Health and lifestyle changes among migrant workers in China: implications for the healthy migrant effect

China's rapid social transition has been, to some degree, a story of migration. Internal rural-to-urban migrants provided the workforce for industrialisation, and currently internal migrants represent one sixth of China's population. The nature of that internal migration has changed enormously in the past 30 years, including the migrants' health and health risk profiles. During the earlier period of migration, the public health focus was on communicable diseases, reproductive and maternal health, and occupational health issues.[1] With sustained economic growth, and the overall improvement of health services and general education in China, these problems are less alarming now than before, even if they are far from eradicated.[2,3]

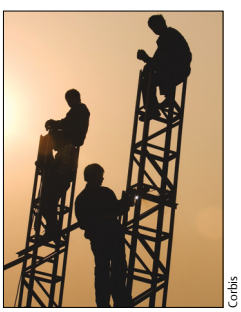
However, new challenges have appeared in their stead. Where once the main issue was so-called diseases of poverty, the concern now is the growing prevalence of diseases of affluence. This is a phenomenon seen worldwide.[4-6] As migrants leave the ecological, economic, and social constraints of rural life and become exposed to urban forms of consumption and lifestyle, they also come to be at increased risk of an array of non-communicable diseases. Some of these diseases are the result of the disruption of migrants' economic and social lives (eg, stress), some are the result of the overconsumption of psychoactive substances (eg, alcohol, tobacco, drugs), some come from changes in the foodstuffs accessible to them, and some are the result of changes in activity patterns (sedentarism). However, because of the complexity of the issue and the limitations of available methods of investigation, research so far has not reached a consistent consensus on which risk factors are most important in causing the diseases of affluence.[7]

In their study reported in *The Lancet Diabetes & Endocrinology*, Yufang Bi and colleagues[8] focus on the classic lifestyle diseases that are associated with sedentarism and obesity. The investigators provide invaluable large-scale empirical data about metabolic and cardiovascular health and lifestyle behaviours of migrant workers in China. The main value of this study is that all of the health data used were directly measured on the spot. This approach contrasts with many previous studies, which have relied on self-reported health measurements or had smaller sample sizes.[9,10] The robust, hard data reported by Bi and colleagues provide more reliable evidence to tell the story of lifestyle-related health risks among Chinese internal migrants.

However, this story so far is perplexing, with an apparent paradox in the data. There are clear markers of possibly deleterious lifestyle changes in the data for BMI and waist circumference, which suggest a prevalence of 4·7% for obesity and 29·4% for central obesity—both higher than in the general population. However, these upstream risk factors do not correlate well with more proximate risk factors (eg, hypertension 16·3%, dyslipidaemia 34·5%) or reported prevalence of disease (diabetes 5·1%), which are lower than in the general population across the board. Is it possible for a population to have overall lower risk factors for diabetes, hypertension, dyslipidaemia, and metabolic syndrome, but higher prevalence of obesity and central obesity?

This paradox suggests several possibilities that further research might be able to address. First, persistent problems with the measurement: the suitability of BMI as the sole indicator for the measurement of obesity, especially when a large portion of the measured population engages in heavy labour, is doubtful.[11] Second, unobserved protective factors: something about the Chinese internal migrant population (eg, genetic predispositions, dietary behaviours, or activity patterns) might be providing a degree of protection that is not visible in the data. Third, lag and cycle issues: there are relative lags between lifestyle change and onset of persistent health problems. If younger generations are getting fatter earlier than their elders, then although they are showing the direct impact of their changing diets, they might not yet be experiencing the health effects of their changed lifestyles.

Increasing risks of cardiovascular and metabolic disorders among migrants is a mere fraction of the complex issue of migrant health. The so-called healthy migrant effect, whereby migrants have low mortality rates compared with the local population despite their socioeconomic disadvantages,[10–13] has puzzled researchers for a long time. There is no clear consensus on whether this effect is an artifact of self-selection of healthy people



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while leaving the unhealthy ones behind, or the result of some other factors.[14] One possibility is that it shows a lifecycle issue, with migrants benefiting from the positive health effects of migration (eg, access to better health care, reduced exposure to some types of communicable diseases), while the negative effects of migration (lifestyle diseases, some forms of workplace diseases) are lagging because they affect migrants much later in their lives.

If it is indeed a matter of lifecycles, the focus of research on migrant health in China should shift to trying to understand the entire lifecycle of rural migrants, including their changing exposures to various health risks, changes of cultural habits and of physical, social, and psychological environments, adaptations to their new conditions (both effective and suboptimum), and changes in their health knowledge, perceptions of risk, and expectations of health. To prevent an explosion of obesity and metabolic diseases in migration-receiving cities and countries in the near future, it is clear that any action must focus on the agency of the migrants themselves. Cultural habits that were positive or neutral in a rural context might become problematic after migration. It is easy to forget that in most traditional rural societies, lean and physically active did not connote health and attractiveness, but instead poverty, low status, and dependence on low-prestige manual labour—all undesirable social traits.[15] Similarly, weight loss was an alarming sign of deteriorating health, not a marker of fitness. Changing these perceptions to adapt to the health ideology of the cities and to a more modern conception of health risk will take time and understanding. Changing perceptions and habits is as difficult among migrants as it is for the rest of the population, but action must focus on understanding the origin of these unhealthy behaviours, their causes, and the reasons for their persistence or emergence.

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Preventing new-onset diabetes in thiazide-treated patients

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Although thiazide diuretics reduce blood pressure as effectively as other drugs,[1] one of the recognised disadvantages of drugs of this class is that they adversely affect lipid and glucose metabolism.[2] They cause a slight increase in serum LDL cholesterol and triglycerides, a decrease in serum HDL cholesterol, and an increase in blood glucose concentrations both in the fasting state and after a glucose load. The effects on blood glucose have raised special concern because data from clinical trials have shown that, when prolonged for years, thiazide-based treatment is associated with an increased incidence of type 2 diabetes compared with placebo or with drugs such as blockers of the renin–angiotensin system or calcium-channel blockers.[3,4]