

A review of sugar-sweetened beverages taxation in Saudi Arabia and United Arab Emirates

Ayoub Al-Jawaldeh¹, Anne-Marie Perucic², Asmus Hammerich¹, Adham Rashad Ismail Abdel Moneim³, Eman T Ibrahim¹, Fatma Essa ALMatrooshi⁴, Majid Mqbel Alkhalaf⁵, Mondher Letaief⁶, Nouf Khamis Alali⁴, Taghreed Mohammed Alghaith⁷ and Marwa MS Abbass¹

¹WHO Regional Office for the Eastern Mediterranean, Cairo, Egypt (Correspondence to Marwa Abbass: marwamagdy.who@gmail.com). ²Health Promotion Department, World Health Organization. ³World Health Organization Country Office, Saudi Arabia. ⁴Ministry of Health and Prevention, United Arab of Emirates. ⁵National Nutrition Committee, Saudi Food and Drug Authority, Saudi Arabia. ⁶World Health Organization Country Office, United Arab of Emirates. ⁷Public Health Authority, Saudi Arabia.

Abstract

Background: The World Health Organization recommends taxes on sugar-sweetened beverages (SSBs) as part of cost-effective interventions to prevent diet-related noncommunicable diseases.

Aim: To analyse the adoption and implementation of SSBs taxation in Saudi Arabia and United Arab Emirates and its impact on obesity rates.

Methods: Using a semi-structured questionnaire, we collected information on progress with implementation of SSBs taxes in Saudi Arabia and United Arab Emirates between January 2015 and December 2023. We searched literature published in Arabic and English on the subject and used the WHO acceleration scenario modelling tool to forecast the potential impact of SSBs on overweight and obesity in the 2 countries over the same period.

Results: Both countries implemented SSBs taxation consistently between 2015 and 2023, generating additional revenue and reducing obesity rates. The acceleration scenario estimates showed that SBB taxation could reduce overweight prevalence among children and adolescents (aged 5–19 years) from 38.2% in 2020 to 34.4% in 2030 in Saudi Arabia and from 37.0% to 34.6% in United Arab Emirates, and could reduce obesity rate by approximately 12.7% in Saudi Arabia and 9.5% in United Arab Emirates in the same period.

Conclusion: This review provides further evidence that SSBs taxes can be effective in reducing sugar consumption, thereby reducing overweight and obesity rates. However, to effectively combat obesity and overweight among children and adolescents, taxation policies must be implemented alongside other strategies, including public health campaigns to increase awareness about the health risks associated with excessive sugar consumption.

Keywords: sugar-sweetened beverages, SSB, obesity, overweight, sugar consumption, tax, taxation, sugar tax, Saudi Arabia, UAE

Citation: Al-Jawaldeh A, Perucic A, Hammerich A, Moneim ARIA, Ibrahim ET, ALMatrooshi FE, et al. A review of sugar-sweetened beverages taxation in Saudi Arabia and United Arab Emirates. *East Mediterr Health J.* 2024;30(11):746–756. <https://doi.org/10.26719/2024.30.11.746>.

Received: 25/02/2024; Accepted: 28/10/2024

Copyright: © Authors 2024; Licensee: World Health Organization. EMHJ is an open access journal. All papers published in EMHJ are available under the Creative Commons Attribution Non-Commercial ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

Background

The change in dietary and nutrition patterns have resulted in an increase in overweight and obesity prevalence among children and adolescents in the Gulf Cooperation Council (GCC) countries. In 2022, nearly half of the children and adolescents in these countries were overweight and one-fifth were obese, and nearly two-third of adults were overweight and one-third were obese (1). One of the adverse effects of consuming sugar-sweetened beverages (SSBs) is overweight and obesity, and the subsequent emergence of diet- and nutrition-related noncommunicable diseases (NCDs) (2). In addition to excessive sugar consumption, several factors contribute to obesity and weight gain, such as sedentary lifestyle, hereditary factors and food choices and habits (3).

NCDs account for 69–83% of all deaths in the GCC countries, with cardiovascular disease as the leading cause of NCDs-related mortality (4). In 2021, the International Diabetes Federation estimated that the

Middle East and North Africa had the highest regional prevalence of diabetes: 1 in 6 adults or 16.2%. Saudi Arabia is among the 5 countries with the highest age-adjusted prevalence of people with diabetes (age 20–79 years) (5).

Worldwide concerns about the use of free sugars are increasing, especially when SSBs-rich diets caused 242 000 deaths and 6.31 million disability-adjusted life years (DALYs) in 2019 (6). SSBs increase the overall energy intake and decrease the consumption of healthy foods, causing weight gain and bad eating habits, and increasing the risk of NCDs (7).

In 2018, the mean daily intake of SSBs in Saudi Arabia was nearly double the global estimates (8). Following the WHO recommended cost-effective interventions (best buys) to combat NCDs (9), the GCC countries began adopting the Common Customs Law of the GCC States, which aims to develop existing cooperation in various fields. During its 36th Session in Riyadh in 2015, the Supreme Council of the GCC established the main principles for the taxation system to be implemented by

all GCC Member States. It was a major undertaking with the introduction of a brand new taxation scheme, which included excise taxes on alcohol, tobacco and SSBs (10). Accordingly, the monarchy States of the Arab Gulf enacted a tax regime that increased the cost of energy drinks by 100% and sodas (any beverage containing dissolved carbon dioxide gas including flavoured sparkling water) by 50% (10).

Saudi Arabia was the first GCC country to implement SSBs excise taxation in 2017, with regulations and guidelines to facilitate implementation (11,12). In Saudi Arabia and United Arab Emirates (UAE), 50% excise taxes were applied to sugar-sweetened non-carbonated mineral waters (e.g. lemonade), fruit drinks (less than 100% fruit juice), sugar-sweetened ready-to-drink tea or coffee, sugar-sweetened syrups, liquid concentrates, and powdered beverage preparations (13). Simultaneously, in UAE, sin taxes were introduced in 2017 (11), and the UAE Cabinet adopted a decision to expand the list of excise-taxable products to include other sweetened beverages beginning from 2020 (14). The decision required manufacturers to specify the sugar content of their products so that consumers could make informed healthy choices. Due to the SSBs taxation, SSBs sales decreased from 5.4% to 1.3% in Saudi Arabia and from 7.4% to 5.9% in UAE (3).

Since the identification of health taxes globally as an effective intervention for reducing NCDs (15,16), 108 countries have applied national-level excise taxes on at least one type of SSBs, while 11 Eastern Mediterranean Region (EMR) countries have applied the taxes on carbonated SSBs (13). The GCC countries have the world's highest excise SSBs taxes (13), it is therefore very important to document lessons from the implementation for learning by other countries, including the challenges and solutions. This review was therefore conducted to analyse the adoption and implementation of SSBs taxation in Saudi Arabia and UAE and its impact on obesity and overweight rates.

Methods

Data collection

Saudi Arabia and UAE have applied *ad valorem* excise taxes of more than 20% on carbonated SSBs. In December 2023, a semi-structured questionnaire was developed, in English language, and shared by email with representatives of the ministries of health and WHO country offices of the 2 countries. The questionnaire was based on the recommended SSBs taxation strategies (13,17) and contained questions on: the proposal approval process, availability of a comprehensive and advocacy strategy, recommended financial reform and/or fiscal need as policy windows, multisectoral support, use of strong scientific evidence to counter industry resistance, how industry resistance was countered, and existing technical and legal capacities. We searched PubMed, Scopus and Google Scholar databases for relevant literature and conducted manual search on the WHO websites (1). We

also searched relevant government documents, including policy briefs, reforms and manuscripts in the Saudi Arabia and UAE. The following search terms were used: “Saudi Arabia” OR “KSA” OR “United Arab of Emirates” OR “UAE” AND “sugar” OR “juice” OR “sugar sweetened beverages” “SSBs” OR “soft drinks” OR “excise” OR “taxation” OR “taxes” OR “overweight” OR “obesity” AND “policy” OR “reform”. Only Arabic and English publications between January 2015 and December 2023 were included. Data were collected from the global report on the use of SSBs taxes (13), the global database on the implementation of nutrition action (GINA) (11), global dietary database survey (8), policy documents (10,12,18), and government websites of the case study countries (14,19,20), in addition to published studies (22-24).

The acceleration scenario modelling tool

The acceleration scenario modelling tool is a nutrition modelling tool developed by WHO to analyse the effect of a selected intervention (in this case a country that has 50% SSBs tax) on body mass index (BMI) and body weight across targeted age groups. The analysis commenced with the acquisition of age-specific BMI data for children and adolescents aged 5–19 years from datasets provided by the Saudi Arabia and UAE NCD Risk Factor Collaboration. For children and adolescents, pre-intervention data were averaged across age groups without adjustment for proportional representation. We then analysed changes in the BMI distribution pre- and post-intervention to calculate and determine the increase or decrease in the number of people within each BMI category, thereby assessing the alterations in obesity and overweight categories. BMI ≥ 23 kg/m² is regarded as obesity and BMI ≥ 20 kg/m² as overweight for 5–19-year-olds. To quantify the relative change in the percentage of obese and overweight populations by the target year, we applied the calculated changes to a business-as-usual projection of obesity and overweight prevalence within the specified age group. The business-as-usual scenario assumes that no level of the selected policies has been implemented in the country. This comprehensive approach yields 4 key final outputs to generate results: (a) obesity prevalence in the target year, (b) the trajectory towards achieving this prevalence, (c) overweight prevalence in the target year, and (d) the trajectory towards achieving this overweight prevalence (25,26).

Results

Saudi Arabia and UAE consistently applied the SSBs taxation during the period of analysis, leading to a notable decrease in obesity rates among children and adolescents. The GCC played a significant role in learning and experience-sharing on tax policy systems among Member States.

Relationship between SSBs and fruit juices consumption and prevalence of overweight, obesity and diabetes

In 2018, the mean daily intake of SSBs in Saudi Arabia was 244.1 and average servings per week was 1.0, while in UAE they were 132.7 and 0.5, respectively (Table 1). The mean daily intake of fruit Juice in Saudi Arabia was 22.2 and average servings per week was 0.09, while in UAE they were 24.5 and 0.10, respectively. In 2021, the prevalence of diabetes among adults was 18.7% in Saudi Arabia and 16.4% in 2022, the prevalence of overweight among children and adolescents was 41.4% in Saudi Arabia and 45.3% in UAE .

Implementation of SSBs taxation

Both countries implemented the following strategies to strengthen their capacity to implement SSBs taxation (Table 2):

Strategically framing SSBs tax

The adoption of a common excise tax system by the GCC countries, was in alignment with 2 of the 3 pillars of Saudi Arabia's Vision 2030: A vibrant society and a thriving economy, and UAE adopted the unified excise tax agreement as part of its commitment to regional collaboration and international best practices. This foundational step provided a structured framework and positioned the SSBs tax proposal as part of a broader regional strategy. Both countries addressed the issue openly in the media together with other legislative initiatives to reduce the prevalence of diet-related NCDs. Additionally, reporting and referencing SSBs taxes applied in other GCC countries was performed in the UAE. They reformed their tax systems concurrently with the implementation of SSBs taxation, as a top government priority to help increase and diversify their revenue sources.

Financial reform and/or fiscal need

In addition to the excise taxes, in 2018, Saudi Arabia imposed 50% tax on carbonated beverages, 100% tax on energy drinks, additional 5% value added tax (VAT) on all consumer goods, including beverages. In 2019, the Zakat, Tax and Customs Authority (ZTCA) began implementing a unified 50% selective excise tax on sweetened drinks, and in 2020, the government increased the standard VAT to 15%, as part of government’s financial reform for

2025–2029. Similarly, in 2017, UAE began levying 50% tax on carbonated drinks and 100% tax on energy drinks and began levying 50% excise tax on sweetened drinks and any product with added sugar or other sweeteners in 2019.

Building a multisectoral coalition of support

In Saudi Arabia, several stakeholders involved in public health promotion are categorized into different groups such as health-related agencies, non-health-related agencies, and the private sector. The health-related agencies include the Public Health Authority (PHA), the Ministry of Health and the Saudi Food and Drug Authority (SFDA), while the non-health-related agencies include the Ministry of Trade and ZTCA. All these stakeholders worked together under the government's legislation and were assigned specific roles that would ensure continued progress towards achieving the national public health goals.

In UAE, the initial step was to establish a multisectoral committee which included representatives of different entities including the Ministry of Finance and Ministry of Health and Prevention. To ensure approval and successful implementation of the excise tax, UAE strategically developed a proposal that emphasized the potential health benefits of reducing the consumption of harmful products such as energy and sugary beverages. The proposal highlighted the alignment of such initiative with global health standards and economic diversification goals. To gain public support, UAE launched a mass media campaign to educate the public about the health risks associated with energy and sugary beverages.

Strong scientific evidence to counter industry resistance

There was a strong resistance from the beverage industry against the SSBs tax enforcement in Saudi Arabia. WTO reported a request from the European Union, Switzerland and United States regarding the selective tax on certain imported products in Bahrain, Saudi Arabia and UAE. A 2020 study aimed to identify the impact of Saudi Arabia's sugary drink tax on prices and purchases found that the prices of carbonated drinks increased by 67% post-implementation and the annual purchases (volume per capita) of soda and energy drinks reduced by 41% in 2016 and 58% in 2018 (22).

A literature review conducted among the GCC countries to investigate the impact of implementation of sin

Table 1 Mean consumption of SSBs and fruit juice and prevalence of overweight and obesity among children and adults in Saudi Arabia and UAE (1,5,8)

	Mean daily SSBs intake (g/day) (2018)	Servings/ week (2018)	Mean daily fruit juice intake (g/day) (2018)	Servings/ week (2018)	Prevalence of overweight among adults (2022)	Prevalence of obesity among adults (2022)	Prevalence of overweight among children (5–19 years) (2022)	Prevalence of obesity among children (5–19 years) (2022)	Prevalence of diabetes 2021
KSA	244.1	1.0	22.2	0.09	71.8	40.6	41.4	18.1	18.7
UAE	132.7	0.5	24.5	0.10	71.3	32.1	45.3	21.4	16.4

Table 2. SSBs tax implementation and structure in Saudi Arabia and UAE (13,24)

Framing the SSBs tax		Reference to multilateral institutions	Reporting of other countries' SSBs taxation	Multisectoral coalition		Tax type	Tax base	Tax rates
Health issues	Fiscal priorities			Supportive	Opposing			
<p>Saudi Arabia</p> <p>High rates of obesity and/or NCDs</p> <p>High-risk population groups—children</p> <p>Unhealthy food environments</p>	<p>Reducing budget deficit</p> <p>raising (non-oil) revenue</p> <p>Economic Growth</p> <p>Tax reform</p> <p>Economic cost of NCDs</p>	<p>Health (WHO)</p> <p>Economic (WTO, IMF)</p> <p>Regional institutions (GCC)</p>	<p>GCC countries</p>	<p>Government, experts, information & messaging</p> <p>Constituency building</p>	<p>WTO experts: information & messaging</p> <p>Legal challenges</p> <p>Policy substitution</p>	<p>Excise tax: <i>ad valorem</i></p>	<p>Carbonated non-alcoholic beverages (sugar sweetened, unsweetened, other sweetener)</p> <p>Energy drinks</p> <p>Sugar-sweetened non-carbonated mineral waters (e.g. lemonade)</p> <p>Fruit drinks (less than 100% fruit juice)</p> <p>Sugar-sweetened ready-to-drink tea or coffee</p> <p>Syrups</p> <p>Liquid concentrate or powdered beverage preparation</p>	<p>Sugar-sweetened drinks and carbonated drinks: 50% of price exclusive of excise and VAT</p> <p>Energy drinks: 100% of price exclusive of excise and VAT</p>
<p>UAE*</p> <p>High rates of obesity and/or NCDs</p> <p>Tooth decay</p> <p>Economic cost of NCDs</p> <p>Unhealthy food environments</p> <p>High-risk population groups</p> <p>Fiscal priorities</p>	<p>Increasing (non-oil) revenue</p> <p>Economic growth</p> <p>Tax reform</p>	<p>Health (WHO)</p> <p>Economic (WTO)</p> <p>Regional institution (GCC)</p>	<p>Saudi Arabia</p> <p>Bahrain</p> <p>GCC countries</p>	<p>Government, experts, influencers: information and messaging</p>	<p>Industry (WTO): information & messaging</p> <p>Constituency building, policy substitution</p> <p>Legal challenges</p>	<p>Excise tax: <i>ad valorem</i></p>	<p>Carbonated non-alcoholic beverages (sugar sweetened, unsweetened, other sweetener)</p> <p>Energy drinks</p> <p>Sugar-sweetened non-carbonated mineral waters (e.g. lemonade)</p> <p>Fruit drinks (less than 100% fruit juice)</p> <p>Sugar-sweetened ready-to-drink tea or coffee</p> <p>Syrups, liquid concentrate or powders beverage preparation</p>	<p>Sugar-sweetened drinks and carbonated drinks: 50% of price exclusive of excise and VAT</p> <p>Energy drinks: 100% of price exclusive of excise and VAT</p>

*Milk-based drinks will be taxed if less than 75% content is milk-based or milk substitutes

taxes on soda and energy drinks concluded that SSBs taxes can reduce sugary drinks consumption, obesity rates and related health issues (3). It argues that the application of taxes based on sugar content could incentivize manufacturers to innovate and reformulate products with healthier alternatives, potentially leading to improved public health outcomes. Another study that investigated the quality and safety of energy drinks in Saudi Arabia revealed that the bacterial population in all tested energy drinks decreased by at least 4.0 log CFU/ml, showing the detrimental effects of these drinks on the survival of beneficial microorganisms (23). The study recommended that energy drinks should be safer.

To address industry resistance, UAE used strong scientific evidence to back-up its excise tax proposal. The proposal included substantial information on the negative effects of sugar on population health and its correlation with the development of NCDs. This helped industry players to comprehensively understand the health-related concerns that motivated the taxation and demonstrated a commitment to evidence-based policymaking, which reinforced the legitimacy of the proposed excise tax.

The Saudi Arabia Public Health Authority held bilateral meetings with countries and workshops with the companies to discuss their concerns and present the evidence. UAE held similar engagement with industries affected by the excise tax.

Technical and legal capacities

By the Royal Decree No. 401 (02/03/2021) of Saudi Arabia, the responsibility for developing general health policies, plans, programmes, and initiatives, and for reviewing, evaluating and supervising implementation of these policies and interventions aiming to achieve the Saudi 2030 Vision Pillars (a vibrant society, a thriving economy and an ambitious nation) lies in the PHA (20). The goal of the vibrant society pillar is to increase the average life expectancy from 74 to 80 years by offering a fulfilling and healthy life and improving healthcare services for the Saudi Arabia population. PHA has a Board of Directors led by the Minister of Health and includes representatives of health and non-health sectors. The board approves all PHA policies and strategic plans and follows up on implementation. A Health in All Policies Committee (HAPC) was established by the Royal Decree No. 79435 (19/07/2022) to build and activate evidence-based policies and to prioritize health determinants and health equity. The PHA Board of Directors and HAPC discuss and review any tax proposals. ZTCA also collaborates with PHA in designing fiscal policies for products, including subsidies and taxes on food and tobacco products. ZTCA is responsible for completing all the technical and legal requirements.

The acceleration scenario output

The acceleration scenario estimated that implementing 50% taxation on SSBs may contribute to reversing the increasing trends in overweight and obesity in the 2 countries between 2020 and 2030 (Table 3, Figures 1 & 2), in combination with other interventions. Between 2020 and 2030, the prevalence of overweight among children and adolescents aged 5–19 years in Saudi Arabia could decrease from 38.2% to 34.4% and from 37.0% to 34.67% in UAE. The scenario estimates the decrease rate in overweight to be approximately 10% in Saudi Arabia and 6.5% in UAE and estimates that the prevalence of obesity among children and adolescents aged 5–19 years could decrease from 19.7% to 16.7% in Saudi Arabia and from 18.0% to 16.3% in UAE. It estimates the decrease rate in obesity to be approximately 12.7% in Saudi Arabia and 9.5% in UAE.

Discussion

The GCC countries introduced an operational policy in 2017 to reduce NCDs-related unhealthy diets by imposing excise taxes that would raise the cost of energy drinks by 100% and soft drinks by 50% (10). This is the highest SSBs tax in the world; the majority of other SSBs tax rates are between 10 and 20% (13). This was possible because of evidence showing that high rates of obesity and other NCDs were due to unhealthy food consumption, the fiscal priorities of the GCC countries, and the supportive multisectoral coalition among the health and non-health related agencies. Strong scientific evidence, multisectoral engagement and collaborations, analysis of the environment and pattern of factors influencing adoption and implementation, and the use of WTO instruments have been identified to be effective in countering industry resistance to SSBs taxation.

The presentation of the tax proposal will determine its chances of success. In Saudi Arabia and UAE, SSBs taxation was discussed in the context of other policy measures to address diet-related NCDs and in support of government's efforts to enhance public health and prevent chronic diseases directly linked to sugar consumption. References were made to the WHO recommendations regarding diet-related fiscal policy and to the recommendations of economic institutions such as the International Monetary Fund (IMF) during media engagements (24).

In GCC countries, the need for financial reforms provided a unique opportunity for passing the excise taxes policy relatively quicker than in other countries (13), similar to Hungary and Fiji which had passed their health-related taxes to address budget constraints (27). In contrast, the objective of the SSBs tax in the United Kingdom was to promote industry reformulation, not just to reduce SSBs consumption (13).

Certain messages appear to be effective in raising awareness and generating support for SSBs taxes in

Table 3. Overweight and obesity prevalence (%) in baseline and target years among children and adolescents aged 5–19 years

Saudi Arabia		Obesity prevalence (%)			Overweight prevalence (%)			
		Year	Overall	Male	Female	Overall	Male	Female
Scenario	Baseline	2020	19.2	22.0	15.7	38.2	41.7	34.1
<i>Business-as-usual at target year</i>	Business-as-usual	2030	24.0	27.7	19.4	44.7	50.0	38.4
<i>Policy implementation scenario at target year</i>	SSBs taxes	2030	16.7	17.8	14.8	34.4	36.6	31.2
UAE		Obesity prevalence (%)			Overweight prevalence (%)			
		Year	Overall	Male	Female	Overall	Male	Female
Scenario	Baseline	2020	18.0	19.4	16.4	37.0	38.6	35.1
<i>Business-as-usual at target year</i>	Business-as-usual	2030	22.1	23.8	20.0	42.5	45.2	39.4
<i>Policy implementation scenario at target year</i>	SSBs taxes	2030	16.3	17.3	15.1	34.6	36.6	32.2

different contexts. Taxes can help raise more money if they are framed as a health promotion measure, which can also help them gain political support (28). In Mexico, the public health advocates played a major role in shaping the tax design process to address national diabetes and obesity epidemics, although the tax policy was passed as part of broader financial reforms (13,29).

A strong multisectoral coalition of supporters within (Ministry of Finance, Ministry of Health, Ministry of Agriculture, etc.) and beyond (civil society organizations, academics, community and consumer advocacy groups, etc.) the government is key to successful adoption of SSBs taxation (30). This strong support proved to be an important facilitator in the development and implementation of SSBs taxation in Saudi Arabia and UAE.

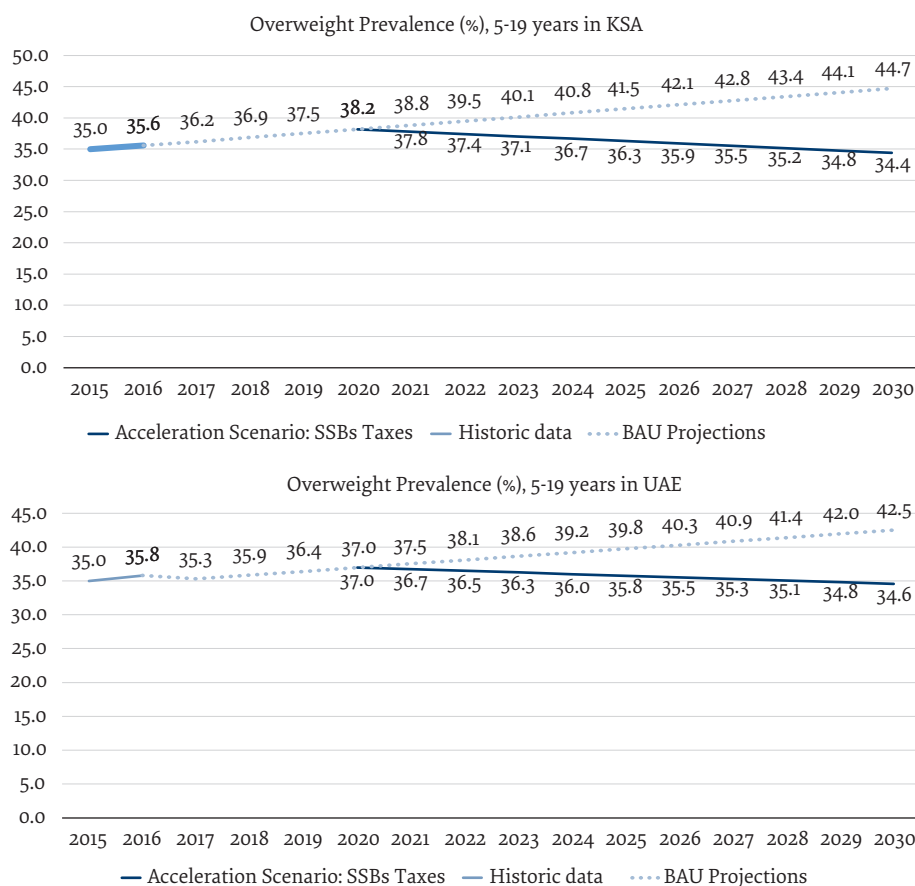
There was resistance from the industry and requests or inquiries through specific WTO committees from the 2 countries (24), and concerns from WTO regarding the limited scientific evidence to justify certain tax rates and beverage categories. In response, the beverage industry allegedly cut back retail prices and decided to bear a portion of the tax burden (31).

Among the arguments used by industry interests to oppose the introduction of SSBs taxes were financial instability, loss of profit due to low sales, impact on employment, the measures being voluntary rather than legal, and the regressive nature of SSBs taxes (32). Both countries countered these by presenting the justification for health and economic SSBs taxation, with evidence of positive economic and health outcomes from countries that have already implemented SSBs taxation (13). Having this strong evidence base to support each stage of the policy process helps make SSBs taxation context-appropriate, increases public and political support, and ultimately strengthens the feasibility of the policy (30). It is important to anticipate and counter oppositions, including legal challenges prior to and following tax implementation, anti-tax media campaigns emphasizing the anticipated harms to businesses and jobs, and anti-government sentiments (17).

Since empirical evidence is needed to counter industry resistance, earmarking revenues for health and social spending can help offset any regressive impacts of SSBs tax (28). Using a tax projection model over 5 years (2025–2029), a moderate 20% tax increase in Saudi Arabia would lead to a 10% decrease in SSBs consumption. Reinvesting the additional revenue from a single year of projected health tax increase under the moderate-increase scenario could finance 15 years' worth of NCD prevention and control measures, which could save 210 000 lives and up to SAR 112 billion (about US\$ 29.8 billion) (33). This could be increased to SAR 279 billion (about US\$ 74.4 billion) with a more ambitious 50% health tax (22,31,33).

Monitoring and evaluation of tax activities for effectiveness by research institutions is particularly important to tax survivability. Saudi Arabia recorded a 35% decline in carbonated drink sales volume post-tax

Figure 1 Acceleration scenario for SSBs taxes showing the decrease in the prevalence of overweight among children and adolescents aged 5–19 years in Saudi Arabia and UAE, 2020–2030



implementation (22). A cross-sectional study showed a 19% decrease in soft drinks consumption after taxation in Saudi Arabia, with a higher reduction of 75% among obese participants (34). A study in UAE showed no statistically significant change in SSBs consumption by gender, age or nationality since the introduction of SSBs tax (35). The study recommends imposing a levy on frequently consumed SSBs or revisiting the levy by the gram, volume, or type of added sugar (or in combination) to make it more effective in reducing SSBs consumption.

Saudi Arabia, in cooperation with other GCC countries, plans to revise the excise tax rate to include sweetened beverages based on their level of sugar content (tiered volumetric approach), which may result in including other types of drinks, such as juices in the selective tax plan.

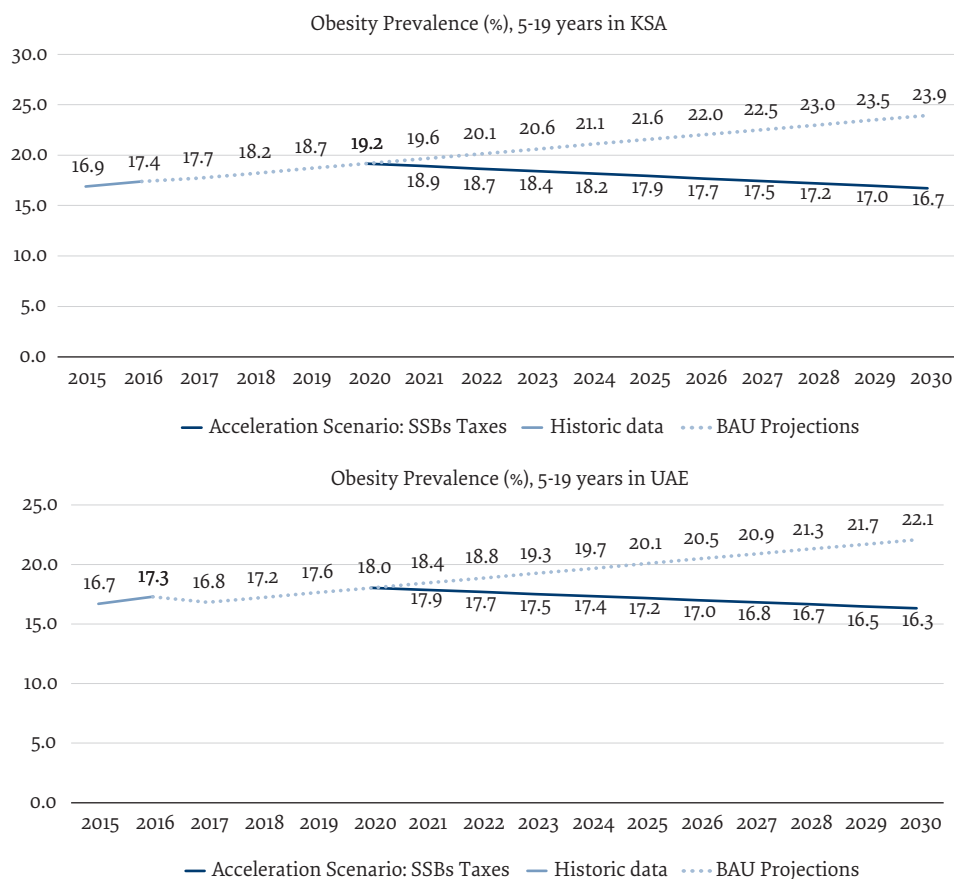
This review provides valuable insights into the impact of SSBs taxes in Saudi Arabia and UAE. However, it has some limitations. The study relied on data from only 2 countries, which may not fully represent the diverse economic and cultural context of the GCC region and other EMR countries. The acceleration scenario tool used for the projections has inherent uncertainties, therefore, the actual impact on obesity rates may vary. It is crucial to acknowledge that fiscal policies alone are not sufficient

to address obesity, other socioecological factors, such as community health awareness, availability of alternative healthy foods and food marketing practices, as well as socioeconomic factors like income and educational levels and cultural perceptions of nutrition and health also need to be addressed. The study also focused on children and adolescents, potentially overlooking the effects of SSBs taxes on adult populations.

Conclusion

Analysing the patterns of previous SSBs tax adoption may inform approaches by other countries. In both countries reviewed there was advocacy for the adoption of SSBs tax to enhance NCDs reduction and health system savings and there was opposition because of the regressivity and economic effects on the food industry. Delineating taxable product categories, with relevant evidence, establishing clear policy objectives and tax designs are important factors for enhancing tax effectiveness and survivability. The industry resistance and the complexity of tax implementation suggest the need for further studies to fully understand the long-term effectiveness and sustainability of SSBs taxation as a public health strategy. Delaying implementation of more substantial taxation on SSBs is stalling progress towards halting

Figure 2 Acceleration scenario for SSBs taxes showing the decrease in the prevalence of obesity among children and adolescents aged 5–19 years in Saudi Arabia and UAE, 2020–2030



the increase in obesity. The acceleration scenario for taxing SSBs and the ongoing efforts to combat obesity among children and adolescents highlight the need for a comprehensive strategy or action plan by countries so they can achieve the WHO targets by 2025. Alongside taxation policies on beverages, there is an urgent need

for comprehensive public health campaigns to increase awareness about the health risks associated with excessive sugar consumption.

Funding: None.

Conflict of interest: None declared.

Analyse du système de taxation des boissons sucrées en Arabie saoudite et aux Émirats arabes unis

Résumé

Contexte : L'Organisation mondiale de la Santé (OMS) recommande de mettre en place des taxes sur les boissons sucrées dans le cadre d'interventions présentant un bon rapport coût-efficacité pour prévenir les maladies non transmissibles liées à l'alimentation.

Objectif : Analyser le processus d'adoption et de mise en œuvre de la taxation sur les boissons sucrées en Arabie saoudite et aux Émirats arabes unis ainsi que son impact sur les taux d'obésité.

Méthodes : À l'aide d'un questionnaire semi-structuré, nous avons recueilli des informations sur l'état d'avancement de la mise en œuvre des taxes sur les boissons sucrées en Arabie saoudite et aux Émirats arabes unis entre janvier 2015 et décembre 2023. Nous avons effectué des recherches dans la littérature publiée en anglais et en arabe sur le sujet et utilisé l'outil de modélisation de scénarios d'accélération de l'OMS afin de prévoir l'impact potentiel de ces boissons sur le surpoids et l'obésité dans ces deux pays au cours de la même période.

Résultats : Entre 2015 et 2023, les deux pays ont mis en œuvre de manière cohérente une taxation sur les boissons sucrées, permettant ainsi de générer des recettes supplémentaires et de réduire les taux d'obésité. Les estimations issues du scénario d'accélération montrent que la taxation de ces boissons pourrait réduire la prévalence du surpoids chez les enfants et les adolescents âgés de cinq à 19 ans, passant de 38,2 % en 2020 à 34,4 % en 2030 en

Arabie saoudite et de 37,0 % à 34,6 % aux Émirats arabes unis, et pourrait réduire le taux d'obésité de près de 12,7 % et 9,5 %, respectivement dans ces deux pays, au cours de la même période.

Conclusion : La présente analyse démontre une fois de plus que les taxes sur les boissons sucrées peuvent contribuer à réduire la consommation de sucre et, par conséquent, à diminuer les taux de surpoids et d'obésité. Toutefois, en vue de lutter efficacement contre ces problèmes de santé chez les enfants et les adolescents, des politiques fiscales doivent être mises en œuvre parallèlement à d'autres stratégies, notamment des campagnes de santé publique visant à accroître la sensibilisation aux risques pour la santé liés à une consommation excessive de sucre.

استعراض للضرائب المفروضة على المشروبات المحلاة بالسكر في المملكة العربية السعودية والإمارات العربية المتحدة

أيوب الجوالدة، آن-ماري بروسيك، أزمويس همريتش، أدهم رشاد إساعيل عبد المنعم، إيمان إبراهيم، فاطمة عيسى المطروشي، مجيد مقبل الخلاف، منذر لطيف، نوف خميس العلي، تغريد محمد الغيث، مروة عباس

الخلاصة

الخلفية: توصي منظمة الصحة العالمية بفرض ضرائب على المشروبات المحلاة بالسكر، وذلك ضمن التدخلات العالية المددود للوقاية من الأمراض غير السارية المرتبطة بالنظام الغذائي.

الأهداف: هدفت هذه الدراسة إلى تحليل اعتماد وتنفيذ ضريبة على المشروبات المحلاة بالسكر في المملكة العربية السعودية والإمارات العربية المتحدة، وأثرها على معدلات السمنة.

طرق البحث: باستخدام استبيان شبه منظم، جمعنا معلومات عن التقدم المحرز في فرض ضرائب على المشروبات المحلاة بالسكر في المملكة العربية السعودية والإمارات العربية المتحدة في الفترة بين يناير/ كانون الثاني 2015 وديسمبر/ كانون الأول 2023. وقد بحثنا في الدراسات المنشورة باللغتين العربية والإنجليزية عن هذا الموضوع، واستخدمنا أداة المنظمة لإعداد نماذج سيناريوهات التسريع للتنبؤ بالأثر المحتمل للمشروبات المحلاة بالسكر في زيادة الوزن والسمنة في البلدين خلال الفترة نفسها.

النتائج: طُبِّق كلا البلدين باستمرار ضرائب على المشروبات المحلاة بالسكر بين عامي 2015 و2023، وأدى ذلك إلى تحقيق إيرادات إضافية والحد من معدلات السمنة. وأظهرت تقديرات سيناريو التسريع أن فرض الضرائب على المشروبات المحلاة بالسكر يمكن أن يقلل انتشاراً زيادة الوزن بين الأطفال والمراهقين (الذين تتراوح أعمارهم بين 5 سنوات و19 سنة) من 38.2% في عام 2020 إلى 34.4% في عام 2030 في المملكة العربية السعودية، ومن 37% إلى 34.6% في الإمارات العربية المتحدة، ويمكن أن يقلل معدل السمنة بنحو 12.7% في المملكة العربية السعودية، و9.5% في الإمارات العربية المتحدة في الفترة نفسها.

الاستنتاجات: يقدم هذا الاستعراض دليل إضافي على أن فرض الضرائب على المشروبات المحلاة بالسكر يمكن أن يكون فعالاً في الحد من استهلاك السكر، وهذا بدوره يجد من معدلات زيادة الوزن والسمنة. ولكن مكافحة السمنة وزيادة الوزن في صفوف الأطفال والمراهقين بفعالية تتطلب الجمع بين السياسات الضريبية واستراتيجيات أخرى، ومنها حملات الصحة العامة لزيادة الوعي بالمخاطر الصحية المرتبطة بالإفراط في استهلاك السكر.

References

1. World Health Organization. Global Health Observatory data repository: Noncommunicable diseases. Geneva: World Health Organization, n.d. <https://www.who.int/data/gho/data/indicators>.
2. Fidler Mis N, Braegger C, Bronsky J, Campoy C, Domellöf M, Embleton ND, et al. Sugar in infants, children and adolescents: A position paper of the European Society for Paediatric Gastroenterology, Hepatology and Nutrition Committee on Nutrition. *J Pediatr Gastroenterol Nutr.* 2017;65(6):681-696. doi: 10.1097/MPG.0000000000001733. PMID: 28922262.
3. Al-Jawaldeh A, Megally R. Impact evaluation of national nutrition policies to address obesity through implementation of sin taxes in Gulf Cooperation Council countries: Bahrain, Saudi Arabia, Oman, United Arab Emirates, Kuwait and Qatar [version 1; peer. Saudi Arabia, Oman, United Arab Emirates, Kuwait and Qatar. 2020;9:1287. doi: 10.12688/f1000research.27097.1.
4. World Health Organization. Noncommunicable diseases country profiles 2018. Geneva: World Health Organization, 2018. <https://www.who.int/publications/i/item/9789241514620>.
5. Sun H, Saeedi P, Karuranga S, Pinkepank M, Ogurtsova K, Duncan BB, et al. IDF Diabetes Atlas: Global, regional and country-level diabetes prevalence estimates for 2021 and projections for 2045. *Diabetes Res Clin Pract.* 2022;183:109119. doi: 10.1016/j.diabres.2021.109119.
6. Institute for Health Metrics and Evaluation. Diet high in sugar-sweetened beverages – Level 3 risk. Institute for Health Metrics and Evaluation. Seattle: Institute for Health Metrics and Evaluation, 2019. (http://www.healthdata.org/results/gbd_summaries/2019/diet-high-in-sugar-sweetened-beverages-level-3-risk, accessed 4 March 2024)

7. Malik VS, Pan A, Willett WC, Hu FB. Sugar-sweetened beverages and weight gain in children and adults: a systematic review and meta-analysis. *Am J Clin Nutr*. 2013;98(4):1084-1102. doi: 10.3945/ajcn.113.058362.
8. Global Dietary Database. Global dietary database survey. Massachusetts: Tufts University, 2018. <https://www.globaldietarydatabase.org>.
9. World Health Organization. Tackling NCDs: 'Best buys'. Geneva: World Health Organization, 2017. <https://www.emro.who.int/noncommunicable-diseases/publications/factsheets.html>.
10. Deloitte & Touche. The excise tax treaty for cooperation council for the Arab states of Gulf. London: Deloitte, 2016. <https://www2.deloitte.com/content/dam/Deloitte/xs/Documents/tax/GCC-EXCISE-Treaty-Bilingual-July-2017.pdf>.
11. World Health Organization. Global database on the Implementation of Nutrition Action (GINA). Geneva: World Health Organization, n.d. <https://extranet.who.int/nutrition/gina/en/home>.
12. General Authority of Zakat and Tax. Excise Tax Implementation. Excise Tax Guidelines. Riyadh: General Authority of Zakat and Tax, 2017. https://extranet.who.int/ncdccc/Data/SAU_NCD_SAU_Excise%20Tax%20Guidelines%20form%20Tax%20Authority.pdf, accessed 10 February 2024.
13. World Health Organization. Global report on the use of sugar-sweetened beverage taxes, 2023. Geneva: World Health Organization, 2023. <https://www.who.int/publications/i/item/9789240084995>, accessed 22 February 2024.
14. UAE cabinet to expand list of excise taxable products, reducing consumption of unhealthy goods. The United Arab Emirates Cabinet. 2020. (<https://uaecabinet.ae/en/details/news/uae-cabinet-to-expand-list-of-excise-taxable-products-reducing-consumption-of-unhealthy-goods>, accessed 10 February 2024)
15. The Cabinet. Task Force on Fiscal Policy for Health. Health Taxes to Save Lives: Employing Effective Excise Taxes on Tobacco, Alcohol, and Sugary Beverages. Dubai: United Arab Emirates, 2019. <https://www.bbhub.io/dotorg/sites/2/2019/04/Health-Taxes-to-Save-Lives.pdf>.
16. World Health Organization. World Health Organization manual on sugar-sweetened beverage taxation policies to promote healthy diets. Geneva: World Health Organization, 2022. <https://www.who.int/publications/i/item/9789240056299>.
17. Baker P, Jones A, Thow AM. Accelerating the worldwide adoption of sugar-sweetened beverage taxes: strengthening commitment and capacity: Comment on "The Untapped Power of Soda Taxes: Incentivizing Consumers, Generating Revenue, and Altering Corporate Behavior". *Int J Health Policy Manag*. 2018;7(5):474-478. doi: 10.15171/ijhpm.2017.127.
18. Federal Tax Authority. Implementing the decision of the Council of Ministers (52) 2019 regarding excise goods, the tax rates imposed on them, and how to calculate the excise price. Dubai: Federal Tax Authority, 2019. <https://mof.gov.ae/wp-content/uploads/2022/08/52-2019-.pdf>.
19. Bureau of Experts at the Saudi Council of Ministers. Organizational arrangements of the Public Health Authority. Riyadh: Bureau of Experts at the Saudi Council of Ministers, 2021. <https://laws.boe.gov.sa/BoeLaws/Laws/LawDetails/c7a10e52-37e6-492d-a3cf-acea0013f2f0/1>.
20. Public Health Authority. About Public Health Authority. Riyadh: Public Health Authority, 2021. <https://pha.gov.sa/ar-sa/Pages/default.aspx>.
21. World Trade Organization. Report (2018) of the council for trade in goods. World Trade Organization. Geneva: World Trade Organization, 2018. https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S009-DP.aspx?language=E&CatalogueIdList=249825#.
22. Alsukait R, Wilde P, Bleich SN, Singh G, Foltz SC. Evaluating Saudi Arabia's 50% carbonated drink excise tax: Changes in prices and volume sales. *Econ Hum Biol*. 2020;38:100868. doi: 10.1016/j.ehb.2020.100868.
23. Aljaloud SO. Microbiological Quality and Safety of Energy Drink Available in the Local Markets in Saudi Arabia. *Int J Food Sci Nutr Diet* 2016;5(4):287-289. DOI: 10.19070/2326-3350-1600051.
24. Mulcahy G, Boelsen-Robinson T, Hart AC, Pesantes MA, Sameeha MJ, Phulkerd S, Alsukait RF, Thow AM. A comparative policy analysis of the adoption and implementation of sugar-sweetened beverage taxes (2016-19) in 16 countries. *Health Policy Plan*. 2022;37(5):543-564. doi: 10.1093/heapol/czac004.
25. World Health Organization. Growth reference data for 5-19 years. Geneva: World Health Organization, 2007. <https://www.who.int/tools/growth-reference-data-for-5to19-years>.
26. World Health Organization. WHO acceleration plan to stop obesity. Geneva: World Health Organization, 2022. <https://iris.who.int/bitstream/handle/10665/370281/9789240075634-eng.pdf>.
27. Baker P, Jones A, Thow AM. Accelerating the Worldwide Adoption of Sugar-Sweetened Beverage Taxes: Strengthening Commitment and Capacity Comment on "The Untapped Power of Soda Taxes: Incentivizing Consumers, Generating Revenue, and Altering Corporate Behavior". *Int J Health Policy Manag*. 2018;7(5):474-478. doi: 10.15171/ijhpm.2017.127.
28. Wright A, Smith KE, Hellowell M. Policy lessons from health taxes: a systematic review of empirical studies. *BMC Public Health* 2017;17(1):583. doi:10.1186/s12889-017-4497-z.
29. Donaldson E. Advocating for sugar sweetened beverage taxation – A case study of Mexico. Bloomberg: Johns Hopkins Bloomberg School of Public Health, 2015. <https://ncdalliance.org/news-events/news/advocating-for-sugar-sweetened-beverage-taxation-a-case-study-of-mexico>.

30. World Health Organization. Implementing fiscal and pricing policies to promote healthy diets: A review of contextual factors. Geneva: World Health Organization, 2021. <https://apps.who.int/iris/handle/10665/345114>.
31. Alsukait R, Bleich S, Wilde P, Singh G, Folta S. Sugary drink excise tax policy process and implementation: Case study from Saudi Arabia. *Food Policy* 2020;90:101789. <https://doi.org/10.1016/j.foodpol.2019.101789>.
32. Kadungure A, Loewenson R. Taxing for health: taxes on sugar-sweetened beverages in east and southern African countries. *Equinet Discussion Paper 130*, July 2023. https://equinetafrica.org/sites/default/files/uploads/documents/EQ%20Disss%20130%20SSB%20taxation%20July2023_o.pdf.
33. United Nations Interagency Task Force on the Prevention and Control of Noncommunicable Diseases. The investment case for noncommunicable disease prevention and control in the Kingdom of Saudi Arabia: Return on investment analysis & institutional and context analysis. Geneva: World Health Organization; 2018. <https://www.undp.org/sites/g/files/zskgke326/files/migration/sa/180326-MOH-KSA-NCDs-2017.pdf>.
34. Jalloun RA, Qurban MA. The impact of taxes on soft drinks on adult consumption and weight outcomes in Medina, Saudi Arabia. *Human Nutrition & Metabolism* 2022;27:200139. DOI: <https://doi.org/10.1016/j.hnm.2022.200139>.
35. Khamis AA, Moonesar AI, Shatha M, Reem G, Bashir A. The sweet and sour of the sugar-sweetened beverage tax. *Inter J Nutrition* 2021;6(3):21-35.