Prevalence of cardiovascular disease in Bangladesh: Synthesis of evidence

Cardiovascular diseases (CVD) are among the leading causes of death globally and most deaths (80%) occur in low- and middle-income countries like Bangladesh. A significant increase in the prevalence (the number of people with CVD, divided by the total number of people) and associated mortality is observed in Bangladesh over the last few decades. Several risk factors such as lifestyle, diet, environmental, and few other population-specific factors are in general responsible for the increased CVD prevalence. In Bangladesh, besides the common risk factors, other factors such as a geographical change in disease patterns from communicable to non-communicable diseases, a growing trend of urbanization and an attraction for following a Western lifestyle could also play a vital role behind the increased risk. Fast economic growth and rapid urbanization increase the concern that a further rise in the CVD burden may be seen in Bangladesh.

A population-based surveillance system to track non-communicable chronic disease is currently absent in Bangladesh. Besides, it is hard to find accurate information on the prevalence of diseases due to a lack of central administrative health data. Further, a limited number of studies have been undertaken and little research on synthesizing existing CVD prevalence studies through proper systematic review. The lack of information on the prevalence of CVD restricts health professionals and policymakers from realizing the magnitude of the problem in Bangladesh. To plan and execute a preventive strategy for CVD, detailed information about the prevalence of CVD can be very effective and this study is conducted to address this gap,

We identified published studies on the prevalence of CVD in Bangladesh through systematically searching electronic databases MEDLINE, EMBASE, and PubMed. Two reviewers independently identified potential studies and extracted information from different studies.

Our search initially captured 743 studies and after removing irrelevant studies ultimately identified 13 studies presenting information on the prevalence of CVD among the Bangladeshi adult population. Different types of CVD (e.g., stroke, ischemic heart disease, coronary heart disease, congenital heart disease, heart attack, etc.) prevalence was reported ranging from 0.062% to 77.7%. The pooled (combined) prevalence of CVD is estimated between 1% and 21% depending on the type of CVD reported. The highest pooled prevalence (21%) is estimated for heart disease, while the lowest pooled prevalence (1%) is estimated for stroke. The overall pooled prevalence of CVD (prevalence of all types of CVD together) is estimated 5.0%. The pooled prevalence of CVD is the same in both females and males (3%) but higher in urban areas (8%) compared to rural areas (2%). The overall prevalence of CVD increased by 0.12% for every 1-year increase in the study year, suggesting that the prevalence of CVD is on the rise. A set of eight criteria to evaluate study quality indicates many studies lack to meet certain quality criteria. We detected evidence of small study effect, in which small-sized studies reported a higher prevalence of CVD. We also noticed high between-study-heterogeneity among the studies.

Our review is the first of its kind that systematically assessed the scientific literature on the prevalence of CVD in Bangladeshi adults and attempts to provide a comprehensive report on study variability in the reported prevalence. We identified many studies that consist of datasets that are small and specific to the particular settings (e.g. hospital patients or employees of an institution) or regions. Well-designed population-based nationally representative surveys focusing on CVD and its associated risk factors are crucial to identify the severity of CVD prevalence in Bangladesh, to implement preventive strategies to alleviate the further increase in the prevalence and to reduce the morbidity and mortality associated with CVD.

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Publication

Prevalence of cardiovascular disease among Bangladeshi adult population: a systematic review and meta-analysis of the studies.
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Vasc Health Risk Manag. 2018 Aug 21