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Junk food and sugar-sweetened beverage taxes: Likely to produce numerous benefits in NZ

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Poor diet is a major risk factor for excess weight gain and obesity-related diseases, including cardiovascular diseases, type 2 diabetes mellitus, osteoarthritis, and multiple cancers. In this blog we summarise our recent modelling work that suggests that the implementation of taxes on unhealthy foods and beverages in Aotearoa New Zealand (NZ) will lead to health gains, health system cost-savings, and reductions in health inequalities.

Introduction

Poor diet (containing energy-dense foods with high levels of sugar and fat) is an important driver of the global obesity epidemic.[1-4] Moreover, both poor diet and obesity are major risk factors for noncommunicable diseases, including cardiovascular diseases, type 2 diabetes, musculoskeletal disorders (eg, osteoarthritis), and certain forms of cancer (eg, endometrial, breast, ovarian, prostate, liver, gallbladder, kidney, and colon).[1, 3, 5, 6] The global food system is also a driver of GHG emissions,[7] meaning changes in consumer

diets can contribute to reducing greenhouse gas (GHG) emissions – which in turn can mitigate the indirect effects of climate change back onto human health.[8, 9]

The World Health Organization (WHO) has specifically recommended taxation of unhealthy foods and beverages as a tool to address obesity and noncommunicable diseases in children and adults.[10, 11] To date, at least 40 different jurisdictions (including cities, states, and countries) have implemented taxes on sugar-sweetened beverages (SSB).[12-14] There are a number of different types of policies that have been implemented around the world to reduce SSB consumption, including excise taxes (eg, Mexico,[15, 16] the United Kingdom,[12, 13] Saudi Arabia,[17] etc.), import bans (eg, Tokelau [18]), and bans on unlimited refills (eg, France [19]).

A number of jurisdictions have also implemented taxes on junk food or other products. For example, in addition to an excise tax on SSB, Mexico has implemented an eight percent *ad valorem* tax on nonessential caloric-dense foods with energy density ≥275kcal/100g.[20-22] Denmark introduced a tax of 16 Danish Kroner per kilogram of saturated fat for products exceeding 2.3g saturated fat per 100g fat in October 2011.[12, 14, 23] Taxed products in Denmark included meat, dairy products, and animal fats, as well as vegetable oils and fats and items containing these products.[12, 23] However, the tax was abolished in 2013.[12, 14, 23]

Taxes on food and beverages will have different health impacts by context, due to the habits and culture around food and the array of food products available. There is also the question of how these different policies rank in terms of impact in any given country. In our recent study we compared the potential impacts of ten different real-world food and beverage taxes (Table 1) on health gains (in quality-adjusted life years (QALYs)), health system costs, and GHG emissions as if they had been implemented in NZ.

Table 1. Details of tax packages selected for inclusion

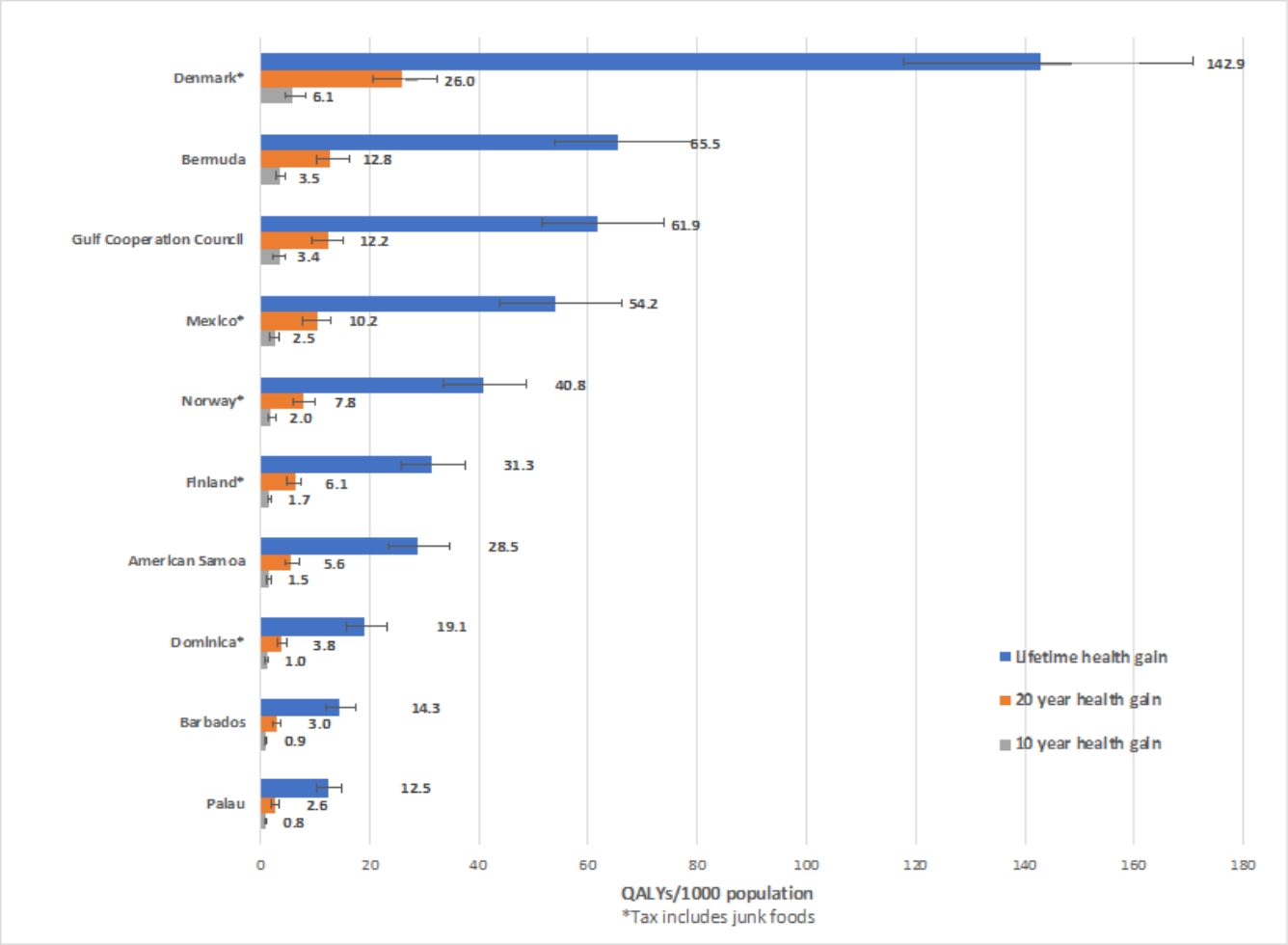
Jurisdiction	Type of tax(es)	Tax details[1,2]
American Samoa	excise tax and import tariff on SSB	$0.56/L
Barbados	*ad valorem* tax on SSB	10%
Bermuda	*ad valorem* tax on SSB	50%
Denmark	(1) excise duty on saturated fat (2) excise duty on chocolate and sweets	$3.08/kg saturated fat $4.9/kg
Dominica	(1) excise tax on SSB (2) excise tax on foods with high sugar content	10% 10%
Finland	(1) excise duty on SSB (2) excise duty on confectionary and ice cream	$0.43/L for SSB and juices; $0.21/L for artificial sweetener-based soft drinks and waters $1.91/kg
Gulf Cooperation Council[3]	*ad valorem* excise tax on carbonated beverages and energy drinks	50% for carbonated beverages; 100% for energy drinks
Mexico	(1) excise tax on SSB (2) *ad valorem* tax on junk food	10% 8%
Norway	(1) excise tax on SSB (2) excise tax on chocolate and sugar products	$0.47/L for prepared soda products; $2.85/L for concentrates (syrups) with added sugar; $0.24/L for juices and syrups based on fruits or vegetables without added sugar; $1.43/L for concentrates without added sugar $2.84/kg
Palau	import tax on SSB	$0.37/L

[1]Tax rates shown are most recent rates for taxes that have changed over time
[2]NZ Dollars 2011
[3]Gulf Cooperation Council members include Saudi Arabia, the United Arab Emirates (UAE), Bahrain, Qatar, Oman, and Kuwait
SSB = sugar sweetened beverages
NZD = New Zealand Dollar

What level of benefits does the new NZ modelling show?

Our recent modelling work indicated that the health gains ranged from 12.8 QALYs per 1000 population over the life course of the population alive in 2011 for the import tax on sugar sweetened beverages (SSB) in Palau to 150 per 1000 population for the excise duties on saturated fat, chocolate, and sweets in Denmark (Figure 1). Most of the estimated health impact of the real-world taxes was through reductions in body mass index (BMI), which accounted for approximately 80% or more of the total results. All of the modelled tax policies were cost-saving and would potentially result in higher health gains for Māori than for non-Māori. Therefore, this intervention could assist in reducing health inequalities in NZ if well-implemented. The modelled taxes resulted in small decreases in GHG emissions from baseline diets, ranging from -0.2% for the tax on SSB in Barbados to -2.8% for Denmark's tax package. Generally, the taxes that impacted the intake of many food groups (eg, excise duties on saturated fat, chocolate, and sweets in Denmark) or the SSB taxes with the highest rates (eg, Bermuda and Gulf Cooperation Council) were the most effective, while taxes that only targeted SSB at a lower rate were the least effective.

Figure 1. Health gains in QALYs per 1000 population for tax policies at a 3% discount rate with 95% uncertainty intervals in 2011.



Potential implications for research and NZ health agencies

These modelling results emphasise the potential health and economic benefits of real-world food and beverage taxes. However, implementation of food and beverage taxes requires consideration of factors beyond these simulation results, including social and political acceptability, environmental impacts, and the practicalities of tax administration. Furthermore, monitoring and evaluation of real-world tax policies is critical for the evaluation of effectiveness.

In summary, recent modelling showed that the implementation of real-world food and beverage taxes in NZ would likely result in health gains, cost-savings to the health system, and modest reductions in GHG emissions. Furthermore, such taxes could assist in reducing health inequalities in NZ if well-implemented. Food and beverage taxes should be considered by policy-makers in NZ as part of a national strategy to address poor diet and reduce obesity and related health conditions.

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