

chronic disease news

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Editorial



Dear Readers,

Welcome to the seventh issue of *Chronic Disease News*. This newsletter is an initiative from icddr,b's Centre for Control of Chronic

Diseases (CCCD) and is designed to keep you up-to-date on the state of chronic disease in Bangladesh and the findings of our recent research projects.

This issue includes an overview of the CCCD's Technical Advisory Group meeting, which provided feedback on current centre activities and information on the future of non-communicable disease research. The group is comprised of high-profile chronic disease experts and policymakers in Bangladesh from the Ministry of Health and Family Welfare, it's Directorate General of Health Services; national institutes on cardiovascular diseases, respiratory diseases, diabetes, kidney disease and mental health; World Health Organization Bangladesh; and non-governmental organisations working on non-communicable diseases.

We also share with you two of our recent research findings. One, funded by the National Heart, Lung and Blood Institute of the National Institutes of Health of the United States, focuses on the care-seeking behaviour for hypertension in urban and rural areas, and the other looks into the burden of chronic disease attributed to life-style risks, done in collaboration with the Institute of Medicine of the United States.

In April 2012, the CCCD celebrated World Physical Activity Day in downtown Dhaka with the help of the icddr,b Staff Welfare Association and, for the first time, the support of the Diabetic Association of Bangladesh. The CCCD also offered a Chronic Disease Health Corner at the Bangla New Year fair organized for all icddr,b employees. At the fair, the CCCD research team provided free blood pressure and blood glucose measurements along with assessments of body mass index.

As always, the CCCD works to increase lifetime wellbeing through the promotion of a healthy lifestyle and the prevention and control of chronic diseases. I hope you enjoy reading about our activities in this issue of our newsletter.

Alejandro Cravioto
Executive Director, icddr,b

Hypertension: Tracking Awareness and Care-seeking Behaviour in Bangladesh

Non-communicable diseases (NCDs) are the leading cause of death in the world. According to the World Health Organization (WHO), NCDs are responsible for 63% of the 57 million deaths that occurred in 2008. NCD risk factors are a leading cause of the death and disability burden in nearly all countries, regardless of economic development. The leading risk factor globally for mortality is high blood pressure (responsible for 13% of deaths globally), followed by tobacco use and elevated blood glucose.

Hypertension, or high blood pressure, is often labelled as a silent killer, as it can remain unrecognised for years, showing no symptoms but causing progressive damage to the heart, other organs and blood vessels. Accordingly, untreated hypertension can lead to serious diseases, including heart attacks, stroke, kidney failure and eye problems. In addition, chronic hypertension leads not only to physical disability, but also to

a long-term economic burden on the household, especially of those living in poverty.

Blood pressure is measured as systolic and diastolic pressures. The former refers to blood pressure when the heart beats while pumping blood. The latter refers to blood pressure when the heart is at rest between beats. Table 1 reflects the categories for blood pressure levels in adults.

Contrary to the common perception that NCDs are NOT a health problem in developed countries, 80% of chronic disease deaths occur in low- and middle-income countries, and Bangladesh is no exception. Tertiary-level hospital data indicate that cardiovascular diseases are already one of the leading causes of mortality in Bangladesh, for which hypertension is a major risk factor. Yet, representative data on the prevalence of hypertension in the Bangladeshi population are lacking.

Table 1. Categories for blood pressure levels in adults (measured in millimeters of mercury, or mmHg).

Category	Systolic (top number)		Diastolic (bottom number)
Normal	Less than 120	And	Less than 80
Prehypertension	120–139	Or	80–89
High blood pressure			
Stage 1	140–159	Or	90–99
Stage 2	160 or higher	Or	100 or higher

Source: National Heart, Lung and Blood Institute website



To address this, researchers from the Centre for Control of Chronic Diseases (CCCD) conducted a recent study on health seeking behavior and health systems response to find out the consequence of hypertension on household functioning in Bangladesh. Study population included adults over the age of 20 living in the rural Matlab and urban Kamalapur field sites of icddr,b. The study surveyed 1,678 men and women—823 from Kamalapur and 855 from Matlab.

Awareness of the disease

This study sought to learn the level of awareness that hypertensive patients have about their health problem. This is because one of the riskiest aspects of hypertension is that an individual may not know that he or she has it. For most patients, high blood pressure is found when visiting a healthcare provider, having it checked elsewhere or seeing a physician for an unrelated problem.

The CCCD study found that, among the 246 individuals discovered to have hypertension in the Kamalapur field site, 86.2% of them were unaware of having this health problem/illness. Out of 140 cases of hypertension found in the Matlab sample, 92.7% of individuals were unaware of having hypertension. They learned of the fact when the icddr,b research team visited their households and measured their blood pressure. Among those who were already aware of being hypertensive, 49.6% learned of it from MBBS doctors and 28.7% from pharmacists.

Care-seeking behaviours of participants

The study also explored the care-seeking behaviour of hypertensive patients. Findings revealed that, among the hypertensive patients, only 51.2% in Kamalapur and 58.6% in Matlab sought treatment after learning that they had this health problem.

The treatment sought was higher among the female patients compared to males in both in Kamalapur and Matlab.

Researchers looked into the kind of health service providers that respondents visited for treatment. They found that, in Matlab 47.6% patients went to village doctors during the last year of data collection, and only 3.7% went to MBBS doctors at the government healthcare facilities. Even in the urban settings, only 1.6% of patients went to MBBS doctors at the government facilities. On the contrary, 19.8% in Kamalapur and 23.2% in Matlab visited MBBS doctors at their private chambers.

Even the pharmacies were found to be quite popular among the respondents in both the urban and rural settings. In Kamalapur, 37.3% visited pharmacies for treatment and, in Matlab, 32.9% visited them. Some 9.5% patients visited a specialised hospital from Kamalapur and 1.2% patients did so from Matlab.

The results showed that prevalence of hypertension, patients' lack of knowledge about the disease and the care-seeking behaviour of hypertensive patients point to the need for a focused approach to high blood pressure in both rural and urban areas of Bangladesh.

Prevention of hypertension at the primary level, as well as detection, treatment and control of this condition should receive high priority. Therefore, community-based awareness-raising and hypertension control programmes are essential to address the problem.

CCCD Technical Advisory Group Meets



The Centre for Control of Chronic Diseases (CCCD) held a meeting of its Technical Advisory Group on 5 December 2011 with the participation of high-profile chronic disease experts in Bangladesh, NGOs working with non-communicable diseases (NCDs) and donor agencies. National Professor Brigadier (Retd.) Abdul Malik, former health adviser for the Government of Bangladesh and secretary general of the National Heart Foundation in Dhaka, chaired the meeting, held at the Dhaka Spectra Convention Centre. Dr. Arun Bhadra Thapa, acting World Health Organization representative to Bangladesh, attended the meeting as special guest.

CCCD Director Professor Louis Wilhelmus Niessen opened the meeting with the CCCD's vision for "lifetime health through the promotion of a healthy lifestyle and the

prevention and control of chronic diseases." Dr. Dewan Shamsul Alam, head of the Chronic Non-communicable Disease Unit, CCCD, focused on the progress of different chronic disease studies conducted by the centre.

In his presentation, Dr. Alam not only shared with the participants CCCD's ongoing studies, but also discussed some recent national findings on hypertension, diabetes, chronic obstructive pulmonary diseases (COPD), nutrition, tobacco use and the relationship between chronic disease and poverty.

Dr. M. Mostafa Zaman, national professional officer (NCDs) of WHO Bangladesh, explained the methodology behind and findings of the Non-Communicable Disease Risk Factor Survey Bangladesh 2010. The Directorate General of Health Services, under the Ministry of

Health and Family Welfare, designated the Bangladesh Society of Medicine as the implementing agency for the survey, and WHO provided extensive technical assistance.

This cross-sectional study surveyed 9,275 Bangladeshis, 4,312 men and 4,963 women with the mean age of 42.4 years. It focused on different risk factors and found that 98.7% of respondents have at least one risk factor, 77% have at least two and 28.3% have three risk factors or more.

Also during the Technical Advisory Group meeting, Professor Anwar Islam, adjunct scientist of icddr, highlighted CCCD's six-month education programme, Certificate in Advanced Research Methods (CARM). The overall goal of this programme is to develop a critical mass of MPH graduates with advanced knowledge and expertise in chronic diseases, and the skills to design and carry out research in this area.

Dr. Thapa of WHO Bangladesh provided insight into the UN General Assembly meeting held in September 2011, noting a clear consensus and position on NCDs as a priority for health development. He cited the examples of some successful health-related ventures in Bangladesh, in collaboration with WHO, including the Tobacco Control Act and national Hepatitis-B immunization campaign, to show that WHO is working for evidence-based

advocacy and for a higher level of commitment among key policymakers and non-health sectors.

Meeting Chair Prof. Brig. (Retd.) Malik said that, although the commitment is there, implementation is equally as important. Identifying multiple risk factors and multiple problems for chronic diseases, he called for a multi-sectoral approach to fighting NCDs.

Meeting participants engaged in an open discussion session facilitated by Prof. Niessen. They stressed the importance of creating awareness among the population and of providing more emphasis on primary prevention of chronic diseases. Participants made important recommendations and suggestions and expressed their interest in working together to reduce the

burden of chronic disease in the country. Suggestions included:

- Taking into account the alarming trend of cancer in Bangladesh, CCCD should offer programmes on cancer.
- Develop a plan to look at the risk factors of different NCDs and decide which ones require more focus.
- Place more emphasis on the primary prevention of chronic diseases and monitor them.
- Scale up information gathered from the findings of different studies.
- Form a government partnership to make the programme effective.
- Learn how to prevent the risk factors and take initiatives for public awareness and motivational programmes.
- Set up an intervention centre

to increase public awareness.

- Invite findings from other organisations to provide a comprehensive context.
- Other than the traditional chronic diseases, uncommon chronic diseases, such as injury, mental health and arsenic ingestion with drinking water should be included in the programme.
- Rename the Centre as the International Centre for Control of Chronic Diseases.

Thanking all participants for sharing their views and suggestions, Prof. Malik called on everyone to work together. He also insisted on involvement by policymakers, government, civil society, school teachers, religious leaders, press and the media in a social movement to include primary healthcare and preventive information in school curriculum.

Chronic Disease Health Corner at *Boishakhi Mela*

The Centre for Control of Chronic Diseases (CCCD) participated in icddr,b's celebration of *Boishakhi Mela* (Bengali New Year) by hosting a Chronic Disease Health Corner at the two-day fair held on the Mohakhali campus on 16-17 April.

The Health Corner provided services to interested icddr,b staff free-of-charge. CCCD team members measured the participants' blood pressure and blood glucose levels and calculated body mass index (BMI) with the measurement of height and weight. Participants filled out a



short questionnaire about family history of chronic disease to create a complete picture of risk factors for non-communicable diseases

(NCDs). Staff appreciated this new initiative by CCCD to benefit their health and increase awareness about NCDs.

icddr,b Celebrates World Physical Activity Day



The Centre for Control of Chronic Diseases (CCCD) celebrated World Physical Activity Day 2012 on 5 April with a public awareness rally, football match, and relay races in downtown Dhaka. This year, the Diabetic Association of Bangladesh also joined icddr,b to highlight the growing problem of chronic diseases in the country. World Physical Activity Day was introduced in 2002 by the Brazilian organisation Agita Mundo, a global physical activity promotion network.

According to the World Health Organization (WHO), physical inactivity is the fourth leading risk factor for global mortality, causing some 3.2 million deaths globally. In line with WHO recommendations, CCCD researchers regard it as essential to promote the importance of exercise for the population's health. A recent icddr,b study suggests that 25% of Bangladesh's rural population and 44% of its urban population get insufficient physical activity.

Physical activity is essential for the prevention of chronic diseases, such as diabetes and cardiovascular diseases, and one of the major ways of reducing that burden. Regular, moderate-intensity exercise, such as walking or cycling or participating in sports, has significant health benefits. It can reduce the risk of colon and breast cancer, depression and hip or vertebral fracture, as well as help control weight.

Daily physical activity should be practiced at different intensities and time depending on age: at least 60 minutes for children and adolescents and at least 30 minutes for adults age 18 and above. To spotlight the benefits of physical activity, CCCD kicked off its event with a public rally and concluded it with a staff football match and a relay race held in conjunction with the icddr,b Staff Welfare Association. Participants from icddr,b took an oath to promote good health practices and to include physical activity in their daily lives.

“So often we in the medical profession do not practice what we preach,” explained CCCD Director Prof. Louis W. Niessen, who captained the winning football team. “The activities of World Physical Activity Day are a great opportunity for us to show that we need to start being active in order to take good care of our health.”



Chronic Disease: Risk-attributable Burden and Cost of Prevention in Bangladesh

According to World Health Organization (WHO) reports, it is well established that non-communicable diseases (NCDs) are the leading cause of death in the world, responsible for 63% of the 57 million deaths that occurred in 2008 (WHO *Global Status Report on NCDs 2010*). The majority of these deaths—36 million—were attributed to cardiovascular diseases (CVD), diabetes, cancers and chronic respiratory diseases. Low- and lower-middle-income countries have the highest proportion of deaths under 60 years from NCDs. Common, preventable risk factors underlie most NCDs. These risk factors are a leading cause of the death and disability burden in nearly all countries, regardless of economic development.

In low-income settings worldwide, information about chronic disease burden is scarce, despite the fact that chronic disease epidemics result in a heightened demand for healthcare. Resources for NCD are also limited in any setting. The most economically viable solutions for disease control are through primary prevention, i.e., reductions of NCD risk factor levels that will lead to a reduced disease incidence. Many risk factors for NCD are modifiable, and reduction of major risk factors could lead to a reduction in disease incidence of up to 50%.

To address NCD risk factors, information about the risk factors' epidemiology and distributions in the country are required. Likewise, cost estimates

of primary prevention efforts are important and provide a key step to mobilise local and international political and financial support. There are strong economic arguments to address the NCD burden in developing countries where a sizable burden occurs in younger, working-age populations, which reduces labour productivity and leads to negative economic impacts for households.

In Bangladesh, research on the economics of NCD has been largely lacking. Several efforts to estimate the burden of risk factors in the Bangladeshi population have been undertaken. In 2002, a stepwise approach to surveillance survey (STEPS) conducted by WHO suggested that preventable risk factors, including tobacco use, unhealthy diets, physical inactivity, and alcohol consumption, are becoming an increasing problem in the country.

A separate survey using the STEPS methodology in the sub-district of Matlab in 2005 cast further light on the characteristics of households and individuals that were likely to have NCD risk factors. The results showed that there were high levels of risk factors and that their distribution across characteristics such as age, sex and socioeconomic status were varying.

Currently in Bangladesh, there are efforts to adapt existing health services to address the NCD burden. As a comprehensive approach to addressing risk factors, though, these efforts

focus on information gathering and ad hoc intervention programs with passive case finding. A group of researchers from Centre for Control of Chronic Diseases (CCCCD) and the Johns Hopkins Bloomberg School of Public Health have conducted this review. It provides some initial results from ongoing work focused on accessing multiple sources of information within Bangladesh to estimate the epidemiologic burden and the costs of NCD risk factor intervention strategies.

Estimating the risk factor burden

To estimate the risk factor burden, the researchers used the epidemiologic concept of population-attributable fraction (PAF) to prioritise specific risk factors in prevention and control programmes.

The risk factors chosen were hypertension, elevated cholesterol, smoking, body mass index (BMI) and inactivity. On the disease side, five NCDs that are prevalent in Bangladesh and associated with the risk factors were selected for the analysis. These included two forms of CVD, including myocardial infarction (MI) and stroke; chronic obstructive pulmonary disorder (COPD); lung cancer; and diabetes mellitus (DM).

The results showed that, for both sexes, the largest reduction in disease comes from addressing the risk factors associated with stroke. For men, there is also a high level of COPD and lung cancer that is preventable, and significant

proportions of DM and MI are also preventable. In women, the amount of preventable MI is higher than that for men, and the levels of COPD and lung cancer are quite a bit lower.

Because smoking is the sole factor associated with COPD and lung cancer, it was found that the higher prevalence of smoking in men is what leads to the higher preventable levels. For MI, hypertension plays a major role for both sexes, followed by smoking for men and inactivity for women. Stroke shows similar trends, with an even greater contribution from inactivity and, especially for women, elevated BMI. The major risk factor contributions for DM result from hypertension, elevated BMI and inactivity for both sexes.

Overall, hypertension, smoking and inactivity contributed the most as risk factors. Elevated cholesterol, alcohol consumption and higher BMI showed less impact on the selected diseases. These results show that, especially for men, known risk factors contribute to large proportions of disease occurrence. This is also true for women in the case of MI and stroke. The amount of available evidence on NCD is limited for Bangladesh.

Calculations show that some risk factors are more important than others and that MI and stroke occurrence in both sexes, as well as smoking-related diseases in men, can be greatly reduced by risk factor control.

Cost of risk factor prevention strategies

A costing exercise for risk factor prevention strategies in Bangladesh was also conducted in this review. Developing a generic framework for costing, based on WHO methods, the researchers used a country-specific validation process to obtain cost estimates. They divided costs into two broad categories: patient costs, which include the unit prices of resources; and programme costs, which include administrative, education, and training costs, among others.

The costing took into account estimates for preventive interventions that specifically addressed elevated blood pressure and cholesterol. These include diagnostic testing and first- and second-line medications, such as statins, diuretics and beta-blockers, for lowering cholesterol and blood pressure. Costing components addressed additional risk factors indirectly through programmatic costs established at the national, divisional, district and community levels.

To capture all of the appropriate cost drivers, the survey consisted of three types of questions: risk factor epidemiology, economic costs of the individual-based interventions and questions on the functioning and size of CVD prevention programmes.

In Bangladesh, the validated estimate rose 28% during the country validation procedure to the final estimate of US\$3.95 per capita. This estimate is around 26% of the total expenditure on health in the country and 79% of the government

expenditure on health. Relative to the average cost of prevention for the Southeast Asia region, the cost for prevention in Bangladesh represents a relatively affordable proposition.

For determining cost of prevention, the researchers used information only from the public sector. So these cost estimates only represent a minimum of what is needed. Adding information for the private sector would provide a fuller picture of the costing landscape and, predictably, would increase the total prevention cost by a considerable amount.

The costing results show that, from a financing perspective, meeting the needs of risk factor prevention requires an increase in resources from government, private sector and external aid organisations. Further study on averted cost of illness and economic impact should also be conducted for conclusions about the cost effectiveness of these programs.

The work that has been done for NCD in Bangladesh is beginning to shed new light on the scale of the problem. The country has inequalities in disease and risk factor distribution and health-seeking behavior between urban and rural populations and between groups of rich and poor. Tackling this issue is vital in order to continue the fight against poverty in the country.

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