Diabetes in South-East Asia: burden, gaps, challenges and ways forward

Diabetes is not new to South-East Asia, since this condition was first described by Indian and Egyptian physicians three and a half thousand years ago. Diabetes is a serious, chronic disease characterized by chronic elevation of blood glucose and disturbance of carbohydrate, fat and protein metabolism that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Raised blood glucose, a common effect of uncontrolled diabetes, may, over time, lead to serious damage to the heart, blood vessels, eyes, kidneys and nerves. Diabetes is therefore not only a disease in itself but also an intermediate stage for many other serious conditions.

Diabetes appears to have been relatively rare until the second half of the 20th century, when it started to emerge as an important public health problem in high-income countries, with a subsequent accelerated rise in low- and middle-income countries in the past few decades. It is now one of the leading causes of blindness, heart attacks, strokes, renal failure and lower limb amputations worldwide.

Ten years ago, the United Nations General Assembly recognized diabetes as a health issue affecting socioeconomic development. As a lifelong illness that often requires long-term medication and treatment, diabetes can also incur catastrophic health expenditure at the individual and family level, particularly among people without financial health protection.

Diabetes was one of the four priority noncommunicable diseases (NCDs) targeted by world leaders in the 2011 Political Declaration on the Prevention and Control of Non-communicable Diseases and the Sustainable Development Goals (SDGs) 2016–2030. On 7 April each year, World Health Day highlights a significant public health problem, together with actions that individuals, governments and civil society can take to reduce its deleterious impact on health. World Health Day 2016 is an opportunity to advocate for scaling up prevention, strengthening treatment and care, and enhancing surveillance of diabetes. On World Health Day this year, the World Health Organization (WHO) is launching the Global report on diabetes, which provides some new data on the burden of diabetes, the current state of knowledge on prevention and management, and recommendations for reducing the risk of diabetes at population and personal level, for improving the outcomes of diabetes and for tracking the results.

THE BURDEN

The number of adults in the world with diabetes has increased almost four times in less than four decades, from 108 million in 1980 to 422 million in 2014. In the WHO South-East Asia Region, this number has increased from 17 million in 1980 to 96 million in 2014. Apart from demographic change, most of the rise has been fuelled by a parallel rise in the prevalence of overweight and obesity, the major risk factor for diabetes. Lack of physical activity is also a major contributor to the rise of diabetes in the region.

Almost 9% of the adult population of the WHO South-East Asia Region has diabetes, which is the second highest prevalence after the Eastern Mediterranean Region. The prevalence has more than doubled since 1980. In 2012, close to 1 million adults in the South-East Asia Region died of the consequences of high blood glucose – this includes deaths directly due to diabetes (e.g. diabetic coma), as well as deaths from diabetes-attributable renal failure, tuberculosis and cardiovascular disease. About one in 10 premature adult deaths in the region are a result of the consequences of high blood glucose; the equivalent number in the European Region is one in 20. Population-based surveys of diabetes are becoming more frequent in countries of the South-East Asia Region, but have not yet become an integral part of routine surveillance of NCDs. Only 60% of countries have recently assessed the prevalence of diabetes. Nevertheless, data available from studies conducted in some countries have documented a rapid increase in the prevalence of diabetes in some areas. The drivers of the diabetes epidemic in the South-East Asia Region are similar to those in other parts of the world – economic development, industrialization, urbanization and consequent changes in diet and physical activity. However, the populations of South-East Asia have the misfortune to be more genetically susceptible to these diabetogenic environmental factors, which results in lower diabetes thresholds for risk factors such as age, overweight and body fat distribution.

In South-East Asian individuals, the average age of diabetes...
onset seems to be a decade earlier than for people of European origin, at an age when people are at their most economically productive and have more time ahead of them to develop costly and debilitating complications.10

**CURRENT RESPONSE: GAPS AND CHALLENGES**

This special World Health Day issue of the *WHO South-East Asia Journal of Public Health* is dedicated to highlighting and exploring the gaps, challenges and ways forward in diabetes prevention and control in the region. For this collection of Perspectives in this issue, experts were invited to analyse a range of aspects of the diabetes epidemic in the WHO Region of South-East Asia from different viewpoints and geographical locations. Where applicable, authors were encouraged to share lessons learnt and their potential for application to other countries of the region. As noted by Mohan et al. in the first Perspective of this issue,11 benefits can accrue when lessons and good practices in diabetes prevention learnt in one country are applied to another. The results of the Country Capacity Survey of 2015 give an insight into the region’s immediate priorities in addressing diabetes.7 Currently, only about seven out of 11 countries in the South-East Asia Region have operational policies for diabetes, either stand-alone or integrated with other NCD policies. Diabetes has to be included in the national plan for the control of NCDs. Activities in Nepal, Bhutan and Myanmar provide useful insights. As described in the Perspective by Upseti et al. for Nepal, the challenges to, and gaps to date in the delivery of, diagnostic and care services for diabetes have been substantial.12 For example, early diagnosis and referral services are not available at all service levels, owing to lack of resources such as trained health professionals, NCD-related drugs and diagnostics. In turn, this leads to late diagnoses requiring tertiary-level care. In response, Nepal has recently given heightened prominence through a national multisectoral action plan for prevention and control of NCDs. With high-level political commitment, this plan aims to strengthen and orient health systems to address the prevention and control of NCDs and underlying social determinants, through people-centred primary health care and universal health coverage (UHC). The WHO Package of Essential Noncommunicable (PEN) disease interventions for primary health care in low-resource settings13 will be introduced, providing an opportunity to strengthen health-care services via primary health-care facilities.

Bhutan was one of the first countries to pilot the WHO PEN and is expanding the intervention to all health-care facilities – one of several national activities to prevent and control NCDs. The Diabetes Prevention and Care Programme has been operational within the Ministry of Health since 2005, with the aim of preventing diabetes in the population, minimizing complications and improving the quality of life among those living with diabetes. However, as described in the Perspective by Dorji et al.,13 despite a government-administered free health-care system and a comprehensive screening and management programme, challenges encountered have included: inadequate record-keeping resulting in losses to follow-up; suboptimal levels of glycaemic control; lack of monitoring of standards of clinical care; and limited data on outcomes. In Myanmar, the WHO PEN has been piloted in Yangon Region and national expansion awaits ministerial approval.15 The Myanmar Diabetes Association has proposed a care model to bridge the gaps between rural and urban areas and strengthen secondary and tertiary care. Implementation will require policy development for essential drugs and equipment, capacity-strengthening of health-care workers, and appropriate referral and health-information systems.

Member States have committed to “halt the rise in diabetes and obesity” by 2025 as a part of the Global action plan for the prevention and control of noncommunicable diseases 2013–2020 that has an overall target to reduce premature mortality by NCDs by 25%.16 This is a daunting task.17 Fewer than 10% of countries in the region have an operational policy to reduce the major risk factor for diabetes – obesity. In their Perspective, Praveen and Tandon draw attention to the high and increasing burden of generalized obesity among Indian children and adolescents and warn of the likely consequences in terms of type 2 diabetes in children and adults.18 Evidence on societal interventions to reduce the population risk of diabetes is still evolving and countries are still undergoing a learning process about what works. While stand-alone interventions are unlikely to dent the thick armour of obesogenic and diabetogenic forces, the effects of combinations of several interventions provide some basis for optimism.

There is no doubt that appropriate treatment of people with diabetes reduces the risk of complications and early death. Interventions to improve treatment will be the first to show benefit. But treatment is not simply the regulation of blood glucose levels. It includes control of concomitant risk factors for cardiovascular disease, education and support for self-care, and screening and treatment of microvascular complications. As a lifelong and progressive illness, diabetes requires continued care by a multifaceted health-care team, starting in primary health care, with defined referral pathways to secondary and tertiary care for complications. In their Perspective, Wijeyaratne et al. report on the National Initiative to Reinforce and Organize General Diabetes Care in Sri Lanka (NIROGI Lanka) project.19 A decade ago, there was a gap in the health workforce of providers trained to accommodate the needs of the rising numbers of patients with diabetes. The NIROGI Lanka project has targeted patients in lower socioeconomic groups through capacity-building activities for allied health professionals covering a range of diabetes-related needs. Central to the project was upskilling a cohort of nurses to become “diabetes educator nursing officers” (DENOIs). The DENOs were trained to take a lead role in outpatient clinics, in patient registration, anthropometric measurements and education on healthy lifestyle, smoking cessation, adherence to treatment, complying with follow-up appointments, insulin self-injection, and self-monitoring of blood glucose for those with access to glucometers. They have become an important human resource in providing quality care to individuals with diabetes, under the supervision of consultants, predominantly in the outpatient department, and together with community education and empowerment.
The main priority is strengthening capacity in primary care to diagnose and manage diabetes. Although diabetes-management guidelines are available in most countries in South-East Asia, essential medicines and tests are generally not available in primary care facilities. Furthermore, the availability of tests and therapeutic interventions for chronic complications at the secondary care level is poor in the public health-care sector. In this region, as in others, there is often much enthusiasm for large-scale early-detection programmes for diabetes, but these are not encouraged until there is capacity in primary care to accommodate the subsequent increased number of diagnosed patients.

WAYS FORWARD

With a focus on prevention, as detailed in the Perspective by Somasundaram and Kalupahana,20 countries of South-East Asia are encouraged to employ comprehensive strategies that include awareness-raising programmes, incentives for producing and buying healthier food, building and organizing cities to encourage physical activity, and fiscal interventions for discouraging the production and use of unhealthy commodities. While long-term structural changes and building collective capacity are essential to mainstreaming prevention, Somasundaram and Kalupahana note that some initiatives have been considered too complex in requiring levels of intersectoral governance between multiple departments and ministries that are difficult to achieve. Taking the example of Sri Lanka, their Perspective suggests “best buys” that can be implemented with the fewest structural changes, thereby reducing barriers to implementation.

As a lifelong and progressive illness, diabetes requires continued care by a multifaceted health-care team, starting in primary health care with defined referral pathways to secondary and tertiary care for complications. The main priority is strengthening capacity in primary care to diagnose and manage diabetes. Strengthening vital registration and cause-of-death certification, along with periodic population-based surveys of risk factors, including blood glucose levels, can help to monitor the trends.

Finally, the need to combat the negative impact of diabetes on the economic growth of individuals and nations, with sound financing approaches, is critical. Member States of the South-East Asia Region are at various stages of improving the equity and efficiency of their health systems and reviewing health financing as the region moves forward on UHC. In their Perspective on diabetes prevention and care in the context of UHC, Patcharanarumol et al. synthesize key points from the Thai experience that may be applicable to other countries of the region.21 Although the UHC strategies of the countries in the region are diverse, Patcharanarumol et al. underscore that inclusion of services for NCDs, including diabetes, is essential. They urge greater political commitment for investing more in health services and emphasize that national action plans for prevention and control of diabetes and other NCDs should be in line with strategies for health-system strengthening.

Tackling diabetes is not easy. It may be true that diabetes is an incurable disease. However, it is largely preventable and can be detected early and controlled. We need a comprehensive framework to make our societies less diabetogenic, make our screening systems more patient-friendly, make our behaviour-change interventions more powerful and sustainable, and make our health-care systems more effective to control diabetes and its complications. Efforts to prevent and treat diabetes will be pivotal to achieving the global Sustainable Development Goal target of reducing premature mortality from NCDs by one third by 2030.22 The whole of society has a role to play, including governments, employers, educators, the private sector, civil society – and individuals themselves. By working together in South-East Asia, we can halt the rise of diabetes.

REFERENCES


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