Commentary for *Obesity*, to accompany article 'Trends in adult overweight and obesity prevalence in Mongolia, 2005-2013'

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Suggested title:

Research and policy for addressing malnutrition in all its forms

Main text:

'Malnutrition in all its forms' is the single greatest contributor to the global burden of disease (1). Whilst high-income countries (HICs) continue to experience a very high burden of overweight and obesity, many low- and middle-income country (LMIC) populations face a double burden of malnutrition, concurrently affected by undernutrition, as well as increasing overweight and obesity (2). The Chimeddamba et al. article published in this issue of *Obesity* contributes to this literature, documenting trends in adult overweight and obesity prevalence in Mongolia, and drawing particular attention to the use of Asian-specific body mass index (BMI) cut-points (3), suggesting that abdominal measures may be better predictors of obesity-related metabolic risks than BMI (4). But the anthropometrics aside, it is clear that malnutrition is a significant public health problem, and attention must turn to effective policy to reduce malnutrition in all its forms, mindful that the various forms are likely shaped by similar factors (5, 6).

The public health community has given considerable research attention to the *causes* of population-wide changes in nutrition status indicators, especially anthropometric indicators. However, literature on undernutrition has remained distinct and siloed from that on overweight, obesity and related non-communicable disease (NCD). Nutrition literature from LMICs has conventionally focused on maternal and child undernutrition – low height-for-age, low weight-for-height, low maternal BMI and micronutrient deficiencies. Much of the literature in HICs has emerged from concern about a rapid rise in overweight and obesity, and associated NCD, leading to identification of increasingly 'obesogenic environments' as a cause. Chimeddamba et al. engage with this obesogenic environment discourse in a LMIC context, suggesting areas critical for Mongolia, including consumption of sugar-sweetened beverages, which resonates with other LMIC findings (7). These two distinct strands have often been motivated by different concerns and expertise, but increasingly the distinction is being questioned, with the co-existence of both forms being recognised in the same communities or even households – hence the 'double burden' of malnutrition description.

The public health community has given considerable attention to *solutions* for malnutrition. But this has often been in regard to individual-focused strategies that have been shown to be largely ineffective, and even counter-productive, rather than strategies that address the structural drivers of the food environments that drive our food choices (8-10). This pattern is also reflected in policy. Some governments *have* successfully introduced policy measures to address malnutrition, but these generally address provision of education/information on healthy diets and physical activity, and in some countries supplementation programmes have been put in place to address micronutrient deficiencies. More rarely, but increasingly, fiscal measures have been implemented to address

consumption of foods high in sugar or fat, for example. The evidence base for a more integrated approach is growing, including for LMICs, albeit with a lag (3, 6, 10, 11). Increasing attention focuses on the role of various sectors (beyond health) in tackling malnutrition (5). Even so, more structural measures addressing the production, availability, processing and marketing of foods – with explicit nutrition and health objectives – have been almost totally neglected.

Thus, in addition to further research on (mal)nutrition, including anthropometric transitions, particularly in LMICs, we suggest that a critical area for further research lies in examining those structural factors that may facilitate or impede effective policy implementation, and establishing for those policies that have been enacted what factors facilitated their uptake and how challenges were overcome. Such research needs to be mindful that, as Chimeddamba et al. describe, the 'causes of overweight and obesity often lie outside the health sector', and thus addressing malnutrition in all its forms requires a multisectoral, 'joined up' policy approach to address the barriers to more healthy eating (10).

References

1. Forouzanfar MH, Alexander L, Anderson HR, Bachman VF, Biryukov S, Brauer M, et al. Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks in 188 countries, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. The Lancet. 2015;386(10010):2287-323.
2. Schmidhuber J, Shetty P. The nutrition transition to 2030. Why developing countries are likely to bear the major burden. Acta Agr Scand C. 2005;2:150-66.
3. Huang T. Watching China's weight. Obesity. 2016;00(00):00.
4. Chimeddamba O, Gearon E, Stevenson C, Ng W, Baasai B, Peeters A. Trends in adult overweight and obesity prevalence in Mongolia, 2005-2013. Obesity. 2016;00(00):00.
5. Gillespie S, Haddad L, Mannar V, Menon P, Nisbett N. The politics of reducing malnutrition: building commitment and accelerating progress. The Lancet. 2013;382(9891):552-69.
6. International Food Policy Research Institute. Global nutrition report. Washington, DC2015.
7. Popkin B, Hawkes C. Sweetening of the global diet, particularly beverages: patterns, trends, and policy responses. The Lancet Diabetes & Endocrinology. 2016;4(2):174-86.
8. Walls H, Peeters A, Proietto J, McNeil J. Public health campaigns and obesity - a critique. BMC Public Health. 2010;11(1):136.
9. Walls H, Peeters A, Loff B, Crammond B. Why education and choice won't solve the obesity problem. Am J Public Health. 2009;99:590-2.
10. Pearce N, Ebrahim S, McKee M, Lamptey P, Barreto M, Matheson D, et al. The road to 25x25: How can the five-target strategy reach its goal? Lancet Global Health. 2014;2(3):e126-8.
11. Thow A, Kadiyala S, Khandelwal S, Menon P, Downs S, Reddy K. Toward food policy for the dual burden of malnutrition: An exploratory policy space analysis in India. Food and Nutrition Bulletin. 2016:1-14.