

How globalization has impacted on the global trend of obesity epidemic from the perspective of macro factors

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Abstract. Obesity has become a global problem that is common in both developed and developing countries. Excessive obesity can cause many diseases and pose a greater threat to human health. There are many reasons for the obesity epidemic. This article will look at the impact of globalization on global obesity trends from a macro perspective. This article also briefly introduces the basic conditions and hazards of the global obesity epidemic and proposes some policy recommendations.

1. Introduction

As a global health problem prevalent in both high-income and low-income countries, obesity has become one of the major global disease (Finucane et al., 2011). According to a research by the Prospective Studies Collaboration (2009) excessive obesity is an important predisposing factor for the morbidity and mortality of cardiovascular diseases, type 2 diabetes mellitus (T2DM) and certain cancers. The increase in the incidence of obesity and related chronic diseases around the world is largely driven by globalization, which promotes dramatic changes in the living environment and, to a certain extent, promotes positive energy-balanced diets and lifestyles (Hawkes, 2006). While globalization has clearly contributed to a significant improvement in quality of life and food safety, and the decline in poverty levels in many countries, an unintended consequence of globalization is that the consumption of low-nutritional and high-calorie sugary drinks and food increases dramatically. Along with reductions in physical activity, these factors are promoting the global prevalence of obesity (Fuster et al., 2010). Although there are many presumptive reasons for obesity epidemic, from the perspective of the macro factors such as global trade liberalization, economic growth and urbanization, this essay will focus on the impact of globalization on the global trend of obesity epidemic. This essay also briefly introduces the basic situation and hazards of obesity epidemic worldwide, and presents some policy recommendations.

2. Global obesity prevalence

Relevant survey data indicate that the obesity epidemic began in the United States from the 1980s, while the estimated American and global prevalence of obesity in 2008 has doubled (Finucane et al., 2011). On a global scale, the prevalence of obesity among men increased from 4.8% to 9.8% between 1980 and 2008, and the

female prevalence rose from 7.9% to 13.8% (Ibid.). Particularly, in the United States in 2010, 35.5% of men and 35.8% of women were obese (Flegal et al., 2012). During a special obesity consultation in 1997, the WHO officially confirmed the global impact of obesity epidemics (James, 2008). It is important to point out that, due to the persistent growth of the population over the world, even if the prevalence of obesity does not rise, the burden of obesity will continue to increase.

It is remarkable that childhood obesity has become one of the most serious public health challenges in the 21st century (World Health Organization, 2017). Childhood obesity usually lasts into adulthood, greatly increasing the risk of chronic diseases (Singh et al., 2008). According to the International Diabetes Federation and the WHO, addressing childhood obesity is a very effective manner to prevent the future development of T2DM (Popkin et al., 2006). Although the prevalence of obesity among adults is higher than children, the incidence of childhood obesity is growing faster than the obesity prevalence of adults in some countries, such as the United States, China and Brazil (Ibid.). Between 1990 and 2010, the global prevalence of overweight and obesity among children rose from 4.2% to 6.7% (de Onis, Blossner and Borghi, 2010). Moreover, if this trend is not reversed, the total number of overweight or obese children around the world is expected to reach 60 million by 2020 (Ibid.).

3. Globalization: the macro-level driving force

Globalization has been defined by the Global Health Council of the Institute of Medicine as “the dissemination of knowledge and science, telecommunications and other information technologies, and cultural and behavioral adaptations” (Fuster et al., 2010). Broadly speaking, globalization also includes the free flow of money, increased direct foreign investment, expanded marketing systems and broad consumer choices (Ibid.). In general, these changes have a profound impact on food access and lifestyle. While globalization has resulted in significant improvements in food safety and quality of life, and largely reduced poverty through social and economic modernization, the unexpected consequences of globalization are excess nutrients and changes in lifestyle and living environment, and further contribute to the prevalence of global obesity (Malik, Willett and Hu, 2012). These changes are mainly driven by macroeconomic factors such as global trade liberalization, economy growth, and increased urbanization.

4. Global trade liberalization

Between the 1970s and 1990s, many countries carried out economic structuring reforms, including policies for the marketization or liberalization of agricultural trade. These policies have changed the food supply system, promoted the transfer of nutrients, greatly enriched the selectivity and availability of food, which directly led to the prevalence of obesity. Trade liberalization can affect the supply of many foods by eliminating the barriers of foreign capital investment to the food industry and the expansion of transnational food companies and fast food chains, bringing in more quantities and varieties of food (Kearney, 2010).

For instance, in the United States, the farm bill which is a major and important agricultural legislation “has had a profound impact on food supplies and costs through crop subsidies and food aid programs” (Weems and Weber, 2007). Due to direct and indirect subsidies or tax incentives for food production, the cost of basic food commodities (such as soybeans and corn) is pretty low. These basic food crops are also the main feed for livestock, which further leads to the low price of meat by international standards and historical perspective. In contrast, the production of vegetables and fruits is hardly supported by the government, so its price is still very expensive. This change in food supply structure will inevitably lead to the corresponding adjustment of food demand structure.

Cutler, Glaeser and Shapiro (2003) indicated that the decline in food costs and the movement to large-scale production have been the main cause of the obesity in the United States, and this explanation is also suitable for other countries which experience similar changes in food supply. Although these factors and changes can reasonably explain the trend of obesity, but this explanation is not entirely sufficient. Kenneth Rogoff (2012), former Chief Economist at the International Monetary Fund, states that “the obesity epidemic in the United States is an unavoidable consequence of an unregulated capitalistic food system, in which companies compete with each other to induce consumers to eat more of their product”. In spite of more in-depth research on the relationship between economy and obesity should be undertaken in the future, economic policies and global trade agreements should be considered as priority in the development of policies and strategies to prevent obesity.

5. Income growth

Kearney (2010) indicates that, in the next three decades, global per capita income is expected to rise at an annual rate of 2%, this growth rate is expected to be even much higher in low-income and middle-income countries (LMCs). The prevalence of obesity is positively related to the initial stages of economic growth and development, and in particular, the LMC people are experiencing both rapid income growth and dramatic changes in nutrition and lifestyle, but it is almost no access to obtain the corresponding health services and education (Ezzati et al., 2005). With the increase in average incomes, obesity-related habits are heavily accepted and adopted, such as watching TV, buying convenience food in supermarkets, eating highly processed fast food. Meanwhile, access to health care, health food and leisure sports to maintain weight are very limited.

6. Urbanization

93% of the global urban growth is expected to occur in the LMCs, of which 80% of the growth will occur in Asia and Africa (Web.unfpa.org, 2007). For instance, according to a revision about world urbanization prospects by United Nations Department of Economic and Social Affairs/Population Division (2009), it is expected that by 2050 there will be more than one billion people living in cities, which is almost twice the current urban population in China. There are many consequences for the development of obesity in urban life, mainly due to changes in living environment and the scope of food choices and the lifestyles associated with technological progress and mechanization. In general, these changes have a direct impact on dietary quality and

energy consumption. Extensive urbanization has also led to the decline in farmland supply, accompanied by the improvement of agricultural production efficiency, which promotes rural surplus labor to the city to employment (Wang et al., 2006). These changes can affect the availability of food by reducing the local supply of agricultural products and the energy consumption of workers. Meanwhile, urbanization has further promoted health and education opportunities which are beneficial for the prevention of obesity (Fuster et al., 2010). Nevertheless, the pace of many ongoing urbanization in LMCs is so fast that the development of infrastructure has not kept up with the process of urbanization. The transition to more mechanized and technology-driven lifestyles leads to increasingly sedentary lifestyles and lower energy consumption. Obviously, both the increase in calorie intake and the decline of the energy expenditure will be likely to result in the prevalence of obesity. Low energy expenditure reduces the energy demand, so that excessive energy tends to accumulate gradually, and it is difficult to restore to the previous level of metabolism without sustained and a lot of exercise (Popkin, 2010).

In specific countries, obesity and relevant conditions are often more common in cities than in rural areas. Living in highly urbanized LMCs such as Brazil, because it is easier and more extensive access to high energy, low nutritional value and low cost of food, and meanwhile people have a sedentary lifestyle, low-income families have greater risk of obesity than wealthy families (Caballero, 2005). The obesity risk of the rich group is lower than that of the low-income group, which may be due to the availability of sufficient income to purchase healthy food, access to high level health education and health care, and adequate leisure and physical activity (Ibid.). Increasing family health care spending could also lead poor families to the debt and disease cycle traps, further deepening LMC's health and economic inequality, thereby exacerbating poverty (Freudenberg, 2011). Between 2006 and 2015, due to obesity-related chronic diseases, economic production in the LMCs is estimated to lose about \$ 84 billion if the prevalence of obesity does not diminish (Abegunde et al., 2007).

7. General policy consideration

Policy innovation, especially those that may improve individual health and social environment, will bring long-term benefits to public health and quality of life. On account of the range and complexity of the global obesity epidemic, cross-level prevention strategies and policies are needed to reverse this trend. The global health policy innovations aimed at reversing the epidemic of obesity may require ongoing intervention by the international community, government and various organizations for diet, lifestyle and environmental risk factors. The high-level global policy development at the international community would help governments develop national guidelines and health outcome monitoring and evaluation systems to raise global awareness. Obesity as a national priority, the state could introduce guidelines and related initiatives to improve people's diet habits and physical activity. LMCs must establish a relatively sound health care system which could address obesity issues, chronic diseases and infectious diseases. Efforts should be made to promote global efforts to prevent obesity by taking advantage of the positive aspects of globalization, such as increasing information flows, improving technology and innovation through international cooperation.

8. Conclusion

In recent decades, the rapid and in-depth development of globalization has had a significant impact on obesity prevalence and the morbidity of its associated comorbidities in both many high-income countries and LMCs. While globalization has improved the quality of life for many people, it has also brought about low-cost food with low nutritional value and high calorie, the increasing consumption of convenience foods and sugared drinks, as well as raising the proportion of people living in cities with sedentary lifestyles. In short, all these global changes are driving the global prevalence of obesity. The international community needs to take action to curb and reverse the development trend of the obesity epidemic, because the rapid increase in obesity and relevant chronic diseases will not only adversely affect people's health and well-being, but will also lead to very high health care costs. An effective strategy for tackling obesity globally may require comprehensive consideration of macroeconomic factors and individual behavior, taking continuous interventions and policy innovations in the world to improve diet and improve physical activity.

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