Impending epidemic of cardiovascular diseases among lower socioeconomic groups in India

According to WHO, cardiovascular diseases are the leading cause of death globally, representing 31% of all deaths. As of 2016, more than 75% of these cardiovascular disease-related deaths occurred in low-income and middle-income countries.[1] Cardiovascular diseases are associated with significant morbidity and mortality, and WHO estimated they contributed to 27% of all non-communicable disease (NCD)-related deaths in India in 2016.[2] The prevalence of cardiovascular diseases is high in India, even among people who are slightly older than 45 years. Therefore, the publication of the latest data from the Longitudinal Ageing Study in India (LASI)[3] is timely. LASI consists of a nationally representative longitudinal sample of more than 70 000 adults older than 45 years and provides comprehensive data on health, socioeconomic wellbeing, and social determinants of health in India.

Prevalence of cardiovascular diseases and their association with socioeconomic status has been well documented in high-income countries, and although prevalence has declined among higher socioeconomic groups in recent years, they continue to disproportionately affect lower socioeconomic groups. In contrast, this association is not well researched in low-income and middle-income countries, resulting in conflicting evidence. For example, while cardiovascular diseases predominately affect lower socioeconomic groups in some east Asian countries, including China,[4] the association is the opposite in India, where cardiovascular diseases disproportionately affect higher socioeconomic groups.[5] In India in 2017–18, in the population older than 60 years, the prevalence of self-reported cardiovascular diseases was 45% in the richest monthly per capita expenditure (MPCE) quintile and 27% in the poorest MPCE quintile.[5] The prevalence of cardiovascular diseases based on self-reported measures might be underestimated, especially among the lower socioeconomic groups, because of lower awareness of disease status and under-reporting. A strength of the LASI survey is that it reports objective measurements taken for certain biological markers. Here, we consider hypertension a tracer condition because it is a major risk factor for cardiovascular diseases and contributes to 14% of total disability-adjusted life-years lost in India.[2]

Comparing the self-reported prevalence of hypertension with objective blood pressure measurements among the richest and poorest quintiles shows that there was little difference among the richest MPCE quintile between these two measures (self-reported hypertension 33·6% *vs* objective hypertension 31·4%).[5] However, in the poorest quintile, the self-reported prevalence of hypertension was 19·5%, compared with 29·4% according to objective blood pressure measurements, suggesting that a significant percentage of those belonging to the poorest quintile were not aware of their condition. In fact, among the poorest quintile, one in four adults older than 60 years had undiagnosed hypertension. Of people diagnosed with hypertension in health-care settings, almost 79% in the richest quintile were treated, compared with only 63% in the poorest quintile.[5] These results suggest that there are significant financial barriers to treatment among the poorest quintile, because most payments associated with purchase of drugs—be it prescription or over-the-counter—require out-of-pocket spending. In the poorest quintile, treatment rates for hypertension are even lower among people aged 45–59 years, with only 52% receiving treatment.

Another concern is that 40% of people in the poorest quintile were diagnosed as prehypertensive (ie, had blood pressure of between 120/80 mm Hg and 139/89 mm Hg).[5] This high prevalence of prehypertension suggests that a transition is taking place in India, wherein the next wave of cardiovascular disease-related deaths and disability are likely to come from the poorest quintile. People from this quintile are at a further disadvantage in terms of educational status because they have relatively high rates of illiteracy, are resistant to public health information campaigns,[6] and can be more targeted by advertisements from national and multinational companies. For example, a study of 16 countries revealed that people in low-income countries are more than ten-times more likely to be exposed to marketing strategies by the tobacco industry than

people in high-income countries.[7] It also showed that tobacco companies aggressively target women, children, and youth in many low-income and middle-income countries.[7] In addition, due to lack of health insurance, the lower socioeconomic groups in India are further disadvantaged in terms of use of health services because the majority of treatment—be it outpatient consultation or inpatient admission—is provided by the private sector on a fee-for-service basis, resulting in wide-spread inequalities in access to health care.

According to WHO, unhealthy diet, tobacco use, alcohol consumption, and physical inactivity are important risk factors for cardiovascular diseases.[1] The majority of these risk factors are highly prevalent among the poorest quintile in India. India is among the countries with the highest tobacco consumption and smoking prevalence globally. In 2017–18, tobacco consumption in men was as high as 32·7% in the poorest quintile compared with 19% in the richest quintile.[5] Due to the high cost of fruits and vegetables, consumption of a healthy diet might be beyond the reach of many people in the lower socioeconomic group. On one hand, 45–64% of the low-income population in rural India are unable to afford a balanced diet according to the national dietary guidelines,[8] and on the other hand, the rise in globalisation-induced fast food is fuelling the obesity crisis among the middle-income and high-income populations.

The fact that cardiovascular diseases appear to disproportionately affect the higher socioeconomic status group in India, even after accounting for under-reporting in low-income groups, might mean the country is in a unique position. A systematic review of the association between socioeconomic status and cardiovascular diseases found that cardiovascular diseases and its risk factors, such as diabetes and hypertension, are substantially more prevalent among the higher socioeconomic status groups in India.[9] In addition, because India is experiencing a higher prevalence of NCDs among the lower socioeconomic group, the country might find itself unprepared to stem the impending epidemic of cardiovascular disease-related deaths and morbidity.

With significant burden of infectious and communicable diseases, increasing morbidity and mortality due to NCDs, and the COVID-19 pandemic, policy makers in India have to balance these competing health challenges in the context of budget constraints. With the budget for 2021–22 just announced, which places an emphasis on strengthening the public health system,[10] policy makers must ensure that the public health systems are able to meet the challenges in addressing NCDs in general and cardiovascular diseases in particular. India should learn lessons from high-income countries in which a number of low-cost primary level interventions have reduced the prevalence of cardiovascular diseases. By adopting a combination of individual and population-based strategies involving primary and secondary levels of prevention, and by targeting people at risk in lower socioeconomic groups, India can seize this opportunity and attempt to minimise the impact of the impending crisis of cardiovascular diseases.

We declare no competing interests.

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