

Obesity epidemics: inevitable outcome of globalization or preventable public health challenge?

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This editorial addresses the public health challenge of the established and emerging global obesity epidemics. As the article by Moura and Claro in this issue highlights, obesity rates and associated non-communicable diseases, such as cardiovascular disease, diabetes and certain cancers, have been escalating worldwide over the past four decades. While obesity has reached established epidemic proportions in high income countries such as the USA, Canada and the UK, developing and middle income countries, such as Brazil, are not immune. In the 1970s, undernutrition was Brazil's major nutritional problem, with only 5.7% of the adult population obese. Yet, between 2006 and 2009 adult obesity rates grew from 10.8 to 13.5%. The escalation of obesity rates is rapid, but recent: an emerging epidemic. Many low and middle income countries now bear the "double burden" of both obesity and undernutrition (Swinburn et al. 2011), increasing the complexity of both problems and solutions.

Popkin and Gordon-Larsen (2004) described the nutrition transition and its global implications for obesity. Simply stated, most populations historically progress through a series of transitions that correspond to changes in economic growth, urbanization and culture. Most pertinent to obesity are the progressions from unstable and inadequate traditional food supplies in Stage 3, through increased energy-dense processed foods high in sugars and fats accompanied by decreased physical activity in Stage 4—a stage accompanied by increases in non-communicable diseases—to Stage 5, in which behavioral change enables individuals to reverse the negative changes in diet

and activity to delay and prevent non-communicable diseases. Relevant to obesity, the last decade has seen a rapid rate of transition from Stage 3 to 4 among low and middle income countries, which has contributed to obesity as a global problem. The health and economic implications for developing countries of following the same obesity trajectory set by countries such as the USA are grave, with significant costs to strained budgets. The question arises: *Are emerging epidemics inevitable, or have we learned lessons that may help prevent developing countries from suffering our fate?*

The determinants of obesity include individual behavioral determinants (diet and physical inactivity), environmental determinants (e.g., economic access to healthy food and physical activity opportunities) as the context for behavior and social determinants (cultural, economic and political) that function at societal levels (Raine 2004). Yet, the first line of defense in public health often emphasizes education, such as Moura and Claro's (in this issue) concluding clause recommending, "most importantly, education campaigns about the importance of maintaining a healthy lifestyle". While they also recommend changes to the environment to support such behaviors, there appears to be an assumption that education may hasten the transition to Stage 5 where individuals are empowered to improve their behaviors, reduce obesity, and ultimately their risk of non-communicable disease. But, lessons learned from industrialized nations suggest that a focus on individual behavior change is insufficient to stem the rising tide of obesity. Addressing the "upstream" environmental and social determinants of diet and activity behaviors is essential.

Confronted with an emerging epidemic of obesity, it is essential that researchers, practitioners and policy makers recognize that, "Obesity is the result of people responding normally to the obesogenic environments they find

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themselves in. Support for individuals to counteract obesogenic environments will continue to be important, but the priority should be for policies to reverse the obesogenic nature of these environments” (Swinburn et al. 2011). An ecological perspective on the obesity crisis may help to prioritize interventions. Ecological approaches to health promotion suggest multilevel public health strategies to promote healthy weights (Goetz and Caron 1999; Davison and Birch 2001). Ecological approaches can help to organize strategies that work both to support healthy lifestyles among individuals and to influence policy to create opportunities for social and cultural change. Strategies can be categorized by their predominant focus at the following ecological levels (McLeroy et al. 1988): (1) individual and interpersonal (family and peers), which can assist people in coping with environmental challenges; (2) environmental–institutional (schools, workplaces) and community, which can stimulate local action to support healthy behaviors; and (3) population-based public policy, which foster systemic change to address social, economic and cultural determinants of obesity. Environment and policy-oriented interventions targeting entire communities, and indeed countries, is congruent with *universal prevention* (World Health Organization 2000; Kumanyika 2007).

The urgency of shifting the intervention focus upstream to reverse the obesity epidemic poses a significant public health challenge to local, national and global organizations. Addressing the root causes, or drivers, of obesity means confronting and regulating a globalized economic system that promotes growth and consumption, including a food system that profits from expanding markets and promoting

energy-dense products (Swinburn et al. 2011). Without drastic measures with support at all levels of government, the obesity epidemic may indeed be an inevitable consequence of globalization. Prevention demands we take up the challenge immediately.

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