health Insurance is very low, the majority of the expenditure is Out-of-Pocket expenditure (OOP) which leads to families in low income group falling into a debt trap and those

above poverty line falling below the poverty line. In developed economies, the situation is a bit different in terms of the identification of the disease and its treatment. The disease is identified in its early stages due to wider level of awareness and extensive availability of medical facilities. Also, most of the population is covered under some form of insurance which enables them to afford the treatment thus reducing the incidences of death due to these diseases in these countries. Keeping these factors in mind, we are seeing policy actions being initiated both at national as well as international level. National governments, Multilateral organizations like WHO, and national and international NGOs are working together to alarm the people about the impending danger lurking in their backyard.

Literature Review

Robert Beaglehole et al.^[4] have proposed five priority actions for response to the NCD crisis leadership, prevention, treatment, international cooperation, and monitoring and accountability. The paper also discusses the delivery of five priority interventions-tobacco control, salt reduction, improved diets and physical activity, reduction in hazardous alcohol intake, and

essential drugs and technologies. Also, it discusses the criteria that should be kept in mind while choosing the interventions. The criteria that have been discussed in the paper include health effects, cost effectiveness, low costs of implementation, and political and financial feasibility.

Puska, Pekka et al.^[5] have prescribed community based non communicable disease interventions. The first community based heart health intervention project was the North Karelia project (1972) in Finland. After this project, a number of other projects were launched in other places in Europe and other developed countries. However in the later part of the century, due to increasing incidence of NCDs in the developing countries, similar kinds of projects were launched in these nations as well. The major focus of these programmes was to modify the levels of the major risk factors of NCDs through information dissemination in the communities and by involving the community to create awareness about these diseases.

A UN resolution was passed on 13th May 2010 which dealt with the prevention and control of non-communicable diseases which called for a mandate for the member countries to discuss NCD in the plenary meeting scheduled in September 2011. Commenting on the resolution, Alleyne et al.^[6] have described the importance of this resolution in terms of combating this problem. They have also put in their own suggestions as to how to make the discussions to be held in 2011 more meaningful. Firstly, their suggestion is to build in some indicators for NCDs so that the exercise of fighting NCDs becomes more meaningful. The second issue they have discussed about is that of the implementation of the WHO Action Plan of the Global Strategy for Non-Communicable diseases through national level commitments and adopting an approach that integrates health and non-health sectors. The third suggestion which they offer is that there should be commitment towards providing affordable medicines and appropriate technology. World Health Organisation^[4] came out with a 2008-2013 Action plan for the Global Strategy for the Prevention and Control of Non-communicable diseases. The action plan talks about the fact that in spite of the availability of cost effective

strategies to fight against NCDs, there hasn't been enough willingness shown by the nations themselves. In fact, it is only now that the serious of the danger that is being imposed by the NCDs in the short term as well as its ill effects in the future is being recognized. The global development agenda doesn't focus on these diseases. Also, the Millennium Development Goals also do not talk about NCD prevention in any form. It has also been recognized in the report that low and middle income countries are going to face the heaviest economic burden of the diseases. The report has proposed several actions to be taken by Member states and International Partners. It has identified four factors to focus upon: Tobacco use, Physical inactivity, unhealthy diets and the harmful use of alcohol.

Boutayeb & Boutayeb^[7] have discussed the burden that is being put upon the developing countries by non-communicable diseases. They have studied the evolution of NCDs in developing countries since 1990 and project that by 2020, seven deaths out of every 10 deaths due to NCDs will occur in developing countries. Through their study of incidence of CVDs, Diabetes, various forms of cancer like Lung cancer, Breast Cancer, Liver cancer, Stomach cancer etc. and chronic respiratory diseases, they have identified the risk factors in developing countries.

A document^[8] released by the WHO regional office for Europe based on the Meeting of WHO European Counterparts discusses the strategy for the prevention and control of NCDs in Europe. The document lays out the challenges being faced by the European nations and the interventions that exist for prevention and control of the disease. It provides a strategic roadmap to achieve the goals being targeted and also provides a framework for the nations to act upon if they want to reduce this menace. The report realizes the fact that the challenges arising due to non-communicable diseases cannot be faced and solved in isolation. There has to be collaboration between nations as well as between health and non-health sectors.

It is being largely recognized now that there are huge costs associated with NCDs not only for an individual but also for the nation as a whole. There are increasing social security costs which

are putting tremendous pressure on the national governments forcing them to relook their health financing strategies. An instance of the same can be observed in the case of the debate currently going on in USA over their Medicaid programme. There also costs associated with the productivity loss that occurs in an economy when the citizens due to being contracted by these diseases are not able to work efficiently or not able to work at all in spite being the working age population bracket. A study^[2] was done by Harvard School of Public Health and WEF to calculate the economic burden of health problems. Cost-of-illness approach, the value of lost output: the economic growth approach and the value of statistical life approach have been used to study the economic loss.

There has also been a need felt for continuous monitoring and evaluation of the programmes being undertaken at the global level to check for their effectiveness and course correction if required. The WHO Executive Board meeting (2011) came out with a report card of the progress on the objectives endorsed in the meeting held in 2008. The report^[9] discusses the action that has been taken by the WHO Secretariat on the six objectives that were decided in the action plan. After the study of the report, it was concluded that substantial progress has been made in the implementation of the action plan and this plan would contribute a lot towards reducing the burden of NCDs. However, the report also recognizes the fact that there are still number of challenges at the Member State level which need to be addressed for complete success of this programme.

Zimmet^[10] has put an interesting perspective to combating non-communicable diseases. With reference to Type-2 diabetes, he has argued that rather than just focusing upon medical approaches to solve this problem, the policy makers must look at socio-economic factors to solve this problem. According to him, these factors have an influence on nutrition, physical activity and health, thereby impacting on the individual and community health patterns.

Major NCD Risk Factors

NCDs emerge from a combination of modifiable

and non-modifiable risk factors^[2]:

- *Non-Modifiable Risk Factors:* These are those risk factors that cannot be modified by an individual through any form of change. They mainly arise due to factors like age, sex and genetic make-up.
- *Modifiable Risk Factors:* These factors can be changed through an individuals' willingness to change and societal interventions.

WHO refers to four major modifiable risk factors:

- *Unhealthy Diet:* This involves higher intake of refined starch, sugar, salt and unhealthy fats.
- *Physical Inactivity:* We are seeing that the lifestyle is increasingly becoming sedentary. Technology along with making the work easier and comfortable has also led to increasing physical inactivity. This trend which was prevalent only in the developed world until now in now spreading in the developed world as well. As per Cecchini^[11], we are seeing an increasing trend in the number of people in the developing countries getting afflicted by overweight and obesity and the associated health problems.
- *Tobacco Use:* The number of tobacco deaths is projected to double between 2010 and 2030 in low and middle income countries.^[2] 3.4 million deaths due to tobacco deaths are expected to grow to 6.8 million.^[12] So, there is an urgent need to focus on this issue to stop these deaths.
- *Harmful Use of Alcohol:* There are inferences that have been found that consumption of alcohol in excessive quantity leads to many cancers and other cardiovascular diseases.^[13]

Anticipated Global Economic Impact

World Economic Forum and Harvard School of Public Health in the Global Economic Burden of Non-Communicable diseases study^[2] have calculated the economic burden in dollar terms using three approaches developed by economists to calculate the economic burden of health problem. The figures are as under:

1. **Cost of Illness Approach:** Estimates of direct and indirect costs if ill health for five distinct disease categories is:
 - Cancer: an estimated US\$ 290 billion in 2010 rising to US\$ 458 billion in 2030.

- Cardiovascular disease: an estimated US\$ 863 billion in 2010 rising to US\$ 1.04 trillion in 2030.
 - COPD: an estimated US\$ 2.1 trillion in 2010 US\$ rising to US\$ 4.8 trillion in 2030.
 - Diabetes: an estimated nearly US\$ 500 billion in 2010 rising to at least US\$ 745 billion in 2030.
 - Mental illness: an estimated US\$ 2.5 trillion in 2010 rising to US\$ 6.0 trillion by 2030.
2. **EPIC Approach:** lost output from five conditions (cancer, cardiovascular disease, chronic respiratory diseases, diabetes and mental health) over the period 2011-2030 is estimated at nearly US\$ 47 trillion.
 3. **VSL Approach:** the economic burden of life lost due to all NCDs ranges from US\$ 22.8 trillion in 2010 to US\$ 43.3 trillion in 2030.

Interventions for NCD Prevention and Control

WHO in the run-up to the UN High-Level Meeting^[9] has collected evidences on various interventions and proposed some “Best Buy” interventions for NCD prevention and control.

Tobacco Use

- Tax increases
- Smoke-free indoor workplaces and public places
- Health information and warnings
- Bans on tobacco advertising, promotion and sponsorship

Harmful Use of Alcohol

- Tax increases
- Restricted access to retailed alcohol
- Bans on alcohol advertising

Unhealthy Diet and Physical Activity

- Reduced salt intake in food
- Replacement of trans fat with polyunsaturated fat
- Public awareness via mass media about diet and physical activity

Cardiovascular disease (CVD) and diabetes

- Counselling and multi-drug therapy for people with a high risk of developing heart attacks

and strokes (including those with established CVD)

- Treatment of heart attacks with aspirin

Cancer

- Hepatitis B immunization to prevent liver cancer (already scaled-up)
- Screening and treatment of pre-cancerous lesions to prevent cervical cancer

Role of the Main Players

WHO in their 2008-2013 Action plan^[4] have defined roles of the players in the global fight against NCDs.

International Partners

The roles of international partners have been deemed to be very important in meet the challenges that are coming up. A collaborative approach is required between WHO, United Nations, NGOs, other professional bodies and private sector. Areas like Advocacy, Resource Mobilisation, Capacity building and collaborative research have identified for concerted action.

WHO

It is envisioned to provide leadership and set the direction for the global discourse and action. It is expected to focus on four broad areas:

- Global partnerships
- Global Networking
- Technical Support
- Strategic support for research and development

Member States

Four set of responsibilities have been entrusted to the member states:

- Generating a local base for action
- Establishing a programme for promotion of health across the life course and prevention and control of non-communicable diseases
- Tackling issues outside the health sector which influence prevention and control of non-communicable diseases
- Ensuring health sector reforms are responsive to the challenge

Conclusion

The magnitude of the NCD epidemic across the world coupled with high incidences and projections of mortality demand immediate attention of policy makers across the world. The leadership, both state and non-state will have to rise up to the occasion and take the responsibility to fight this epidemic head-on.

The Director General of WHO in 1999 in "The World Health Report 1999: Making a Difference"¹⁴ remarked, "The world could end the first decade of the 21st century with notable accomplishments. Many of the world's poor people would no longer suffer today's burden of premature death and excessive disability, and poverty itself would thereby be much reduced. Healthy life expectancy would increase for all. Smoking and other risks to health would fade in significance. The financial burdens of medical needs would be more fairly shared, leaving no household without access to care or exposed to economic ruin as a result of health expenditure. And health systems would respond with greater compassion, quality and efficiency to the increasingly diverse demands they face".

The challenge has been thrown open to the world leaders. It would be interesting to see whether they are able to rise to the challenge.

References

1. WHO. 2008-2013 Action Plan for the Global Strategy for the Prevention and Control of Non-communicable Diseases. World Health Organisation 2008
2. WEF and Harvard School of Public Health. The Global Economic Burden of Non-communicable Diseases. 2011
3. Murray C, Lopez A. Mortality by cause for eight regions of the world: Global Burden of Disease Study. *Lancet*. 1997; 349 (9061):1269-1276
4. Beaglehole R, Bonita R, Horton R, Adams C, Alleyne G, Asaria P, et al. Priority actions for the non-communicable disease crisis. *Lancet*. 2011;377(9775):1438-47.
5. Puska P, Nissinen A, Tuomilehto J, Salonen JT, Koskela K, McAlister A, et al. The community-based strategy to prevent coronary heart disease: conclusions from the ten years of the North Karelia project. *Annu Rev Public Health*. 1985;6:147-93.
6. Alleyne G, Stuckler D, Alwan A. The hope and promise of the UN resolution on noncommunicable diseases. *Globalization and Health*. 2010;6:15
7. Boutayeb A, Boutayeb S. The burden of non-communicable diseases in developing countries. *Int J Equity Health*. 2005; 4(2)
8. WHO. European Strategy for the Prevention and Control of Non-communicable diseases-Second Draft. World Health Organisation Regional Office for Europe. 2006
9. WHO. Prevention and control of non-communicable diseases. World Health Organisation, 2011.
10. Zimmet P. Globalization, coca-colonization and the chronic disease epidemic: can the Doomsday scenario be averted? *J Intern Med*. 2000;247(3):301-10.
11. Cecchini M, Sassi F, Lauer JA, Lee YY, Guajardo-Barron V, Chisholm D. Tackling of unhealthy diets, physical inactivity and obesity: health effects and cost effectiveness. *Lancet*. 2010; 376(9754):1775-1784
12. NCD Alliance. NCDs, Tobacco Control, and the FCTC. Briefing Paper (2011). Available from URL: <http://www.ncdalliance.org/tobacco>
13. Boffetta P, Hashibe M. Alcohol and Cancer. *Lancet Oncol*. 2006; 7:149-156
14. WHO. The World Health Report 1999: Making a Difference. World Health Organisation, 1999.

Cite this article as: Khandelwal V. Global intervention for prevention and control of non-communicable diseases. *Int J Med Sci Public Health* 2013; 2:780-784.

Source of Support: None

Conflict of interest: None declared