Sir Salimullah Medical College Journal
Sir Salimullah Med Coll J 2025; 33: 132-134
Short Review
DOI: https://doi.org/10.3329/ssmcj.v33i2.88676

Bangladesh's Epidemiological Transition: A Double Burden of Disease

Md. Daharul Islam[1], Khaleda Akter[2], Md. Masudul Hasan[3], Muhammad Mahmub Hossain[3], Aminur Rahman[4]

Article information
Received: 11.10.2025
Accepted: 18.02.2026

Cite this article: Md. Daharul Islam, Khaleda Akter, Md .Masudul Hasan , Muhammad Mahmub Hossain, Aminur Rahman. Bangladesh's Epidemiological Transition: A Double Burden of Disease. Sir Salimullah Med Coll J 2025; 33(2): 132-134.

Key words:
Epidemiological Transition, Double Burden of Disease.

Abstract

Bangladesh is undergoing a complex epidemiological transition characterized by a growing burden of infectious diseases and a rapidly growing number of noncommunicable diseases (NCDs).This dual challenge has a significant impact on the country's healthcare system and public health priorities.

The Double Burden: Persistent Infectious Diseases

Despite progress in disease control, Bangladesh still faces a significant infectious disease burden.

The country has a high incidence of diarrhea, tuberculosis, dengue, and other infectious diseases.[1] Bangladesh accounts for about 3.5% of the global tuberculosis burden,[2] which is a significant challenge for public health.

Dengue has emerged as a particularly serious threat in recent years.The 2023 dengue outbreak was the worst ever in Bangladesh, with 277,801 cases and 1,705 deaths, much higher than the previous year.[3,4] The 2023 outbreak resulted in 1,705 deaths, making it the deadliest globally that year, with DENV-2 strain responsible for approximately 74% of cases.[5] In contrast to previous dengue outbreaks centered in Dhaka, about 63.4% of dengue cases in 2023 occurred outside the capital, indicating the geographic spread of the disease.[3]

Neonatal disorders and lower respiratory infections remain the top two causes of death, with other major causes including congenital defects, typhoid and paratyphoid diseases, diarrheal diseases, and drowning. Although DALYs (Disability-Adjusted Life Year) from vaccine-preventable diseases and other infectious diseases decreased substantially between 1990 and 2019, they still contribute significantly to the growing burden of disease.[1]

Rising Non-Communicable Diseases:

At the same time, non-communicable diseases have emerged as major health challenges. While

1. Professor, Department of Medicine, Sir Salimullah Medical College, Mitford, Dhaka. E-mail: islamdaharul 4@gmail.com
2. Professor, Department of Gyne & Obs,Z H Sikder Women's Medical College, Dhaka
3. Associate Professor, Department of Medicine, Sir Salimullah Medical College, Mitford, Dhaka
4. Professor, Department of Neurology, Sir Salimullah Medical College, Mitford, Dhaka.

Correspondence: Dr. Md. Daharul Islam, Professor, Department of Medicine, Sir Salimullah Medical College, Mitford, Dhaka. E-mail: islamdaharul4@gmail.com

sedentary lifestyles and unhealthy eating habits among the population are increasing the burden of non-communicable diseases.[1] cardiovascular diseases, diabetes, chronic respiratory diseases, and cancers now dominate mortality patterns.

Diabetes: As of 2025, the global diabetes burden has reached approximately 589 million adults (aged 20–79), representing a worldwide prevalence of 11.1% or about 1 in 9 adults. This epidemic is particularly severe in Bangladesh, which currently ranks 8th globally for total cases, with an estimated 13.87 million adults living with the condition—a national prevalence rate of 13.2%. Critically, high rates of undiagnosed diabetes persist both globally (43%) and in Bangladesh (43.5%), often delaying treatment until serious complications arise. Driven by rapid urbanization and aging populations, the total number of cases in Bangladesh is projected to nearly double to 22.3 million by 2045. [6 -8] Urban populations show significantly higher diabetes prevalence with odds ratio of 1.6 compared to rural areas. [6]

Hypertension: Hypertension prevalence increased from 11.0% to 12.8% to 15.3% across five-year intervals between 1995 and 2010. [9] Recent studies show prehypertension and hypertension prevalence of 30.7% and 15.9% among men and 27.2% and 22.5% among women. [6] Urban populations are more likely to have hypertension with adjusted odds ratio of 1.3. [6]

Cardiovascular diseases: Coronary artery disease is the leading cause of mortality in Bangladesh, with Bangladeshis unduly prone to develop premature onset CAD that follows a rapidly progressive course. [10] Studies indicate CVD prevalence varies significantly across populations, with substantial burden among both general and diabetic populations.

Why This Is Happening:

Several interconnected factors drive this epidemiological transition:

Demographic changes: Increasing life expectancy and an aging population create greater susceptibility to NCDs. The shift in age structure influences disease patterns significantly.

Urbanization and lifestyle changes: Rapid urbanization, sedentary lifestyles, and altered food habits through globalization, supermarket growth, and changing consumption patterns have invited multiple risk factors [6]. Urban populations show higher insufficient physical activity, obesity, hypertension, and diabetes compared to rural areas. [6]

Tobacco use: Tobacco consumption prevalence is 51.0% for any form, 26.2% for smoking, and 31.7% for smokeless tobacco. [9,11] Tobacco use is significantly higher in rural areas at 45.2% compared to urban areas at 38.8%, [6] contributing significantly to cardiovascular diseases, cancers, and respiratory illnesses.

Nutritional transition: Inadequate fruit and vegetable intake was significantly higher in urban populations at 92.1% compared to rural at 88.9% .[6] About 28.4% had higher serum cholesterol with greater propensity in urban than rural population 6. Overweight, obesity, and abdominal obesity increased with socioeconomic status. [6]

Environmental and climatic factors: Changing climate conditions, evolving vector characteristics, mixed and cross-infections, high population density, and lack of awareness contribute to major disease outbreaks. [12]

Problems for the Health System

The health system in Bangladesh is not ready to manage both types of diseases together. The system was built mainly for infectious diseases .[13] Now it needs to provide services for chronic diseases too. There are not enough doctors and nurses trained to treat diabetes and heart disease .[14] Many health centers do not have proper equipment for screening and diagnosis .[14] Patients also face financial problems. Treatment for chronic diseases is expensive and people have to pay from their own pockets. [15] Climate change is making the situation worse by displacing people and spreading diseases like tuberculosis. [16]

What Needs to Be Done

Bangladesh needs a complete plan to address both types of diseases. The government should strengthen primary health care centers.[17] More doctors and nurses need training in managing chronic diseases.[14] Screening programs for diabetes and high blood pressure should reach all communities.[13] Prevention is very important.

People need education about healthy eating, exercise, and avoiding tobacco.[18] Taxes on tobacco products should be increased.[13] Better air quality control is needed in cities. [19] The government must also continue fighting tuberculosis and other infectious diseases.[20] Community health workers can help by visiting homes and teaching families about disease prevention. [21]

Conclusion

Bangladesh is at an important point in its health journey. The country has done well in reducing infectious diseases. But new lifestyle diseases are creating serious problems. The double burden requires urgent action. The government, doctors, and communities must work together. With proper planning, enough money, and strong commitment, Bangladesh can overcome this challenge. Success will mean healthier lives for all Bangladeshi people.

Keywords : Epidemiological transition,Double burden of disease,Bangladesh,Non-communicable diseases (NCDs),Infectious diseases

References:

1. GBD 2019 Bangladesh Burden of Disease Collaborators. The burden of diseases and risk factors in Bangladesh, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet Glob Health. 2023;11(12):e1931-e1942.
2. World Health Organization. Global Tuberculosis Report 2024. Geneva: WHO; 2024.
3. Sharif N, Opu RR, Saha T, et al. The epidemiologic and clinical characteristics of the 2023 dengue outbreak in Bangladesh. Open Forum Infect Dis. 2024;11(2):ofae066. doi:10.1093/ofid/ofae066
4. Mahmud AS, Bhattacharjee J, Baker RE, Martinez PP. Alarming trends in dengue incidence and mortality in Bangladesh. J Infect Dis. 2024;229(1):4-6. doi:10.1093/infdis/jiad529
5. Fahad AH, Zamil MF, Trina AT, et al. Resurgence of dengue virus serotype 2: findings from the 2023 Bangladesh outbreak. Am J Trop Med Hyg. 2024;111(3):617-621. doi:10.4269/ajtmh.24-0229
6. Riaz BK, Islam MZ, Islam ANMS, et al. Risk factors for non-communicable diseases in Bangladesh: findings of the population-based cross-sectional national survey 2018. BMJ Open. 2020;10(11):e041334. doi:10.1136/bmjopen-2020-041334
7. Non-Communicable Disease Control (NCDC) Program, Directorate General of Health Services (DGHS). National Guideline on Diabetes Mellitus, Bangladesh. 1st ed. Dhaka: Ministry of Health and Family Welfare; 2023.
8. Bonik Barta. Bangladesh's diabetes rate second-highest in South Asia. Bonik Barta. November 14, 2025. Accessed December 24, 2025. https://en.bonikbarta.com/bangladesh/twYysBEZQnbWQX4Y
9. Saquib N, Saquib J, Ahmed T, Khanam MA, Cullen MR. Cardiovascular diseases and type 2 diabetes in Bangladesh: a systematic review and meta-analysis of studies between 1995 and 2010. BMC Public Health. 2012;12:434. doi:10.1186/1471-2458-12-434
10. Islam AKMM, Majumder AAS. Coronary artery disease in Bangladesh: a review. Indian Heart J. 2013;65(4):424-435. doi:10.1016/j.ihj.2013.06.004
11. National Institute of Preventive and Social Medicine (NIPSOM). Bangladesh Non-Communicable Disease Risk Factor Survey 2018. Dhaka: NIPSOM; 2019.
12. Sharif N, Opu RR, Saha T, et al. Evolving epidemiology, clinical features, and genotyping of dengue outbreaks in Bangladesh, 2000–2024: a systematic review. Front Microbiol. 2024;15:1481418.
13. World Bank. The Continuum of Care for NCDs in Bangladesh: The Time to Act Is Now. World Bank; March 2019.
14. Hore TK, Alim A, Shimul MMH, Khandker S, Ahmad SA. Challenges in non-communicable disease management at primary healthcare facilities in rural Bangladesh: a cross-sectional mixed-methods study of patient non-retention and system readiness. BMC Health Serv Res. 2026;26(1):194. doi:10.1186/s12913-026-14013-3
15. Mahumud RA, Gow J, Mosharaf MP, et al. The burden of chronic diseases, disease-stratified exploration and gender-differentiated healthcare utilisation among patients in Bangladesh. PLoS One. 2023;18(5):e0284117. doi:10.1371/journal.pone.0284117
16. The Global Fund. Bangladesh: Providing TB Services to People Displaced by Climate Change. Geneva: The Global Fund; 2024.
17. Government of the People's Republic of Bangladesh. 4th Health, Population and Nutrition Sector Programme (HPNSP) and the Multisectoral Action Plan for Prevention and Control of Non-communicable Diseases (2018–2025). Ministry of Health and Family Welfare; 2017.
18. Hossain MB, Parvez M, Islam MR, Evans H, Mistry SK. Assessment of non-communicable disease related lifestyle risk factors among adult population in Bangladesh. J Biosoc Sci. 2022;54(4):651-671. doi:10.1017/S0021932021000286
19. Daily Star Bangladesh. Dhaka's deadly air: what we know and what we can do? June 21, 2025.
20. National Tuberculosis Control Programme, Bangladesh. TB Statistics 2024. DGHS; 2024. Accessed February 10, 2026. https://www.ntp.gov.bd
21. Rawal L, Jubayer S, Choudhury SR, Islam SMS, Abdullah AS. Community health workers for non-communicable diseases prevention and control in Bangladesh: a qualitative study. Glob Health Res Policy. 2020;6(1):1. doi:10.1186/s41256-020-00182-z.