In recent years, the less developed countries like India are being confronted with the phenomenon of double burden of disease. On one hand, these countries are coping with infectious diseases including diarrhoea due to malnutrition; it is a double whammy as non-communicable diseases (NCDs) like obesity due to inappropriate food habits and sedentary lifestyle are also emerging as a challenge for the health planners of these nations.

In fact, in India, robust epidemiological studies are the need of the hour to exactly quantify the obesity burden so that all stakeholders can plan the future health needs in a precise manner. The national representative data on a disease provide a perfect model for this purpose. In this issue, phase 1 of Indian Council of Medical Research-India Diabetes (ICMR-INDIAB) study evaluated the prevalence of obesity in India. The ICMR-INDIAB Study is a pan-India study conceived with the aim of assessing the prevalence of diabetes and other related comorbid diseases. Though the main focus of the ICMR-INDIAB Study group is diabetes, the other risk factors are also being evaluated. This study has been planned with a very elaborative and scientific methodology at a national level involving 124,000 subjects to fill the gap in the knowledge regarding surveillance of NCDs like diabetes, obesity, hypertension and dyslipidaemias. Very importantly, the study has adequate rural representation to assess the rural-urban epidemiological differences for these NCDs.

In this study, the prevalence of generalized obesity (GO), abdominal obesity (AO) and combined obesity (CO) has been evaluated in the four regions of India (northern, southern, eastern, western) using the World Health Organization Asia Pacific guidelines. The prevalence of all types of obesity was significantly higher among urban population as compared to rural population. The study further concluded that prevalence of AO was higher than GO.

Most notably, this study observes that prevalence of obesity in both urban and rural India is increasing over the years. The increasing obesity in rural India will have an implication on the delivery of health care in rural setting, which is already under strain due to lack of adequate health care facilities in villages even to provide primary care. Pending completion of all phases of the ICMR-INDIAB Study, phase 1 has estimated that 135 million (almost equivalent to population of Japan), 153 million (almost equivalent to population of Russia) and 107 million (almost equivalent to population of Philippines) people have GO, AO and CO, respectively. Interestingly, it has also been observed that female population is also being affected by obesity. Though this reflects the evolving socio-economic development of women in India, the health related issues peculiar to obese women like gestational diabetes and polycystic ovarian syndrome will become important public health concerns. The implications of maternal obesity on the increased offspring obesity are well known. Over the years, this may have a cascade effect on the overall obesity prevalence in a country when the obese children become adults. Another important observation of the study is the increasing trend of obesity with increasing education status. This aspect highlights the paradox that higher education levels per se do not prevent obesity. Possibly, higher education with its increasing economic sovereignty results in higher consumption of obesogenic foods and a sedentary lifestyle.

The other associations of obesity with hypertension, diabetes, higher socio-economic status, physical inactivity and urban predominance confirm the trends as observed all over the world, especially in Asia. It
has also been observed that obesity without obvious comorbid diseases in Asian Indian population is associated with subclinical echocardiographic left ventricular dysfunction. This observation further reveals the correlation between anthropometric variables like body mass index and waist-hip ratio with changes in left ventricular function and morphology.

The ICMR-INDIAB Study group has also published several important subgroup analyses of their findings of phase 1 study. Among the lipids, the group confirmed that reduced high density lipoprotein was the most common lipid abnormality observed in almost three-fourths of the subjects. Similarly, it has been estimated that prediabetes and diabetes are affecting 77.2 and 62.4 million people, respectively in India. The Study group has also observed that only 22.4 per cent of urban and 15.4 per cent of rural subjects have checked glycated haemoglobin (HbA1c) during the past one year. Further, good glycaemic control (HbA1c < 7%) was observed in approximately one-thirds of the diabetic rural and urban population. Hypertension (both known and newly diagnosed) has been observed in approximately one-fourth of the studied population with increased salt intake of more than 6.5 g/day as a very significant risk factor for its development. Moreover, ICMR-INDIAB Study group has also observed that less than 10 per cent people in India perform recreational physical activity. Physical inactivity is a harbinger of many NCDs as very aptly reflected by its association with NCDs in India.

Evidently, these findings of obesity-related comorbid diseases have implications for the public health delivery system in a resource-limited country like India. This calls for a national endeavour to inculcate lifestyle modifications in the population at large in a structured approach starting from school as well as providing correct knowledge through the print and visual media.

The other elaborate epidemiological survey done in India is National Family Health Survey (NFHS). Till date, three series of this survey have been completed and NFHS-4 is being launched in 2015. This survey will cover the whole country and provide trends in important health and nutrition indicators including NCDs. The trends of various NCDs in ICMR-INDIAB study group are in consonance with NFHS survey series.

The findings of the ICMR-INDIAB phase 1 study are exciting in the field of epidemiology-related evidence-based medicine in India. Trustfully on completion of all phases, ICMR-INDIAB study will fulfill a major gap in the epidemiological pattern and association of NCDs like diabetes, hypertension and obesity in India. The conclusions of this gargantuan national study will go a long way in guiding health care stakeholders in India. Moreover, such extensive epidemiological studies give a fillip to operational research and motivate health care professionals to generate indigenous statistics for diseases prevalent in the country.

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