REVIEW ARTICLE

BURDEN OF NON COMMUNICABLE DISEASES IN INDIA: SETTING PRIORITY FOR ACTION

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DOI: 10.5455/ijmsph.2013.2.7-11 **Received Date: 31.07.2012** **Accepted Date: 12.09.2012**

ABSTRACT

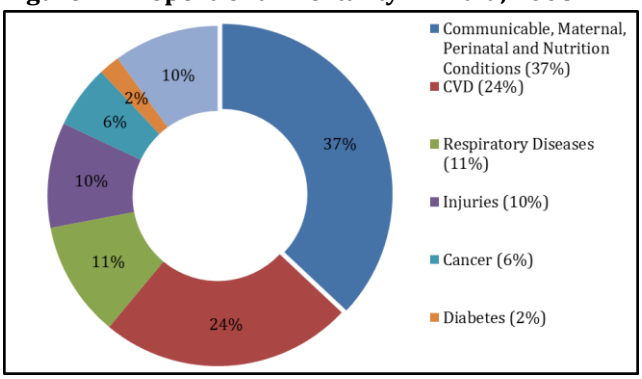
Non-communicable diseases (NCDs) are defined as diseases of long duration, and are generally slow in progression. NCDs are replacing communicable diseases, maternal and child health as well as malnutrition as the leading cause of death. Non-communicable diseases are the leading cause of death in the world, responsible for 63% deaths worldwide in 2008. NCDs accounts for 53 percent of deaths in India. Based on available evidence cardiovascular diseases (24 percent), chronic respiratory diseases (11 percent), cancer (6 percent) and diabetes (2 percent) are the leading cause of mortality in India. Treatment cost is almost double for NCDs as compared to other conditions and illnesses. Burden of non-communicable diseases and resultants mortality is expected to increase unless massive efforts are made to prevent and control NCDs and their risk factors. India could develop a strategy for reducing out of pocket expenditure. Underlying determinants of NCDs mainly exist in non-health sectors, such as agriculture, urban development, education and trade. Inter-sectoral collaboration is therefore essential to create an enabling environment. Government of India had launched various vertical programmes such as National Cancer Control Programmes, National Tobacco Control Programme, National Programme for Prevention and Control of Cancer, Diabetes, CVD and Stroke (NPCDCS) etc. Strong surveillance, monitoring and evaluation system is required for successful implementation of the programmes. Public health facilities should be strengthened for providing services of screening; early diagnosis and treatment within the public health care delivery system. Efforts need to be done on implementing the clinical standards and guidelines developed under the Indian Public Health Standards (IPHS), and integrating NCD training into training curricula of health workforce.

KEY-WORDS: Cardiovascular Diseases (CVDs); Indian Public Health Standards (IPHS)

Non-communicable diseases (NCDs) are defined as diseases of long duration, and are generally slow in progression. NCDs are replacing communicable diseases, maternal and child health as well as malnutrition as the leading cause of death. NCDs are the leading cause of death in the world, responsible for 63% deaths worldwide in 2008.[1] The majority of these deaths (36 million) were attributed to cardiovascular diseases (48%), cancers (21%), chronic respiratory diseases (12%) and diabetes (3%).[2] The global burden of NCDs is increasing and is a major barrier to development and achievement of Millennium Development Goals (MDGs).[3] NCDs are more prevalent in developing nations and India is not exempted from it.

According to the recent statistics on NCDs shown in graph 1, 53 percent of the deaths were due to NCDs in India. Cardiovascular disease (CVDs) alone account for 24 percent of all deaths. Chronic respiratory diseases (CRDs), cancers and diabetes accounted for 11, 6 and 2 percent of all deaths, respectively.[4]

Figure-1: Proportional Mortality in India, 2008

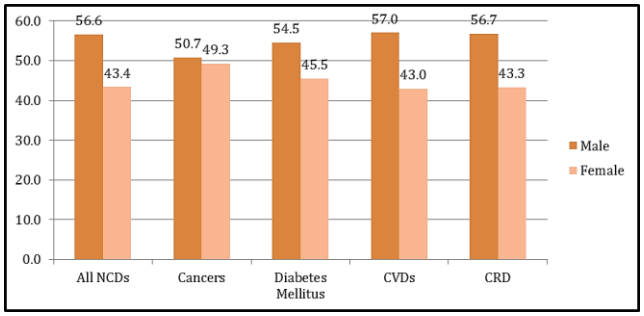


Source: Non-communicable Diseases Country Profile 2011, World Health Organization (WHO)

Figure 2 shows the gender-wise percentage distribution of deaths due to NCDs in India and findings shows that deaths due to NCDs are more

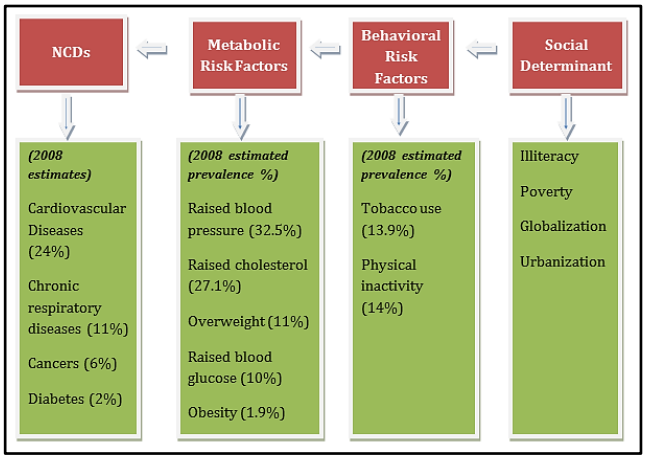
in males as compared to females.[5] According to WHO, only 35 percent of the deaths in India due to NCDs, occurred in the younger age group (under age 60).[4]

Figure-2: Percentage Distribution of Deaths due to NCDs in India, 2008



Source: Global Health Observatory, World Health Organization 2011

Figure-3: NCDs, its risk factors and determinants



These four NCDs share two behavioural risk factors i.e. daily and current tobacco use and physical inactivity that account for majority of the NCD deaths. These behaviours in turn lead to five key metabolic changes: raised blood pressure, raised cholesterol, overweight, raised blood glucose and obesity.[4]

Socioeconomic conditions can influence people's exposure and vulnerability to NCDs and can influence health outcomes. The major determinants of NCDs including poverty, illiteracy, poor health infrastructure and social inequality at one side and demographic transition in terms of increasing life expectancy and urbanization and globalization on the other.[6] Globalization is an important determinant of NCDs epidemics since it has direct effects on risks to populations and indirect effects on national economies and health systems.[7]

Various articles have been published on NCDs, its magnitude and priority actions to be taken to deal with the crises of NCDs. Nongkynrih et al portray the status of communicable and non-communicable diseases in India.[8] The Lancet NCD Action Group and the NCD Alliance propose five overarching priority actions for the response to the crisis: leadership, prevention, treatment, international cooperation, and monitoring and accountability and 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.[3] Underdeveloped health systems and mal-distribution of health care is also an important determinant of health. Under developed and under resourced health care systems worsen the impact of the NCD epidemic.

Table-1: Public Health Facilities

Parameter	Required	Functioning	Shortfall
Sub Centers (SC)	183886	148124	35762
Primary Health Centers (PHC)	30935	23887	7048
Community Health Centers (CHC)	7575	4809	2766

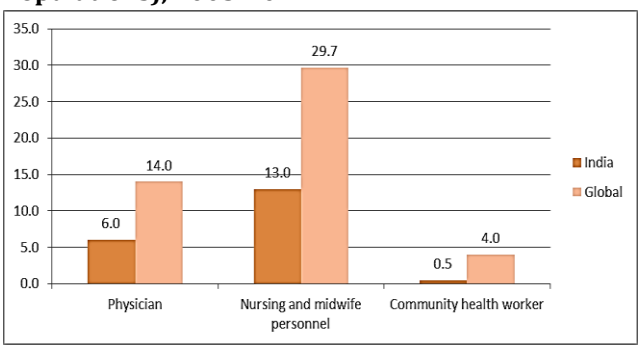
Source: Rural Health Statistics Bulletin, MoHFW (2011)

Table-2: Availability of Infrastructure Facilities at Public Health Facilities

Parameter	Required	Available	Gap (%)
At Primary Health Center (PHC)			
Operation Theatre	23887	9131	14756 (61.8%)
At Community Health Center (CHC)			
Laboratory	4809	4545	264 (5.5%)
Operation Theatre	4809	4190	619 (12.9%)
Labor Room	4809	4557	252 (5.2%)

Source: Rural Health Statistics Bulletin, MoHFW (2011)

Figure-4: Density of Health Workforce (per 10,000 Populations), 2005-10



Current health system in India has many limitations in tackling NCDs. First, there is a huge shortfall of public health facilities. Second, non-

availability of proper infrastructure such as laboratory, operation theatre etc. and third, poor density of health workforce per 10,000 populations. Despite of that, health workers lack training in providing NCD services at the primary care level, particularly little attention is paid to health promotion and primary prevention. Finally, essential drugs for NCDs are often not available at the primary care centers.

According to Rural Health Statistics Bulletin 2011 of Ministry of Health and Family Welfare, Government of India, there are 148,124 SCs, 23,887 PHCs and 4809 CHCs functioning in India. Table 1 depicts the shortfall of 35,762 SCs, 7,048 PHCs and 2,766 CHCs in India.[9]

To provide preventive and curative services at public health facilities, proper infrastructure such as operation theatre, laboratory etc. should be available at the health centers as per recommended by Ministry of Health and Family Welfare, Government of India. Table 2 shows the gap in infrastructure on the basis of number of health facilities functioning in the nation. Findings depict that more than 60 percent PHCs shows non availability of operation theater.[9]

In order to provide round the clock services, appropriate human resources including both medical and support should be available at public health facilities. According to World Health Statistics (WHO) (2012), density of health workforce per 10,000 populations is quite disappointing in India as compared to global situation. Graph 3 depict that 6.5 physician and 10 nursing/midwife personnel is available per 10,000 population in India. Density of community health worker is miserable which is 0.5 per 10,000 populations.[10] The present healthcare delivery system is not able to provide even the basic health services.

Economic Burden of NCDs

The current financing burden for NCD treatment falls disproportionately on the poor. In 2008, India spent 4.2 percent of its GDP on health care. Public expenditures total approximately 1.1 percent of GDP, leaving most funding coming from private sources. Of private resources, 74.4 percent is out of pocket.[10] Treatment cost is almost double for NCDs as compared to other conditions and illnesses. With the chronic nature of NCDs and the high cost for some medications, financial vulnerability is likely the result and this accounts for some of the distress financing of care.

National Response to NCDs

The Directorate of Health Services has a dedicated NCD division that acts as the focal point for coordinating the NCD control programs in the country. Currently the division is under reorganization. The National Rural Health Mission (NRHM) provides an overarching umbrella, subsuming the existing programs of the Ministry of Health including all NCD control programs.[11,12]

Indian Council for Medical Research (ICMR), the National Institute of Communicable Diseases, the All India Institute of Medical Sciences (AIIMS), and the Public Health Foundation of India (PHFI) are the key institutions dealing with NCDs.

Ministry of Health and Family Welfare has launched National Cancer Control Programme, National Tobacco Control Programme and National Programme for Prevention and Control of Cancer, Diabetes, CVD and Stroke (NPCDCS) to address NCD such as cancer, CVD, diabetes and stroke that are the major factors reducing potentially productive years of human life and resulting in huge economic loss. Indian Public Health Standards (IPHS) for services, human resources, drugs, investigations and equipment are under development that should be provided for NCDs at various healthcare levels under the NPCDCS.[13-15]

In the area of smoking, India has adopted the ***Framework Convention on Tobacco Control (FCTC)*** and has prepared a tobacco action plan.[16] A comprehensive law, ***the Cigarette and Other Tobacco Products Act, 2003 (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution)***, aims to reduce the exposure of people to tobacco smoke; prohibit advertisements; prohibit sale to minors; and regulate the contents of tobacco products.

Prevention efforts for tobacco are also developed and planned for integration into the NRHM and the NPDCS.[17] National Tobacco Control Programme (NTCP) has been the major milestone to facilitate the implementation of the tobacco control laws to bring about greater awareness about the harmful effects of tobacco and to fulfill the obligation(s) under the WHO-FCTC.

Way Forward

NCDs are leading cause of death, disability and morbidity and their burden is likely to increase if urgent interventions are not initiated on the mass scale throughout the country. India should develop an overarching policy or strategy specific to NCDs, and create a higher-level coordination mechanism. Underlying determinants of NCDs mainly exist in non-health sectors, such as agriculture, urban development, education and trade. Inter-sectoral collaboration is therefore essential to create an enabling environment, which promotes healthy lifestyles. Need is to emphasize on health promotion and preventive measures to reduce the exposure of risk factors.

Rural health statistics shows a gap in availability of public health facilities (i.e. sub centers, primary health centers and community health centers etc), infrastructure (i.e. laboratory, operation theater etc), human resource (i.e. specialists, medical officers and paramedical staff) etc in rural India. Despite of that, health professionals qualified in NCDs are insufficient in meeting the demand. Efforts need to be done on implementing the clinical standards and guidelines developed under the IPHS, and integrating NCD training into training curricula.[18] Facilities and capacity for screening, early diagnosis and effective management are required within the public health care delivery system.

Lack of availability of robust surveillance and research data on NCDs is an important barrier to effective planning and implementation of NCD prevention and control programmes. A strong surveillance system needs to be develop, which can provide reliable and timely data on NCD complications, quality of healthcare, or health expenditures.

Most clinical prevention and treatment services are from private out-of-pocket sources, impose a large burden on the poor, and lead to both poverty induction and catastrophic spending. Government should create financing schemes that protect the poor. In parallel, India could seek to develop schemes relying on risk pooling. Finally, India could develop a strategy for financing population-based prevention interventions within and outside the health sector. Proper evaluation of policies and programmes targeted towards NCDs should be done.[19]

Currently implemented programs that address NCDs have not been able to reduce the burden due to limited scale of implementation. The government should consider a massive investment and efforts to prevent and control NCDs and their risk factors, specific measures at individual and family level, early diagnosis through screening and better diagnostic facilities, improved capacity for management and universal access to health services. Public awareness program, integrated management and strong monitoring system are required for successful implementation of the program and making services universally accessible in the country.[20]

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Cite this article as: Sharma K. Burden of Non Communicable Diseases in India: Setting Priority for Action. Int J Med Sci Public Health 2013; 2:7-11.
Source of Support: Nil
Conflict of interest: None declared