

Interpretation of the Diabetes Prevention and Control Action of the Healthy China Initiative 2019–2030

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Summary

In the past 30 years, the prevalence of diabetes in China has been increasing, but the awareness rate, treatment rate and control rate of diabetes are relatively low, and the death rate, disability rate, disease burden of diabetes and its complications are constantly increasing, which brings heavy burden to individuals, families and social economy. The Healthy China Initiative (2019–2030) is a roadmap to a healthy China and an innovative public policy system project. The Diabetes Prevention and Control Action is one of the four chronic and noncommunicable diseases prevention and control actions in the Healthy China Initiative (2019–2030).

Based on the background, basic principles and key contents of diabetes prevention and control, this paper interpreted the diabetes prevention and control action from five aspects, that is, healthy lifestyle is the foundation, which emphasized that individuals are the first responsibility for their health, and advocates reducing the risk of diabetes by practicing healthy diet, increasing physical activity and maintaining a healthy weight; Early detection and early intervention are key links, which emphasized to pay attention to individual blood glucose level, high risk individuals regularly test blood glucose; Standardize health management is the priority, which emphasized to strengthen the implementation of graded diagnosis and treatment standards, and medical institutions provide guidance on self-management of health for patients with diabetes; The improvement of capacity in primary level is the guarantee, where emphasis is placed on improving the ability of medical personnel to screen, intervention and standardize diagnosis and treatment; And innovative health service models are the key measures which emphasized the use of information technology to improve the efficiency of health management.

As industrialization, urbanization, aging population progress and lifestyle change, the main cause of death and disease burden in Chinese residents becomes chronic and noncommunicable diseases (NCDs). Currently, cardiovascular disease, cancer, chronic respiratory disease, diabetes, and other NCDs account for 88% of all deaths and more than 70% of the total burden of disease. China has the world's largest diabetes epidemic, which continues to increase as the prevalence of diabetes in China was reported to be 0.67% in 1980 and 10.9% (95% CI*, 10.4%–11.5%) in the latest published nationwide estimate in 2013—an increase of 15 times in 30 years with an average annual increase of 9.1% (1–4). Based on the adult population of 1.09 billion and a prevalence of 10.9%, China has 109 million (113–125 million) diabetics in 2013. The International Diabetes Federation (IDF) reported that the figure reached 114.4 million (104.4–146.3 million) in 2017 and predicted that it would reach 119.8 million (86.3–149.7 million) by 2045 (5).

Complications resulting from improperly controlled diabetes can involve multiple organs such as blood vessels, eyes, kidneys, and feet, and can cause increases in disability rates, mortality, and burden of disease [also known as the disability adjusted life year (DALY)]. The prevention, diagnosis, and treatment of diabetes in China have not been sufficient in several aspects. First, the results of national surveillance of diabetic patients in China in 2013 showed that the patient awareness rate, treatment rate, and blood glucose control rate in this year were 36.5% (95% CI: 34.3%–38.6%), 32.2% (95% CI: 30.1%–34.2%), and 49.2% (95% CI: 46.9%–51.5%), respectively (4,6). Second, people with diabetes have an increased risk of death, mortality, and disease burden. Compared with nondiabetics, Chinese diabetics have a risk of death from all causes of 2.00 (95% CI: 1.93–2.08), from chronic kidney disease of 13.10 (95% CI: 10.45–16.42), from ischemic heart disease, stroke, chronic

* CI=Confidence Interval.

hepatitis, and infection is between 1.8–2.4 (7). Compared with 1990, diabetes-related mortality in China increased by 63.5% in 2016 and DALYs of diabetes increased by 95%. The ranking of DALYs attributed to diabetes rose from 22 in 1990 to 6 in 2016. The top five causes of diabetes disease burden are chronic kidney disease, peripheral artery disease, ischemic heart disease, stroke, and tuberculosis (7–9). Thirdly, China has a large number of people with high risk factors for diabetes. Type 2 diabetes is the most common type in China, and pre-diabetic and obesity patients are at the highest risk of developing this type of diabetes. In 2013, the prevalence of pre-diabetes was 35.7% (95% CI: 34.1%–37.4%), and the prevalence of overweight and obesity were 32.4% and 14.1%, respectively, which indicates that 356.4 million people are pre-diabetic and 506.9 million people are overweight and obesity in China (4,6). Without adequate prevention measures, this large population could develop diabetes.

The current state of diabetes control in China may be due to the capability of government departments, society, and individuals to implement comprehensive prevention and control measures for diabetes and other health promotion not being fully formed and that existing strategies have not been well implemented.

Diabetes can be prevented and controlled. Lifestyle interventions for high-risk populations can prevent or delay diabetes and its complications (10–11). The WHO global action plan for prevention and control NCDs 2013–2020 proposed a goal of a 25% relative reduction in risk of premature mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases by 2025 (12). The Chinese government attaches great importance to comprehensive NCDs prevention and control as diabetes prevention and control is included in national strategies. General-Secretary Xi Jinping gave a speech at the National Health Conference in 2016 that indicated the need for concerted attention for the prevention and control of major diseases. For NCDs, cancer, hypertension, and diabetes should be viewed as breakthrough points so that China can strengthen comprehensive prevention and control, strengthen early screening and early detection, promote early diagnosis and treatment, and transform disease treatment into health management. The Healthy China 2030 Initiative put forward goals and key indicators to be achieved by 2030. The main goals are to achieve significant increases in healthy life expectancy, effective control of major risk factors, substantial increases in the capacity of health services,

and a 30% decrease in the premature death rate of major NCDs (including diabetes) compared to 2015 (13). The Healthy China Initiative 2019–2030 (14) is a roadmap to a healthier China and an innovative public policy system project. The Diabetes Prevention and Control Action is one of the four NCDs prevention and control actions in the Healthy China Initiative. The goals of the action include the following: by 2030, the awareness rate of diabetes among residents aged 18 years and above should be at least 60%, the standard management rate of diabetes patients should reach at least 70%, and the treatment rate, control rate, and complication screening rate of diabetes should increase.

The NCDs prevention and control strategy in China is “3.3.3.1 strategy”, i.e. for three populations (general population, high-risk population, and patients), three dimensions (control risk factors, early screening, diagnosis, and management) need to be addressed using three methods (health education and health promotion, health intervention, and disease management), and creating a foundation (a healthy supportive environment). The basic principles and key contents of the Diabetes Prevention and Control Action are the embodiment of “3.3.3.1 strategy”.

First, a healthy lifestyle is the foundation. Unhealthy lifestyles are the main cause of chronic and noncommunicable diseases and an important determinant of the effect of patient management. Being overweight and obese are caused by unhealthy diets, and together with physical inactivity contribute the largest risk for diabetes and its complications. Unhealthy diets are the main reason for lower control rates for glucose and blood pressure. Therefore, the Diabetes Prevention and Control Action advocates and practices a healthy lifestyle for individuals, which emphasizes that individuals have the first responsibility for their health. It is hoped that the public can take the initiative to gain health knowledge, cultivate health cognition, and practice healthy behaviors to fundamentally prevent the occurrence of diabetes and effectively improve the quality of life of patients. It also emphasizes attention on individual glucose levels, regular glucose screening in high-risk populations, and reducing the risk of diabetes in people with pre-diabetes and overweight and obese people by diet control and scientific exercise.

Second, early detection and early intervention are key links. Practical experience from international and domestic studies have proved that the prognosis of chronic and noncommunicable diseases is closely related to early detection. The earlier the detection, the

earlier the intervention and the more effective therapy and management. Therefore, the Diabetes Prevention and Control Action highlights the importance of early detection and early intervention, and also emphasizes that individuals should pay attention to their personal glucose levels, high-risk individuals should regularly test their glucose, and patients should strengthen health management.

Third, standardizing health management is the priority. NCDs have a long course as once patients become ill, they often suffer for a lifetime. Standardized management of patients with NCDs can steadily control their condition, reduce complications, allow patients to enjoy life like healthy people, and improve their quality of life. The Diabetes Prevention and Control Action highlighted the implementation of graded diagnosis and treatment standards and medical institutions providing guidance of diet, exercise, self-monitoring blood sugar, and self-health management for patients with diabetes. The government and society should promote standardized screening of diabetes at the primary health care level.

Fourth, the improvement of capacity in primary level is guaranteed. Screening and management of diabetes and its complications mainly rely on primary health care, and the capacity of primary health care is a basic guarantee of patient management. The Diabetes Prevention and Control Action proposes to strengthen the primary level service capacity by improving the ability of screening, early interventions, standardized diagnoses, and treatment of diabetes and its complications for medical staff to delay the progress of complications and reduce the disability rate, mortality, and premature death.

Fifth, innovative health service models are the key measures. It highlighted the use of information technology to promote "internet plus public health" services and improve health management by relying on regional public health information platforms.

The Diabetes Prevention and Control Action is an important part of the Healthy China Initiative 2019–2030, which together with other actions of the Healthy China Initiative, promotes the prevention and control of diabetes and contributes to achieving the goal of a healthier China. Other actions include health knowledge action, healthy diet action, national fitness action, tobacco control action, health promotion action for students, health promotion action for the elderly.

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