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How Can Economics Help Tackle Obesity?

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Introduction

Despite a large growth in funding for research and interventions, global rates of obesity remain at high levels. A major reason is that obesity is complex; it is a condition affected by a multitude of factors. Frameworks for helping understand this complexity (1) are useful but do little to guide policy makers on action. This paper provides a summary of how economics has contributed to policy design so far and offers suggestions for future action.

Evidence for Fiscal Intervention

Fiscal measures offer a means for changing behavior. A major target to date has been sugary drinks. Early evaluations of existing taxes in countries such as Mexico suggest that these taxes are associated with reducing sugary drink consumption (1) and no changes in total employment (2), with larger effects among lower-income consumers (3). This latter point is important because although it is claimed that this illustrates the regressive nature of such taxes, lower-income groups often suffer disproportionately from the ill effects of obesity, and rates of obesity are higher among lower-income groups in most countries. Therefore, there is more potential to benefit from reduced consumption, and regressivity is often small in absolute terms. Nonetheless, more learning is needed in improving policy design to optimally lower overall sugar consumption. For example, most existing simulation-based research has used 20% excise taxes and assumed full pass-through. As such, policy pushes have argued that tax levels of 20% or greater are necessary to have a meaningful impact, and these rates are reflected in recommendations by the World Health Organization, for instance. However, it is empirically unclear whether this is true and whether larger or smaller taxes may be sufficient, depending on the context. Furthermore, there is virtually no evidence on the impact of the tax on the whole basket of goods or how individuals substitute between foods in different product groups. Important questions remain related to the most efficient tax design, such as whether taxes should be based on sugar content or food groups and how these tax rates should be implemented. The United Kingdom is planning to adopt a different approach and

introduce a sugar levy, which, in effect, encourages product reformulation. In tobacco taxation, there is a long history of legislating for small initial taxes, followed by finance ministries raising these gradually over time without further legislation, until taxes reach a bite point at which they actually impact consumption behavior. Sugar taxes could mirror this, with evaluation in real time.

Evidence for Nonfiscal Intervention

Economists often cite “lack of consumer information” as a source of market failure, justifying nonfiscal interventions that are focused on increasing consumer awareness. Examples include front-of-package labeling or mandatory calorie information on menus. However, such interventions rely heavily on individuals taking personal responsibility and can lead to unintended consequences, such as increasing population inequities as individuals from different socioeconomic groups respond differently to information provided (4).

Other non-fiscal interventions that rely less on individual responsibility include environmental changes. Examples include market restrictions such as planning policies to prevent fast-food outlets being located near schools. In practice, however, there are few examples of these types of interventions being implemented, and there is therefore limited evidence on intervention (cost-)effectiveness. Furthermore, obstacles for implementation include politicians’ fear of a public and media outcry from having “choice” removed and overcoming powerful vested interests from the commercial food industry.

Relative to the number of studies with a clinical focus on interventions that target individuals to change behavior, there have been few reported economic evaluations (5). There are methodological challenges for undertaking economic evaluation of these types of interventions, such as the difficulty of capturing nonhealth-related costs and consequences as well as accounting for the complex pathway from diet and/or physical activity changes in the short term to longer-term life expectancy and quality of life improvements (6). Of the few economic evaluations that do exist, many studies rely on overly optimistic assumptions about the long-term sustainability of effects (7), particularly when they relate to

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interventions that have only small (insignificant) effects in the short term (8). This is a limitation with existing work given the evidence that individuals often regain weight after the termination of interventions (9).


Behavioral economic theory, when implemented, shows promise in “nudging” individuals toward making healthier choices, especially in the retail environment. Examples include positioning products in a grocery store at the end of the aisle. These policies can be effective in the short term (10). However, although this approach appears popular with the development of “nudge units” in several countries, there is still a need for systematic investigations to assess the effect on creating long-term behavioral change.

How Can Economics Contribute More?

One of the biggest challenges within obesity intervention research is accounting for the complexity of causes and understanding the impact of the environment. It is well recognized that there is no “single bullet” solution and that research needs to shift from highly controlled studies toward a consideration of quasi-experimental designs. These new designs might include a greater use of large natural experiments and increased exploitation of population-level surveillance data as well as consumer expenditure data, already collected for other purposes. Economic evaluations need to evolve to estimate effects from multiple interventions with additive or multiplicative effects. Furthermore, models need to incorporate various scenario analyses to provide a more nuanced understanding of long-term cost-effectiveness and to capture the impact of different local contexts for implementation.

Conclusion

Economists can do more. Current research is failing to make any significant difference at a population level; in fact, rates are getting worse. This contribution needs to take a population perspective and consider the nonhealth-related costs and outcomes, interactive

effects at a system level, and upstream macro determinants. Economists’ contributions should not be isolated but should foster cross-disciplinary research that engages with various sectors of industry and policy makers to promote coproduction of knowledge. Economists should aim to proactively work with these groups in designing research that contributes significantly to the evidence base to consider various policy tools and designs as well as how they integrate with each other, recognizing that nonlinear, dynamic, and complex systems are at play. 

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References

1. Colchero MA, Popkin BM, Rivera JA, Ng SW. Beverage purchases from stores in Mexico under the excise tax on sugar sweetened beverages: observational study. *BMJ* 2016;352. doi:10.1136/bmj.h6704
2. Guerrero-López C, Molina M, Colchero M. Employment changes associated with the introduction of taxes on sugar-sweetened beverages and nonessential energy-dense food in Mexico. *Prev Med* 2017;105S:S43-S49.
3. Colchero MA, Ng SW, Popkin BM. Sugar-sweetened beverage tax: the authors reply. *Health Aff (Millwood)* 2017;36:1145. doi:10.1377/hlthaff.2017.0484
4. Capewell S, Graham H. Will cardiovascular disease prevention widen health inequalities? *PLoS Med* 2010;7. doi:10.1371/journal.pmed.1000320
5. Lobstein T, Jackson-Leach R, Moodie M, et al. Child and adolescent obesity: part of a bigger picture. *Lancet* 2015;385:2510-2520.
6. Moodie M, Carter R. Economic evaluation of obesity interventions. In: Swinburn B, Uauy R, eds. *Community-Based Obesity Prevention: Evidence, Practice and Policy*. Oxford, UK: Blackwell Publishing; 2010.
7. Cradock A, Barrett J, Kenney E, et al. Using cost-effectiveness analysis to prioritize policy and programmatic approaches to physical activity promotion and obesity prevention in childhood. *Prev Med* 2017;95 (Suppl):S17-S27.
8. Döring N, Mayer S, Rasmussen F, Sonntag D. Economic evaluation of obesity prevention in early childhood: methods, limitations and recommendations. *Int J Environ Res Public Health* 2016;13. doi:10.3390/ijerph13090911
9. Meule A, Vögele C. Grand challenges in eating behavior research: preventing weight gain, facilitating long-term weight maintenance. *Front Psychol* 2017;8:388. doi:10.3389/fpsyg.2017.00388
10. Arno A, Thomas S. The efficacy of nudge theory strategies in influencing adult dietary behaviour: a systematic review and meta-analysis. *BMC Public Health* 2016;16:676. doi:10.1186/s12889-016-3272-x