Commentary: Beyond urban–rural comparisons: towards a life course approach to understanding health effects of urbanization

Sanjay Kinra

Rapid urbanization is believed to be the driver behind the emerging epidemics of cardiovascular disease and diabetes in low-income countries.\(^1,2\) So far, the role of urbanization has been evaluated mainly through comparisons of disease prevalence in urban and rural dwellers.\(^2,4\) Although a useful starting point in documenting the scale of the problem, such crude geographical comparisons offer little insight into the determinants and pathways by which urban environment influences disease risk in a population, important for planning prevention programmes. Research by Sobngwi et al. tries to move this agenda forward by assessing the exposure to urban environment over the life course (rather than current exposure) and relating it to obesity, diabetes, and hypertension in an adult population of Sub-Saharan Africa.\(^5\)

The novel element of this research is the use of a chart that allows retrospective recording of residence area, as urban or rural, for each year of life starting from birth to the time of data collection. The data from this chart is then used to calculate an individual’s lifetime exposure to urban environment. Such a tool, if valid and generalizable, could prove useful in assessing the role of duration and timing of urban exposure including critical age effects, if any. However, as it stands, this tool has important limitations, especially when applied to settings geographically larger and more diverse than Cameroon.

The first limitation of this tool is that it does not allow recording of migration distinct from urbanization. All changes of residence to urban are automatically assumed to be the result of migration on behalf of the subject. This ignores the possibility that the subject stays in the same place but the place urbanizes. This is relevant as, unlike the urbanization of Europe that was driven largely by migration, new migrants constitute only half of the urban population growth in the developing world with the remaining attributed to growth of the existing populations and expansion of urban boundaries.\(^6\) This distinction, largely ignored in health research on urbanization, is important, as the health consequences of exposure to urban environment are likely to be different between migrants and non-migrants.\(^7,8\)

The second limitation is the simplistic use of terms urban–rural as a fixed and binary characteristic of a place, which in reality is neither fixed nor binary. Each country has its own definition for classifying a place as urban or rural and such definitions have traditionally been developed for administrative, political or geographical purposes rather than as an exposure category for health research.\(^9\) Urbanization of a place relates to an acquisition of a number of related but independent characteristics, which may or may not develop at the same pace and order across rural dwellings globally.\(^9\) Use of urban–rural as a proxy for lifestyle differences internationally could therefore result in serious misclassification of exposure. The issue is further complicated by the fact that current classification of a place as urban or rural cannot be assumed to apply at all time points in the past as, given the pace of urbanization in the developing world, a place could change its classification over the lifespan of a person.\(^6\) Consequently, the status of a place has to be known independently for each time point during the study period and such data is generally unavailable or has limited validity.

The third limitation is the bias associated with retrospective data collection of this nature. Data collection requiring chronological recall of events can be problematic in rural areas in the developing countries as a much lower level of education is often correlated with non-usage of Roman dates and calendars. This increases the potential for bias resulting from exposure misclassification in urban–rural comparisons markedly.\(^10\) The authors state the chart was validated in a sub-sample of urban and rural dwellers against educational and professional records. Unfortunately, they do not provide any details of the data available to them or the accuracy of the performance of this chart against those records.

The above mentioned limitations, a relatively small sample size and the post hoc nature of some of the analyses suggest a cautious interpretation of results, best regarded as hypothesis-generating and need to be tested in other studies. However, this research represents an important first step towards moving beyond simple urban–rural comparisons in evaluating health effects of urbanization and urban migration. This topic has important implications for future health and health care workload in the developing world and demands greater attention and sophistication in relevant research.

References


