

Economic development by reducing the burden of cardiovascular disease in South Asia

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ABSTRACT

The countries of South Asia have been afflicted with poverty and are under tremendous economic strain. The high prevalence of cardiovascular disease (CVD) due to urbanization and adoption of unhealthy life style is putting further stress on the economy of these countries. The projected cost of CVD in terms of lost GDP by 2015 could be 31 billion US dollars in Pakistan and 237 billion dollars in India if appropriate measures are not adopted to decrease the burden of these diseases. Major risk factors associated with CVD are fortunately modifiable such as tobacco use, alcohol use, hypertension, obesity, high cholesterol, high glucose, low intake of fruits and vegetables and physical inactivity. By adopting policies for control of tobacco use, alcohol use, easy availability of health-promoting foods, provision of opportunities for engaging in physical activity, control of pollution, dissemination of health promotion messages through media and school curricula and introduction of cost-effective screening programs the burden of CVD could be reduced in this region, thereby having a positive impact on the economy of South Asian countries.

KEY WORDS: Cardiovascular disease; Disability-adjusted-life year, Economic losses, South Asia.

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INTRODUCTION

Poverty adds to burden of disease in a country and increased disease burden further adds to poverty. The only way to break this vicious circle in less affluent countries is to reduce the burden of most common diseases in that region. Burden of a disease in a country or region is usually quantified in the form of disability-adjusted life-years (DALYs) which provide an estimate of both mortality and

morbidity due to that disease. They take into account not only the potential years of life lost due to premature death but also years of healthy life lost due to being in a state of disability.¹

Epidemic of cardiovascular disease in South Asia:

Recent research has indicated that there is an epidemic of cardiovascular disease (CVD) in the developing world, especially in South Asia (India, Pakistan, Bangladesh, Nepal, Sri Lanka, Maldives).² WHO reported that in 2001, 86% of DALYs lost because of CVD world-wide happened to be in the developing countries. Nearly one quarter of the world population (1.5 billion) resides in South Asia where deaths due to CVD (coronary artery disease, hypertension and stroke) range from 20.1% (Sri Lanka) to 31.7% (India) of all deaths.³ It has been estimated that by the year 2020, CVD will be the largest cause of death and disability in India.⁴ Similarly, in Pakistan, burden of CVD (12% of all-cause mortality) appears to be on the rise due to its aging population and increased urbanization.⁵

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After the age of 45 years, every third Pakistani is suffering from hypertension. Bangladesh, Sri Lanka and Nepal show a similar trend. For example, data on the basis of admission in government hospitals in Sri Lanka reveal 18% increase in deaths due to CVD.⁶ In Nepal, where percentage of smokers is among the highest in the world, burden of CVD is not precisely known, however, prevalence values of coronary heart disease (CHD) and hypertension in Eastern Nepal have been reported to be 5.7%, and 22.7% respectively.^{7,8} According to another study, the prevalence of CHD has been estimated to be about 5% of adult population in Kathmandu.⁹ Situation appears to be more alarming in Bangladesh, where there has been an increase of 3500% in the prevalence of CVD since 1990.¹⁰ It has been estimated that percentage of mortality by CVD in South East Asia region in 2008 was 25% which is approximately 80% higher than the mortality in rest of the world.¹¹

Impact of CVD on economy:

All these reports point towards an emerging epidemic of CVD in this region. Since this disease occurs primarily in the productive mid-life period, it seriously compromises the productivity of the workforce, thereby adversely affects the economic development of the country. According to WHO, India has lost in 2005 approximately 9 billion US dollars in the national income due to mortality from CAD, stroke and diabetes mellitus. These losses may go up to 237 billion dollars by 2015 if appropriate measures are not adopted to reduce the burden of CVD in that country.⁴

There are no authentic studies reporting CVD related DALYs in South Asia. However, WHO estimates provide some reliable information about the burden of CVD in terms of deaths and DALYs in this region (Table-I).¹²⁻¹⁷ For example, 12.39% of total DALYs in Pakistan in 2004 were because of CVD.¹⁶ Similarly in Bangladesh, Nepal

and Sri Lanka, the DALYs related to CVD have been estimated to be between 9.36-13.7% of the total DALYs.^{12-14,17} Economic losses due to these high percentages of DALYs run into billions of US dollars. This has had a significant negative impact on the national economy of these countries. For example, the projected cost of CVD in terms of lost GDP in 2015 in Bangladesh will be 1.1% and 17% in India.¹¹ A recent WHO report indicates that in India 25% of the families with a member with CVD incur an expenditure which is mostly beyond their means and 10% are driven to poverty.¹¹ It is estimated that Pakistan has lost in 2005 one billion dollars from premature deaths due to heart disease, stroke and diabetes. These losses are expected to accumulate up to 31 billion dollars by 2015 because of premature deaths due to these diseases.¹⁸

Risk factor for CVD:

Eight major risk factors responsible for this rapid increase in CVD world-wide include: tobacco use, alcohol use, hypertension, obesity, high cholesterol, high blood glucose, low fruit and vegetable intake and physical inactivity.¹⁹ It has been estimated that 84% of global burden of disease caused by these risk factors occurs in low and middle income countries.¹⁹ In addition to these 8 risk factors, populations in South Asia are more prone to developing CVD due to genetic make-up, malnutrition, increased exposure to pollution and lack of awareness about determinants of health and poverty.

What needs to be done?

While many developed countries have succeeded in bringing down the incidence of CVD, the developing countries, especially in South Asia have not risen well to the challenge. According to Dr. Brundtland, Director General of WHO "Prevention is the key to lowering the global burden of heart attacks and stroke".²⁰ Fortunately, many of the risk factors associated with CVD are modifiable, therefore, a

Table-I: Burden of cardiovascular disease (CVD) in terms of estimated deaths and DALYs in South Asia, 2008.

Country	Percentage of deaths (%)	Percentage of total DALYs (%)	References
Bangladesh	27.5*	13.42	12
India	23.5*	12.4	13
Maldives	27.0*	9.36	14
Nepal	24.5*	13.2	15
Pakistan	22.0**	12.39	16
Sri Lanka	29.5*	13.7	17

*Source: Global Health Observatory, World Health Organization, 2011 [Reference 11]

**Source: Facing the Facts. The impact of chronic disease in Pakistan. World Health Organization [Reference 18].

concerted effort on part of the government, health professionals, scientific community and society at large is needed to stem this epidemic by focusing on prevention of the disease. Policies for control of tobacco use, easy availability of health-promoting foods, increased opportunities for engaging in physical activity, enforcement of regulations for control of pollution, dissemination of health promotion messages through media, introduction of cost-effective screening programs (health check-ups) and subsistence to the most vulnerable sections of the society are some of the critical measures needed to reduce the burden of CVD in South Asia. In addition, promotion of cardiovascular health should be part of national media strategy. Cardiovascular health education should be made part of the curriculum in schools as well as at places of religious education. Cost-effective diagnostic and management algorithms for management of CVD should be made available to the public at large.²¹ Multipronged approach would be needed to address this issue of reduction in the burden of CVD with crucial involvement of both public and private sectors, thereby producing a positive impact on economic growth and development.

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