

Commentary on Education-Related Health Inequities in Noncommunicable Diseases: An Analysis of the *Brazilian National Health Survey, 2013 and 2019*

Comentário sobre Inequidades Relacionadas à Escolaridade na Prevalência de Doenças Crônicas não Transmissíveis: Uma Análise da Pesquisa Nacional de Saúde, 2013 e 2019

Comentario sobre Inequidades de Salud Relacionadas con la Educación en Enfermedades no Transmisibles: Un Análisis de la Encuesta Nacional de Salud brasileña, 2013 y 2019

*Maria Inês Schmidt*¹
*Bruce Bartholow Duncan*¹

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The study by Macinko & Mullachery¹ has created a timely discussion on how to best confront inequities in noncommunicable diseases (NCDs) in Brazil. Their analyses, which are based on the *Brazilian National Health Survey* of 2013 and 2019, show important age-standardized increases in all NCDs considered – diabetes, hypertension, heart disease, asthma, arthritis, obesity, and depression – especially in the last two. In both national surveys, education-based inequities were positively associated with the prevalence of many NCDs, except cancer, depression, and obesity. Education-based inequities explained 18.9% of the variation in diabetes prevalence. Even though the socioeconomic scenario worsened over time, education-based inequities in NCDs did not increase, although a small trend (with overlapping confidence intervals) was observed for diabetes and multimorbidity.

Some aspects of their findings should be analyzed. Since their assessment of diabetes was based on diagnosis, a higher occurrence of diabetes, particularly in some areas of the country, may reflect increased diagnosis and incidence because of growing awareness rather than because of a deteriorating social environment. Moreover, since obesity is relatively well distributed across society, this major risk factor has yet to increase NCD inequity. Finally, their findings are mainly based on education and thus do not consider other dimensions of social vulnerability. Inequity was assessed by disease prevalence rather than by outcomes among those affected, thus underestimating its true size. Even so, they emphasize the urgency to talk about inequities in NCDs in Brazil.

This debate is particularly important since health inequities are now influenced by the COVID-19 pandemic and age-adjusted premature NCD mortality is no longer decreasing as rapidly as previously². This scenario indicates a likely expansion of NCD burden and its inequities in Brazil over the next years. We must reconsider the complexity of confronting these inequities.

Two general premises are important to consider possible advances. Firstly, although high-risk interventions that aim to reduce the burden of NCDs are sometimes cost-effective, they do not reach most of the population and they could worsen health inequities by favoring those with better access to healthcare. Such interventions may also be expensive and take from the already scarce resources of the Brazilian Unified National Health System (SUS), thus restraining the system from other relevant actions when, by design, it works to prevent inequity. Secondly, population-based interventions – taxes and incentives, health warnings, marketing regulation, and the creation of healthy public spaces

¹ Faculdade de Medicina, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brasil.

Correspondence

M. I. Schmidt
Faculdade de Medicina,
Universidade Federal do Rio Grande do Sul,
Rua Ramiro Barcelos 2600,
sala 518, Porto Alegre, RS
90035-003, Brazil.
maria.schmidt@ufrgs.br



– aimed to decrease risk factors and disease incidence, are potentially very cost-effective against NCD inequities, given their wide reach and little requirement of personal agency³. We will propose possible options for such interventions, focusing on the burden of diabetes.

Population policies that aim to decrease diabetes incidence and its complications include: increased taxes on sugar sweetened beverages; front-of-package, easy-to-read food labels; life-course approaches, such as breastfeeding stimulation; healthy food policies for schools and governmental installations; incentive of family farmers to help produce and market healthy foods; strong measures against food marketing to children; restrictions to air pollution; and redesign of urban architecture, including bike paths, to promote physical activity^{4,5,6,7}. This approach of low personal agency, population-based actions can work well, as proven by Brazil's radical decrease of tobacco smoking. However, its control of other risk factors, including unhealthy eating and harmful use of alcohol, has been blocked by political resistance fueled by economic interests. A lack of such policies may explain why many metabolic risk factors in Brazil have worsened, including a 110% increase in adiposity over the last three decades⁸.

Among possible interventions to decrease diabetes-related inequities with health care, those leading to increased social support have been best examined and have improved diabetes outcomes⁹. Moreover, any cost-effective intervention from SUS to improve care for those affected, especially at the primary care level, can also reduce health inequities.

Finally, we must intervene directly on the social determinants of health to integrate and align them with relevant intersectoral policies¹⁰. As an example, cash transfer programs in Brazil have likely contributed to the 85% decline in household burning of solid fuels⁸, which is a diabetes risk factor. However, they were not paired with enough policies to promote healthy eating and active lifestyles. Greater public policies are needed to confront vendors of food corporations who have sensed a new market for ultra-processed foods¹¹. The resulting imbalance may have increased the burden of obesity, and thus of diabetes, among cash transfer recipients and their families. A recent review has summarized the effects of social determinants of health in diabetes and looked for evidence to support recommendations, including those from natural experiments on the impact of neighborhood-level interventions regarding obesity, diet, and physical activity¹².

Thus, to confront inequities in NCDs, multiple policies must be integrated and aligned with each other – those related to health care with those aiming to impact the population, those aimed to decrease risk factors with those directly aimed to reduce social inequities. Policies designed to confront the syndemic of obesity, climate change, and undernutrition¹³ and paradigms such as planetary health inspire actions for sustainable development goals, which include a decrease of premature mortality caused by NCDs. However, these collective health actions require social participation and effective communication to oppose growing voices that favor “individual freedom” over social responsibility and the collective needs of society.

Contributors

M. I. Schmidt and B. B. Duncan contributed to all stages of drafting the text.

Additional informations

ORCID: Maria Inês Schmidt (0000-0002-3837-0731); Bruce B. Duncan (0000-0002-7491-2630).

1. Macinko J, Mullachery PH. Education-related health inequities in noncommunicable diseases: an analysis of the *Brazilian National Health Survey*, 2013 and 2019. *Cad Saúde Pública* 2022; 38 Suppl 1:e00137721.
2. Cousin E, Schmidt MI, Stein C, Aquino EC, Gouvea ECDP, Malta DC, et al. Premature mortality due to four main non-communicable diseases and suicide in Brazil and its states from 1990 to 2019: a Global Burden of Disease Study. *Rev Soc Bras Med Trop* 2022; 55 Suppl 1:e0328.
3. Capewell S, Capewell A. An effectiveness hierarchy of preventive interventions: neglected paradigm or self-evident truth? *J Public Health Oxf Engl* 2018; 40:350-8.
4. Wareham NJ, Herman WH. The clinical and public health challenges of diabetes prevention: a search for sustainable solutions. *PLoS Med* 2016; 13:e1002097.
5. Adams J, Mytton O, White M, Monsivais P. Why are some population interventions for diet and obesity more equitable and effective than others? The role of individual agency. *PLoS Med* 2016; 13:e1001990.
6. White M. Population approaches to prevention of type 2 diabetes. *PLoS Med* 2016; 13:e1002080.
7. von Philipsborn P, Stratil JM, Burns J, Busert LK, Pfadenhauer LM, Polus S, et al. Environmental interventions to reduce the consumption of sugar-sweetened beverages: abridged cochrane systematic review. *Obes Facts* 2020; 13:397-417.
8. Stein C, Schmidt MI, Cousin E, Malta DC, Naghavi M, Oliveira PPV, et al. Exposure to and burden of major non-communicable disease risk factors in Brazil and its states, 1990-2019: the Global Burden of Disease Study. *Rev Soc Bras Med Trop* 2022; 55 Suppl 1:e0275.
9. Strom JL, Egede LE. The impact of social support on outcomes in adult patients with type 2 diabetes: a systematic review. *Curr Diab Rep* 2012; 12:769-81.
10. Marmot M, Bell R. Social determinants and non-communicable diseases: time for integrated action. *BMJ* 2019; 364:l251.
11. Collier N, DeKornfeld O. How junk food is transforming Brazil. *The New York Times* 2017; 14sep. <https://www.nytimes.com/video/international-home/100000005148449/junk-food-upriver-tbd.html>.
12. Hill-Briggs F, Adler NE, Berkowitz SA, Chin MH, Gary-Webb TL, Navas-Acien A, et al. Social determinants of health and diabetes: a scientific review. *Diabetes Care* 2020; 44:258-79.
13. Swinburn BA, Kraak VI, Allender S, Atkins VJ, Baker PI, Bogard JR, et al. The global syndemic of obesity, undernutrition, and climate change: The Lancet Commission report. *Lancet* 2019; 393:791-846.

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