

Diabetes Burden in Asia

Jen-Der Lin

Attending Physician, Internal Medicine, Chang Gung Memorial Hospital, Chang Gung University

Increased prevalence of diabetes mellitus (DM) and economic burden are noted worldwide, especially in Asian countries, during the last decade; the prevalence and economic burden are expected to increase in the near future. In 2014, 387 million people worldwide had diabetes. Additionally, DM is predicted to reach 592 million by 2035. However, 46% of DM cases are predicted to remain undiagnosed. The International Diabetes Federation (IDF) Diabetes Atlas data for 2014 revealed that the DM population in the middle east, southeast Asia, and western Pacific regions was 11.3%, 8.8%, and 7.9%, respectively. Studies reported that 60% of the world's diabetic population is from Asia. Additionally, Asian countries have undergone rapid economic development, urbanization, and transitions in nutritional status, which may further increase the type 2 DM prevalence. The IDF data for 2007 revealed that DM-related deaths comprised 6% of the total global mortality among those aged 20–79 years. Half of the DM-related mortality cases were due to cardiovascular complications. Most DM patients in this area have type 2 DM (90%). The direct economic burden due to DM among these patients include expenses due to hospitalization, medications, treatment of diabetes complications; the indirect economic burden include decline in social productivity, income loss, disability, transportation expenses for medical care. Of the Asian type 2 DM patients, 30% are estimated to have retinopathy. The prevalence of end stage renal disease among type 2 DM patients in Asia was 80% higher than that in white patients in the USA. A recent study reported the overall global prevalence of normoalbuminuria, microalbuminuria, and macroalbuminuria to be 51%, 39%, and 10%, respectively. Asian and Hispanic patients had the highest prevalence of increased urinary albumin/creatinine ratio (55%), whereas the prevalence was lowest among Caucasian patients (40.6%). Conversely, cardiovascular complications and below-knee amputations were lower among Asians. The cost of diabetes care will increase substantially when complications develop and in cases where hospital admission, operations, or insulin treatment is required. Several studies suggest that diabetes treatment in developing countries in Asia is far from optimum. In summary, diabetes care in Asian countries should include improvements in diabetes-related education. People are educated regarding risk factors for diabetes, patients are trained to manage their disease more effectively. In addition, diabetic complications are detected early, a more structured care delivery system is developed, and cardiometabolic risk factors are managed.

References

Anjana RM, Shanthi Rani CS, Deepa M, Pradeepa R, Sudha V, Divya Nair H, et al. Incidence of Diabetes and Prediabetes and Predictors of Progression Among Asian Indians: 10-Year Follow-up of the Chennai Urban Rural Epidemiology Study (CURES). Diabetes Care 2015 Apr 23. pii: dc142814.

[Epub ahead of print].

Nguyen TH, Nguyen TN, Fischer T, Ha W, Tran TV. Type 2 diabetes among Asian Americans: Prevalence and prevention. *World J Diabetes* 2015;6(4):543-7.

Shrivastava U, Misra A. Need for ethnic-specific guidelines for prevention, diagnosis, and management of type 2 diabetes in South Asians. *Diabetes Technol Ther* 2015;17(6):435-9.

Seuring T, Archangelidi O, Suhrcke M. The economic costs of type 2 diabetes: a global systematic review. *Pharmacoeconomics* 2015 Mar 19. [Epub ahead of print].

Singh K, Chandra Sekaran AM, Bhaumik S, Aisola M, Chattopadhyay K, Gamage AU, et al. Cost-effectiveness of interventions to control cardiovascular diseases and type 2 diabetes mellitus in South Asia: protocol for a systematic review. *BMJ Open* 2015;5(3):e007205.

Hu H, Sawhney M, Shi L, Duan S, Yu Y, Wu Z, Qiu G, et al. A systematic review of the direct economic burden of type 2 diabetes in china. *Diabetes Ther* 2015;6(1):7-16.

Misra A, Ramchandran A, Jayawardena R, Shrivastava U, Snehalatha C. Diabetes in South Asians. *Diabet Med* 2014;31(10):1153-62.

Kim TH1, Chun KH, Kim HJ, Han SJ, Kim DJ, Kwak J, et al. Direct medical costs for patients with type 2 diabetes and related complications: a prospective cohort study based on the Korean National Diabetes Program. *J Korean Med Sci* 2012;27(8):876-82.

Ramachandran A, Ma RC, Snehalatha C. Diabetes in Asia. *Lancet* 2010;375(9712):408-18.

Chang CH, Shau WY, Jiang YD, Li HY, Chang TJ, Sheu WH, et al. Type 2 diabetes prevalence and incidence among adults in Taiwan during 1999-2004: a national health insurance data set study. *Diabet Med* 2010;27(6):636-43.