



Self-reported impact of the sugar-sweetened beverage tax on consumer attitudes among adults in Newfoundland and Labrador: A comparison with other Canadian provinces in 2021 and 2022

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Abstract

Objectives Newfoundland and Labrador (NL) became the first Canadian jurisdiction to implement a sugar-sweetened beverage (SSB) excise tax in September 2022. This study examined self-reported consumer perceptions and behaviours in Canada pre- and post-implementation.

Methods Pre-post data were from national repeat cross-sectional surveys with Canadian adults aged 18–100 years (2021–2022). The sample included 8709 participants over the 2 years, including 813 from NL. Adjusted logistic regression models examined differences by region and year in self-reported SSB: (1) tax awareness; (2) perceived costs; and (3) tax policy support. Adjusted linear regression models evaluated changes in self-reported drink purchases for three drink types (taxed, low/no-calorie, and untaxed drinks).

Results Overall, 93% of NL respondents were tax-aware post-implementation. Perceived SSB costs increased to a greater extent in NL versus the rest of Canada ('a lot more' versus 'no/don't know'; adjusted OR = 6.41; 95%CI, 2.34–17.57). In 2022, approximately one-third of NL respondents self-reported changing their purchases of at least one drink because of the tax (e.g., –34% regular soda, –20% low/no-calorie energy drinks, –18% diet soda, +12% bottled water). SSB tax opposition increased in NL post-tax (26.5% vs. 41.0%), but support remained high if tax revenue was earmarked for healthy food subsidies (56.0% across years).

Conclusion Tax awareness and perceived SSB costs were higher in NL post-tax. Framing tax policies around health promotion may help maintain public support. While some NL participants self-reported decreasing taxed beverage purchases, most reported 'no change/don't know', suggesting the need for complementary policies to further reduce SSB intakes.

Résumé

Objectifs En septembre 2022, Terre-Neuve-et-Labrador (T.-N.-L.) est devenue la première administration canadienne à instaurer une taxe d'accise sur les boissons édulcorées au sucre (BÉS). Notre étude porte sur les perceptions et les comportements autodéclarés de consommateurs au Canada avant et après l'instauration de la taxe.

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Méthodes Les données avant/après sont tirées d'enquêtes transversales nationales répétées auprès d'adultes canadiens de 18 à 100 ans (2021-2022). L'échantillon incluait 8 709 personnes sur ces deux ans, dont 813 de T.-N.-L. Des modèles de régression logistique ajustés ont permis d'examiner les différences par région et par année dans les données autodéclarées sur: 1) la connaissance de la taxe; 2) les coûts perçus des BÉS; et 3) l'appui à la réforme fiscale. Des modèles de régression linéaire ajustés ont permis d'évaluer les changements dans les achats autodéclarés de trois types de boissons (taxées, hypocaloriques/non caloriques, non taxées).

Résultats Dans l'ensemble, 93 % des répondantes et des répondants de T.-N.-L. étaient au courant de la taxe après son instauration. Les coûts perçus des BÉS ont augmenté dans une plus large mesure à T.-N.-L. que dans le reste du Canada (« beaucoup plus» contre « non/je ne sais pas»; rapport de cotes ajusté = 6,41; IC de 95 %: 2,34-17,57). En 2022, environ le tiers des répondantes et des répondants de T.-N.-L. ont dit avoir modifié leurs achats d'au moins une boisson en raison de la taxe (p. ex. -34 % de boissons gazeuses ordinaires, -20 % de boissons énergisantes hypo- ou non caloriques, -18 % de boissons gazeuses allégées, +12 % d'eau embouteillée). L'opposition à la taxe sur les BÉS a augmenté à T.-N.-L. après son instauration (26,5 % c. 41 %), mais l'appui demeurerait élevé si les recettes fiscales servaient à subventionner des aliments sains (56 % sur les deux années).

Conclusion La connaissance de la taxe et les coûts perçus des BÉS étaient plus élevés à T.-N.-L. après l'instauration de la taxe. Ainsi, en articulant les politiques fiscales autour de la promotion de la santé, on peut contribuer à conserver l'appui du public. Bien que certains répondants et répondantes de T.-N.-L. aient dit avoir réduit leurs achats de boissons taxées, la plupart n'ont indiqué « aucun changement/je ne sais pas», ce qui donne à penser qu'il faudrait des politiques complémentaires pour réduire encore davantage la consommation de BÉS.

Keywords Sugar-sweetened beverages · Fiscal policy · Food policy · Awareness · Public opinion

Mots-clés Boissons édulcorées au sucre · Politique budgétaire · Politique alimentaire · Sensibilisation · Opinion publique

Background

Sugar-sweetened beverage (SSB) taxes have been implemented in nearly 100 jurisdictions worldwide (Global Food Research Program at UNC-Chapel Hill, 2024) and seek to reduce sugar intake and chronic disease development, in part by raising prices to decrease purchases (Andreyeva et al., 2022). A systematic review and meta-analysis found that implemented SSB taxes were associated with price increases and a 15% reduction in SSB sales globally (Andreyeva et al., 2022). Beyond cost, many factors can influence consumer perceptions and policy effectiveness. For example, public health campaigns that raise awareness of a health-related tax may impact consumer knowledge and behaviours (e.g., communicating adverse health effects of SSBs and reducing consumption) (Murukutla et al., 2020). In turn, increased knowledge may build public support, a key factor in political decisions to adopt and maintain SSB taxes (Murukutla et al., 2020). Public support may be further increased when revenue is earmarked for community activities or health promotion (Eykelboom et al., 2019).

The province of Newfoundland and Labrador (NL) has one of the highest rates of non-communicable diseases in Canada (Government of Newfoundland and Labrador, n.d.-c). In September 2022, NL became the first Canadian jurisdiction to implement a dedicated SSB excise tax (Government of Newfoundland and Labrador, n.d.-b). The \$0.20

per litre tax applied to products including various ready-to-drink beverages that contained added sugars, but excluded beverages such as 100% fruit or vegetable juices, products containing sugar alcohols or non-nutritive sweeteners (e.g., sucralose or erythritol), and chocolate-flavoured milk (Government of Newfoundland and Labrador, n.d.-b). The province introduced an awareness campaign (e.g., in-store posters) to help residents choose lower-sugar options (beginning August 2022) and announced that tax revenue would fund healthy living initiatives (e.g., school meal programs) (Government of Newfoundland and Labrador, n.d.-b).

Despite its potential to promote healthier beverage intake, limited research has been conducted on NL's policy. Thus, we examined consumer perceptions and responses to NL's SSB tax in Canada, pre- and post-implementation. The study had four hypotheses: (1) SSB tax awareness and (2) perceived SSB costs would be higher in NL versus the rest of Canada post-tax; (3) purchases of taxed and untaxed drinks would decrease and increase, respectively, in NL post-tax; and (4) participants would be more likely to support SSB taxes when revenue subsidizes healthy foods (regardless of year or region). A secondary objective was to evaluate associations between each primary outcome and both SSB consumption and healthfulness perceptions, as these lifestyle patterns may also shape consumer responses to SSB taxes (Acton et al., 2022; Murukutla et al., 2020), yet they remain under-researched to date.

Methods

Data were from the 2021 and 2022 Canadian arm of the International Food Policy Study (IFPS), an annual repeat cross-sectional online survey of adults aged 18–100 years, designed to evaluate the impact of national-level food policies since 2017. Participants were recruited through the Nielsen Consumer Insights Global Panel and their partners' panels. Potential respondents were informed about the study and provided consent before participating. Data collection occurred in November and December of each year, and median survey time among Canadian participants overall was 33 min (2021) and 35 min (2022). A full description of study methodology is available in the 2021 and 2022 Adult IFPS Technical Reports (www.foodpolicystudy.com/methods) (Hammond et al., 2023, 2024). The study was reviewed by and received ethics clearance through a University of Waterloo Research Ethics Board (REB# 30829).

Measures

Self-reported SSB tax awareness

SSB tax awareness was assessed by asking: 'Is there a special tax on sugary drinks in your province or territory that makes them more expensive to buy?' (No/Yes/Don't know/Refuse to answer). Responses of 'Don't know' were combined with 'No'. All participants were asked this question, regardless of a provincial tax being present, to allow for identification of potential overreporting in NL. This question was added to the IFPS survey in 2021.

Self-reported perceived relative cost of SSBs

Perceived SSB costs were assessed by asking: 'Do drinks with sugar (e.g., Coke) cost more than drinks without sugar (e.g., Diet Coke) in your province or territory?' (No/Yes – a little more/Yes – a lot more/Don't know/Refuse to answer). Responses of 'Don't know' were combined with 'No'. All participants were asked this question, regardless of a provincial tax being present. This question has been on the IFPS survey since 2017.

Self-reported impact of the SSB tax on beverage purchases

Tax-aware participants were asked, 'Has the tax changed whether you buy the following drinks for you or your family?' (Buy less/Buy more/No change/Don't know/Refuse to answer) for 14 sugary and non-sugary beverages. English-language respondents were asked about plain bottled water in 2022 but not in 2021, due to a programming

error. Responses of 'Don't know' were combined with 'No change'. Respondents who reported 'No' or 'Don't know' in the previous tax awareness question were also combined with tax-aware participants reporting 'No change' to limit overstating the tax's impact and better reflect real-world scenarios. The tax impact question was added to the IFPS survey in 2021.

To assess participants' overall reported changes in beverage purchases, an index was constructed for each of the 14 beverages: 'Bought less' (–1), 'No change/Don't know' (0), and 'Bought more' (+1). Indices were summed to create a range of intakes for three drink types, based on NL's tax: taxed (–5 to 5; regular soda, flavoured/vitamin waters, sports drinks, and energy drinks, plus sweetened fruit drinks), low/no-calorie (–4 to 4; low-/no-calorie fruit drinks, flavoured/vitamin waters, sports drinks, and energy drinks; which contained mix of taxed and untaxed beverages depending on sugar usage), and untaxed beverages (–5 to 5; 100% fruit/vegetable juice, diet soda, plain bottled water, white milk/unsweetened alternatives, and flavoured milk/sweetened alternatives).

Self-reported SSB tax policy support

SSB tax policy support was assessed by asking: 'Would you support or oppose a government policy that would require...' followed by policies displayed in random order, including 'Taxes on sugary drinks' and 'Taxes on sugary drinks IF the money was spent on subsidizing healthy foods' (Support/Neutral/Oppose/Don't know/Refuse to answer). Responses of 'Don't know' were combined with those of 'Neutral'. This question has been in the IFPS survey since 2017.

Sociodemographic characteristics and lifestyle factors

Sociodemographic measures included age group, sex at birth (male, female), body mass index (BMI), ethnicity, education, perceived income adequacy, region, and presence of children in the household. Indicators of perceived SSB healthfulness (Jáuregui et al., 2022) (categorical) and volume of SSB consumption (Vanderlee et al., 2021) (quartiles ranging from lowest to highest and not stated) were also examined (see Table 1).

Analysis

The analysis focused on temporal and regional differences in outcomes pre- vs. post-tax implementation using survey year (2021, 2022) and region (NL, other Canadian provinces). Descriptive findings are reported for all outcomes, stratified by region.

Table 1 Weighted sociodemographic and lifestyle characteristics among the overall sample and across regions in the 2021–2022 International Food Policy Study ($N = 8709$)

	Overall ($N = 8709$) % (N)	Newfoundland and Labrador ^a ($n = 813$) % (n)	Rest of Canada ^a ($n = 7896$) % (n)
Year			
2021	50.9 (4431)	51.0 (414)	50.9 (4018)
2022	49.1 (4278)	49.0 (399)	49.1 (3879)
Age group			
18–29 y	18.7 (1625)	9.9 (80)	18.8 (1483)
30–44 y	25.2 (2198)	26.9 (219)	25.2 (1991)
45–59 y	24.2 (2105)	25.5 (207)	24.1 (1907)
≥ 60 y	31.9 (2782)	37.7 (307)	31.9 (2516)
Sex			
Male	49.5 (4307)	49.3 (401)	49.5 (3905)
Female	50.5 (4402)	50.7 (412)	50.5 (3991)
Ethnicity ^b			
Majority	77.1 (6718)	88.9 (722)	77.0 (6078)
Minority	22.9 (1991)	11.1 (91)	23.0 (1818)
Education level ^b			
Low	41.2 (3585)	34.6 (281)	41.3 (3258)
Medium	32.8 (2856)	43.1 (350)	32.6 (2578)
High	26.0 (2268)	22.3 (181)	26.1 (2061)
BMI ^c			
< 18.5	3.6 (314)	1.4 (12)	3.6 (287)
18.5–24.9	34.7 (3025)	30.2 (246)	34.8 (2748)
25.0–29.9	26.7 (2325)	29.8 (242)	26.7 (2105)
≥ 30.0	21.0 (1830)	28.3 (230)	20.9 (1651)
Not stated	14.0 (1215)	10.2 (83)	14.0 (1106)
Perceived income adequacy ^d			
Difficult	29.0 (2529)	35.0 (284)	29.0 (2286)
Neither easy nor difficult	36.1 (3146)	35.6 (290)	36.1 (2853)
Easy	34.9 (3034)	29.4 (239)	34.9 (2757)
Presence of children in the household, % (n) ^e			
No/not stated	79.5 (6924)	79.7 (648)	79.5 (6278)
Yes	20.5 (1785)	20.3 (165)	20.5 (1618)
Perceived healthfulness of SSBs ^f			
Very unhealthy	50.3 (4377)	55.8 (453)	50.2 (3962)
Unhealthy	29.2 (2547)	29.2 (237)	29.2 (2310)
A little unhealthy	12.6 (1098)	9.0 (73)	12.7 (999)
Neither unhealthy nor healthy	5.6 (489)	4.5 (37)	5.6 (445)
A little healthy	0.9 (80)	0.7 (6)	0.9 (73)
Healthy	0.6 (49)	0.2 (2)	0.6 (45)
Very healthy	0.8 (69)	0.6 (5)	0.8 (62)
Volume of SSB consumption ^g			
Quartile 1	24.7 (2152)	27.4 (222)	24.7 (1949)
Quartile 2	20.3 (1769)	17.4 (142)	20.4 (1607)
Quartile 3	22.4 (1955)	19.3 (157)	22.5 (1776)

Table 1 (continued)

	Overall (<i>N</i> = 8709) % (<i>N</i>)	Newfoundland and Labrador ^a (<i>n</i> = 813) % (<i>n</i>)	Rest of Canada ^a (<i>n</i> = 7896) % (<i>n</i>)
Quartile 4	22.5 (1958)	23.8 (193)	22.5 (1774)
Not stated	10.0 (875)	12.1 (98)	10.0 (791)

^aRegion was based on the reported province or territory of residence, and categorized as 'Newfoundland and Labrador' or 'rest of Canada'

^bEthnicity and highest level of education completed were assessed using measures drawn from government-led national surveys (Anti-Racism Centers for Disease Control & Prevention, 2016; Directorate, 2022; Statistics Canada, 2016) and analyzed as derived variables (majority/minority and low/medium/high, respectively)

^cBMI, body mass index. BMI was calculated using self-reported height and weight, and categorized using World Health Organization guidelines (World Health Organization, 2010) to include < 18.5 kg/m², 18.5–24.9 kg/m², 25.0–29.9 kg/m², ≥ 30.0 kg/m², or not stated (i.e., participants with missing or extreme BMI values: height < 3 ft or > 7 ft, weight < 45 lb or > 1100 lb, and/or BMI < 14 kg/m² or > 48 kg/m²)

^dPerceived income adequacy was assessed with the question 'Thinking about your total monthly income, how difficult or easy is it for you to make ends meet?' (Very difficult/Difficult/Neither easy nor difficult/Easy/Very easy/Don't know/Refuse to answer). Responses were collapsed into 'Difficult' (Very difficult or difficult), 'Neither' (Neither easy nor difficult), and 'Easy' (Easy or Very easy)

^ePresence of children in the household was analyzed as a derived variable and responses were categorized as 'Children in household' (under 18 years) or 'No children in household' (including no children, children 18+ years, and not stated)

^fParticipants were shown a 500 mL bottle of regular soda and asked, 'In your opinion, how unhealthy or healthy is this type of drink?', with response options 'Very healthy', 'Healthy', 'A little healthy', 'Neither healthy nor unhealthy', 'Unhealthy', and 'Very unhealthy'

^gVolume of SSB consumption was derived from responses to a Beverage Frequency Questionnaire that asked about the number and usual size of beverages consumed during the past 7 days. Total SSB volume was summed across the following drink categories: regular pop, sweetened fruit drinks, flavoured water with calories, regular sports drinks, regular energy drinks, flavoured milk, coffee or tea with sugar, sweetened specialty coffees or teas, and sweetened smoothies/protein shakes/drinkable yogurt

Seven regression models were fitted. Logistic regression examined (1) SSB tax awareness across years (binary: 'Yes' vs. 'No/Don't know'); (2) perceived relative cost of SSBs (multinomial: 'Yes – a little more' or 'Yes – a lot more' vs. 'No/Don't know'); and participants supporting sugary drink taxes (3) with or (4) without healthy food subsidies (multinomial: 'Support' or 'Oppose' vs. 'Neutral/Don't know'). Linear regression models (5–7) evaluated changes in drink purchases between years for each drink type (taxed, low/no-calorie, and untaxed drinks). All models were adjusted for the sociodemographic and lifestyle factors described above; however, sociodemographics were included solely to adjust for confounding and were not interpreted. Models were run iteratively: unadjusted (year and region), adjusted (sociodemographics added), and fully adjusted (lifestyle factors added). There were no differences between unadjusted and adjusted models, and only minor differences when fully adjusted. The latter models (adjusted for lifestyle factors) are reported below, as per the research objectives. Two-way interaction variables between year and region were added to each logistic regression model in a subsequent step.

Data were weighted with post-stratification sample weights constructed using a raking algorithm with population

estimates from the Canadian census based on age group, sex, region, and education. All estimates reported are weighted and 95% confidence intervals (CI) are reported for adjusted odds ratios or parameter estimates. Analyses were conducted using SAS v9.4 (SAS Institute Inc., North Carolina).

Sensitivity analyses

In April 2021, the province of British Columbia (BC) removed a provincial sales tax exemption on carbonated and effervescent beverages, which previously categorized carbonated beverages as basic grocery items and therefore exempt from provincial sales tax (Government of British Columbia, 2021). This resulted in a 7% sales tax being applied to sweetened carbonated beverages (including both sugar and non-sugar sweetened) (Government of British Columbia, 2021), which aligns with tax policies enforced in most other Canadian provinces (CBC News, 2020). While limited in scope (i.e., not applicable to non-carbonated sugary beverages), the policy received some media attention and was described as a 'health initiative' (CBC News, 2020). Thus, sensitivity analyses assessed each outcome with BC as a comparison region.

Results

Sample characteristics

A total of 9009 participants completed the Canadian IFPS survey in 2021 ($n=4572$) and 2022 ($n=4437$). Respondents from the Canadian territories were excluded from analyses due to small cell sizes ($n=6$ in 2021 and $n=8$ in 2022). Participants with missing data or responses of 'Refuse to answer' for variables in the models (apart from missing BMI and volume of SSB consumption) were excluded from analyses ($n=300$, 3.3%), leaving an analytic sample of 8709.

Table 1 shows sample characteristics and lifestyle factors, overall and by region. Of the 8709 respondents in the final sample, 813 were from NL. Briefly, nearly one-third of participants overall were 60 years of age or older, over 40% had low educational attainment, and most reported having no children (see Online Resource 1 for the sample characteristics of the sensitivity analysis).

Self-reported awareness of SSB tax

Figure 1 presents unadjusted percentages of participants who self-reported awareness of a special SSB tax. Approximately one-third of NL participants incorrectly self-reported a tax present pre-implementation; however, virtually all were tax-aware post-implementation. Model results showed that tax awareness was higher in NL than the rest of Canada across both years combined (Table 2), and increased to a greater extent over time in NL than the rest of Canada (38 to 93% vs. 14 to 15% pre- vs. post-tax, respectively; [$F(1)$]=108.35,

$p<0.001$; aOR=22.67 (95%CI, 12.59–40.80), $p<0.001$ for year*region interaction; Online Resource 2). SSB healthfulness perceptions (versus 'very unhealthy') were associated with greater tax awareness, ranging from 'a little unhealthy' [aOR=1.36 (1.07–1.72), $p=0.012$] to 'very healthy' [aOR=5.62 (95%CI, 3.03–10.42), $p<0.001$; Table 2]. Results from the sensitivity analyses found that BC respondents self-reported higher tax awareness than the rest of Canada, but not as high as NL in either year (Online Resources 3 and 4).

Self-reported perceived cost of SSBs

Figure 2 presents unadjusted percentages of participants who self-reported that drinks with sugar cost 'a little more' or 'a lot more' than drinks without sugar. Multinomial logistic regression model results show that perceived SSB costs (both 'a little more' and 'a lot more' vs. 'no/don't know') were higher in NL than the rest of Canada across both years combined (Table 3) and increased to a greater extent over time in NL than the rest of Canada ('a little more': 20 to 54% vs. 15 to 18%; 'a lot more': 7 to 21% vs. 3 to 4% pre- vs. post-tax; [$F(2)$]=19.13, $p<0.001$; aOR=7.12 (95%CI, 3.75–13.54) and aOR=6.41 (95%CI, 2.34–17.57), $p<0.001$ for 'a little more' and 'a lot more' year*region interactions, respectively; Online Resource 2). Greater odds of perceiving SSBs as costing 'a little more' were associated with SSB healthfulness perceptions (versus 'very unhealthy'), ranging from 'unhealthy' [aOR=1.22 (95%CI, 1.01–1.48), $p=0.035$] to 'a little healthy' [aOR=4.59 (95%CI, 2.61–8.05), $p<0.001$], and with past-7-day SSB intake (versus quartile 1), ranging from quartile 3 [aOR=1.30 (95%CI, 1.03–1.65), $p=0.027$] to 'Not stated' [aOR=2.21 (95%CI, 1.68–2.91), $p<0.001$;

Fig. 1 Sugar-sweetened beverage tax awareness among participants, by region and year ($N=8709$). SSB tax awareness was assessed by asking: 'Is there a special tax on sugary drinks in your province or territory that makes them more expensive to buy?'

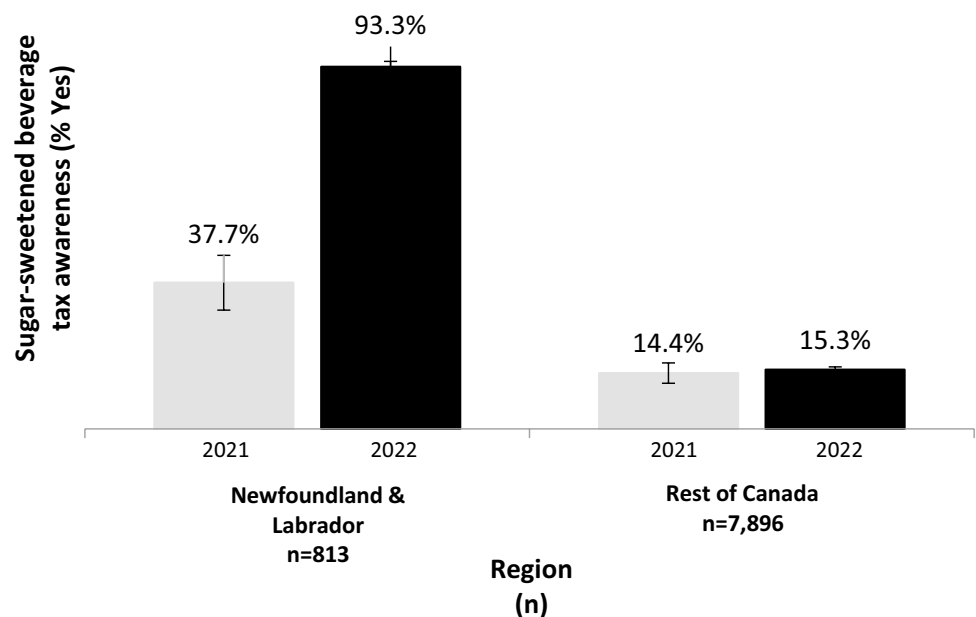


Table 2 Logistic regression model investigating awareness of a sugar-sweetened beverage tax in the International Food Policy Study ($N = 8709$)

	Aware			
	Unadjusted % (95%CI)	Adjusted % (95%CI)	aOR (95%CI)	<i>p</i> value
Year				
2021	14.7 (13.39–16.04)	13.8 (12.51–15.12)	Ref	-
2022	16.4 (14.95–17.77)	14.9 (13.56–16.36)	1.10 (0.94–1.28)	0.238
Region				
Newfoundland and Labrador	64.9 (60.23–69.67)	67.3 (62.16–71.97)	Ref	-
Rest of Canada ^a	14.8 (13.84–15.79)	13.9 (12.96–14.86)	0.08 (0.06–0.10)	<0.001
Age				
18–29 y	21.8 (19.08–24.51)	19.2 (16.68–21.94)	Ref	-
30–44 y	15.5 (13.79–17.30)	13.1 (11.38–15.00)	0.64 (0.51–0.879)	<0.001
45–59 y	14.8 (12.80–16.83)	14.2 (12.30–16.41)	0.70 (0.55–0.89)	0.004
≥ 60 y	12.4 (10.86–13.89)	12.9 (11.31–14.77)	0.63 (0.49–0.80)	<0.001
Sex				
Male	15.8 (14.39–17.15)	14.0 (12.68–15.35)	Ref	-
Female	15.3 (13.92–16.64)	14.7 (13.33–16.11)	1.06 (0.91–1.24)	0.472
Ethnicity				
Majority	14.1 (13.07–15.21)	13.4 (12.41–14.53)	Ref	-
Minority	20.2 (18.01–22.37)	17.7 (15.54–19.99)	1.38 (1.16–1.65)	<0.001
Education level				
Low	15.6 (13.65–17.51)	14.3 (12.54–16.23)	1.17 (0.96–1.41)	0.119
Medium	16.5 (15.22–17.87)	15.9 (14.59–17.36)	1.32 (1.13–1.55)	0.001
High	14.1 (12.86–15.43)	12.5 (11.26–13.90)	Ref	-
BMI				
< 18.5	17.7 (11.88–23.59)	14.3 (10.09–19.85)	1.03 (0.68–1.55)	0.907
18.5–24.9	15.2 (13.71–16.76)	14.0 (12.54–15.58)	Ref	-
25.0–29.9	16.2 (14.30–18.14)	16.2 (14.22–18.36)	1.19 (0.98–1.44)	0.087
≥ 30.0	13.4 (11.41–15.34)	12.9 (10.99–15.02)	0.91 (0.73–1.14)	0.396
Not stated	17.6 (14.58–20.53)	14.0 (11.56–16.90)	1.00 (0.78–1.28)	0.985
Perceived income adequacy				
Difficult	16.8 (14.80–18.86)	15.3 (13.40–17.29)	1.20 (0.99–1.46)	0.065
Neither easy nor difficult	16.6 (14.87–18.30)	14.9 (13.33–16.60)	1.17 (0.98–1.39)	0.076
Easy	13.3 (12.05–14.61)	13.0 (11.70–14.48)	Ref	-
Presence of children in the household				
No/not stated	14.5 (13.45–15.62)	13.7 (12.64–14.76)	Ref	-
Yes	19.4 (17.24–21.47)	17.1 (14.91–19.51)	1.30 (1.08–1.57)	0.006
SSB healthfulness perceptions				
Very unhealthy	13.4 (12.20–14.67)	12.8 (11.63–14.17)	Ref	-
Unhealthy	15.1 (13.29–16.86)	13.9 (12.19–15.73)	1.09 (0.91–1.32)	0.354
A little unhealthy	17.4 (14.58–20.27)	16.7 (13.99–19.72)	1.36 (1.07–1.72)	0.012
Neither unhealthy nor healthy	22.4 (17.21–27.58)	20.2 (15.55–25.85)	1.72 (1.23–2.41)	0.002
A little healthy	31.9 (19.85–43.89)	28.1 (17.97–41.11)	2.65 (1.47–4.79)	0.001
Healthy	42.4 (24.29–60.54)	39.2 (23.17–57.86)	4.37 (2.03–9.39)	<0.001
Very healthy	47.5 (31.19–63.78)	45.3 (31.10–60.26)	5.62 (3.03–10.42)	<0.001
SSB consumption in past 7 days, vol				
Quartile 1	11.7 (10.11–13.30)	12.0 (10.36–13.80)	Ref	-
Quartile 2	17.9 (15.77–20.08)	16.1 (14.03–18.41)	1.41 (1.12–1.77)	0.003
Quartile 3	14.8 (12.87–16.81)	13.5 (11.71–15.39)	1.14 (0.91–1.43)	0.246
Quartile 4	15.9 (13.66–18.07)	14.6 (12.58–16.83)	1.25 (0.99–1.59)	0.063
Not stated	20.8 (17.07–24.55)	19.0 (15.69–22.88)	1.73 (1.230–2.29)	<0.001

aOR, adjusted odds ratio; CI, confidence interval; BMI, body mass index; SSB, sugar-sweetened beverage

^aSSB tax awareness was assessed by asking: 'Is there a special tax on sugary drinks in your province or territory that makes them more expensive to buy?' Participants in the 'Rest of Canada' responding 'Yes' incorrectly reported the presence of a sugar-sweetened beverage tax in their province/territory

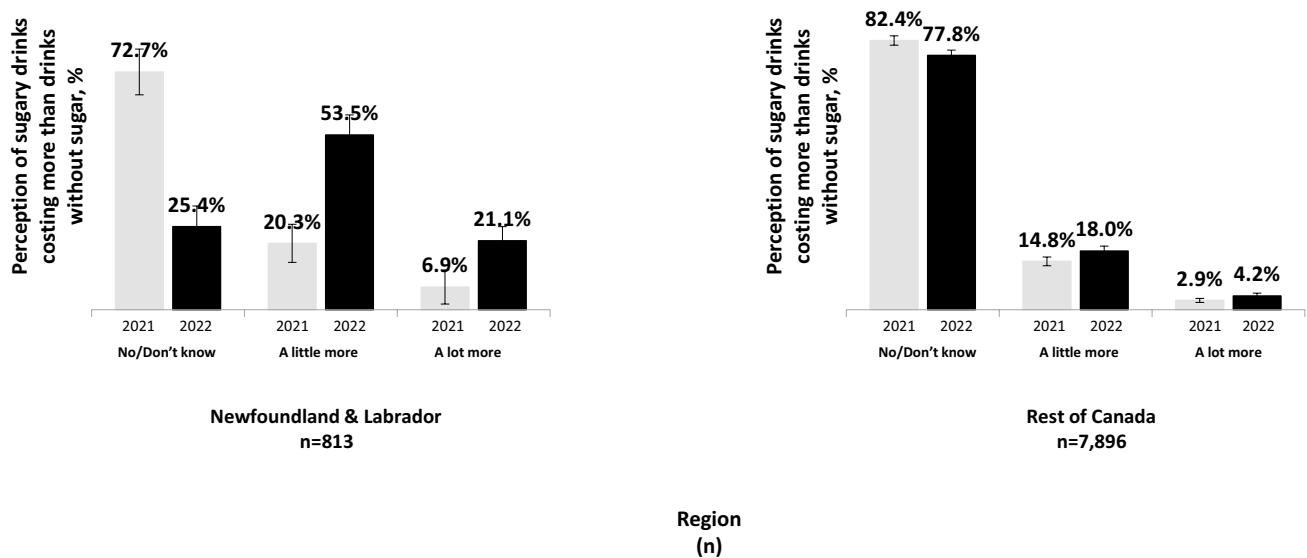


Fig. 2 Perceived cost of SSBs among participants, by region and year ($N=8709$). Perceived cost of SSBs was assessed by asking: ‘Do drinks with sugar (e.g., Coke) cost more than drinks without sugar (e.g., Diet Coke) in your province or territory?’

Table 3). Results from the sensitivity analyses found that perceived SSB costs were similar between BC and the rest of Canada (Online Resources 5 and 6).

Self-reported impact on beverage purchases

Figure 3 presents the unadjusted percentages of tax-aware NL participants who self-reported that the tax led them to ‘buy less’, ‘buy more’, or ‘no change/don’t know’ for three drink types (taxed, low/no-calorie, and untaxed) post-tax.

As seen in Fig. 3, most NL participants self-reported ‘no change/don’t know’ (64–82% across drinks). Among those with a change (18–36%), a greater proportion self-reported buying less (vs. more) *taxed drinks* (regular soda [34% less vs. 2% more], sweetened fruit drinks [26% less vs. 3% more], regular energy drinks [23% less vs. 2% more], regular sports drinks [20% less vs. 7% more], and regular flavoured/vitamin waters [17% less vs. 6% more]), *low/no-calorie drinks* (energy drinks [20% less vs. 6% more], flavoured/vitamin waters [19% less vs. 5% more], fruit drinks [17% less vs. 6% more], and sports drinks [17% less vs. 4% more]), and *untaxed drinks* (100% fruit/vegetable juice [15% less vs. 11% more], diet soda [18% less vs. 7% more], and flavoured milk/sweetened alternatives [17% less vs. 5% more]). In contrast, a greater proportion of participants reported buying more (vs. less) plain bottled water (12% more vs. 6% less) and white milk/unsweetened alternatives (10% more vs. 8% less). Drink purchases did not vary by past 7-day SSB consumption (Online Resources 7–9). Results from the sensitivity analyses found that self-reported changes in purchases of all beverage types followed similar patterns between regions, although NL participants

were more likely to self-report buying less taxed and low/no-calorie drinks than those in BC (Online Resources 10–13).

Self-reported support for SSB taxes

Figure 4 presents the unadjusted percentages of participants who self-reported support for SSB tax policies. Overall, more than 30% of participants across regions supported SSB taxes in either year; however, opposition (vs. neutral) increased to a greater extent in NL than the rest of Canada over time (27 to 41% vs. 26 to 27% in 2021 and 2022, respectively; [$F(2)=5.88$, $p=0.003$; aOR = 1.99 (95%CI, 1.16–3.42), $p=0.013$ for the year*region interaction; Online Resource 2). Public support for SSB taxes was highest when revenue would be used to subsidize healthy food: as shown in Fig. 4, about half of all Canadians surveyed supported this form of tax in either year. No differences in support or opposition (vs. neutral) were observed over time between regions for this form of tax ($[F(2)=0.88$, $p=0.417$; aOR = 1.05 (95%CI, 0.64–1.74) and aOR = 1.51 (95%CI, 0.77–2.97), $p>0.05$ for both ‘support’ and ‘oppose’ year*region interactions; Online Resource 2). SSB healthfulness perceptions of ‘unhealthy’ to ‘a little healthy’ were associated with lower support for tax policies with and without a subsidy, ranging from ‘neither unhealthy nor healthy’ [aOR = 0.17 (95%CI, 0.12–0.24) and aOR = 0.18 (95%CI, 0.13–0.25), both $p<0.001$] to ‘unhealthy’ [aOR = 0.47 (95%CI, 0.41–0.55) and aOR = 0.46 (95%CI, 0.39–0.53), both $p<0.001$]. Higher past 7-day SSB consumption did not predict lower support for either policy ($p>0.05$ for all contrasts, apart from

Table 3 Multinomial logistic regression model investigating the odds of perceiving SSBs as costing more than drinks without sugar, 2021–2022 International Food Policy Study (*N* = 8709)

	No/Don't know (Ref)	Yes – a little				Yes – a lot			
	Unadjusted % (95%CI)	Unadjusted % (95%CI)	Adjusted % (95%CI)	aOR (95%CI)	<i>p</i> value	Unadjusted % (95%CI)	Adjusted % (95%CI)	aOR (95%CI)	<i>p</i> value
Year									
2021	82.2 (80.81–83.64)	14.9 (13.55–16.19)	12.4 (11.13–13.60)	Ref	-	2.9 (2.30–3.52)	2.5 (1.92–3.13)	Ref	-
2022	77.1 (75.45–78.66)	18.5 (17.01–19.95)	15.2 (13.73–16.72)	1.30 (1.11–1.51)	0.001	4.5 (3.65–5.30)	3.9 (3.11–4.75)	1.64 (1.20–2.23)	0.002
Region									
Newfoundland and Labrador	49.6 (44.79–54.32)	36.6 (32.20–40.95)	40.2 (34.52–45.87)	Ref	-	13.9 (10.53–17.21)	14.3 (10.51–18.09)	Ref	-
Rest of Canada	80.1 (79.03–81.20)	16.4 (15.35–17.36)	13.5 (12.44–14.47)	0.18 (0.14–0.24)	<0.001	3.5 (3.02–4.05)	3.1 (2.54–3.59)	0.12 (0.08–0.17)	<0.001
Age									
18–29 y	63.0 (59.85–66.08)	31.8 (28.76–34.84)	27.3 (24.24–30.43)	Ref	-	5.2 (3.93–6.55)	4.3 (2.94–5.70)	Ref	-
30–44 y	73.7 (71.47–75.95)	21.4 (19.33–23.42)	17.2 (15.05–19.27)	0.54 (0.44–0.67)	<0.001	4.9 (3.71–6.12)	3.9 (2.67–5.09)	0.78 (0.50–1.21)	0.261
45–59 y	84.9 (82.95–86.76)	12.2 (10.41–13.91)	11.5 (9.73–13.23)	0.33 (0.26–0.42)	<0.001	3.0 (2.11–3.86)	2.6 (1.81–3.37)	0.48 (0.30–0.75)	0.001
≥ 60 y	90.3 (88.85–91.65)	7.4 (6.24–8.63)	8.3 (6.83–9.77)	0.23 (0.18–0.30)	<0.001	2.3 (1.52–3.11)	2.4 (1.50–3.34)	0.43 (0.24–0.75)	0.003
Sex									
Male	77.0 (75.39–78.57)	18.9 (17.46–20.43)	15.2 (13.76–16.68)	Ref	-	4.1 (3.33–4.81)	3.5 (2.82–4.22)	Ref	-
Female	82.3 (80.90–83.75)	14.4 (13.08–15.68)	12.4 (11.08–13.68)	0.78 (0.67–0.91)	0.002	3.3 (2.59–4.00)	2.8 (2.11–3.52)	0.77 (0.56–1.05)	0.097
Ethnicity									
Majority	82.9 (81.77–84.09)	13.7 (12.62–14.73)	12.6 (11.53–13.65)	Ref	-	3.4 (2.81–3.98)	3.0 (2.43–3.58)	Ref	-
Minority	68.7 (66.25–71.19)	26.7 (24.29–29.03)	18.2 (15.89–20.49)	1.56 (1.31–1.86)	<0.001	4.6 (3.56–5.69)	3.6 (2.58–4.71)	1.31 (0.93–1.85)	0.122
Education level									
Low	79.7 (77.54–81.80)	16.2 (14.25–18.16)	12.9 (11.15–14.72)	0.95 (0.79–1.16)	0.638	4.1 (3.08–5.18)	3.6 (2.53–4.61)	1.39 (0.96–2.00)	0.079
Medium	80.3 (78.85–81.72)	16.3 (14.96–17.63)	14.9 (13.47–16.26)	1.12 (0.96–1.31)	0.164	3.4 (2.77–4.07)	3.1 (2.50–3.79)	1.25 (0.92–1.69)	0.158
High	78.9 (77.43–80.46)	17.8 (16.35–19.19)	13.6 (12.19–15.02)	Ref	-	3.3 (2.63–3.94)	2.6 (1.95–3.21)	Ref	-
BMI									
< 18.5	71.3 (63.92–78.61)	24.1 (17.03–31.16)	14.6 (9.60–19.59)	1.03 (0.68–1.56)	0.893	4.6 (1.48–7.80)	3.5 (0.86–6.08)	1.11 (0.49–2.50)	0.802
18.5–24.9	78.4 (76.62–80.11)	18.0 (16.36–19.60)	14.3 (12.68–15.90)	Ref	-	3.7 (2.84–4.47)	3.1 (2.38–3.92)	Ref	-
25.0–29.9	82.4 (80.56–84.30)	14.4 (12.66–16.06)	13.5 (11.73–15.34)	0.94 (0.77–1.14)	0.514	3.2 (2.27–4.16)	3.0 (2.08–3.92)	0.94 (0.64–1.39)	0.770
≥ 30.0	83.8 (81.60–86.07)	13.0 (11.01–15.08)	12.6 (10.59–14.58)	0.86 (0.69–1.08)	0.187	3.1 (2.04–4.20)	2.8 (1.78–3.84)	0.87 (0.55–1.37)	0.549
Not stated	73.6 (70.21–77.03)	21.2 (17.97–24.35)	14.3 (11.50–17.01)	1.01 (0.79–1.29)	0.958	5.2 (3.56–6.87)	4.0 (2.44–5.47)	1.27 (0.82–1.97)	0.291

Table 3 (continued)

	No/Don't know (Ref)	Yes – a little				Yes – a lot			
	Unadjusted % (95%CI)	Unadjusted % (95%CI)	Adjusted % (95%CI)	aOR (95%CI)	<i>p</i> value	Unadjusted % (95%CI)	Adjusted % (95%CI)	aOR (95%CI)	<i>p</i> value
Perceived income adequacy									
Difficult	76.1 (73.76–78.48)	19.4 (17.14–21.56)	15.9 (13.88–17.97)	1.47 (1.21–1.80)	<0.001	4.5 (3.41–5.64)	3.6 (2.64–4.59)	1.22 (0.83–1.78)	0.317
Neither easy nor difficult	78.4 (76.63–80.21)	18.2 (16.55–19.87)	14.4 (12.85–15.94)	1.29 (1.09–1.54)	0.004	3.4 (2.52–4.22)	2.8 (1.97–3.62)	0.91 (0.64–1.31)	0.616
Easy	84.0 (82.53–85.38)	12.8 (11.48–14.03)	11.5 (10.08–12.88)	Ref	-	3.3 (2.57–4.01)	3.2 (2.41–3.91)	Ref	-
Presence of children in the household									
No/not stated	82.3 (81.09–83.46)	14.5 (13.43–15.60)	12.8 (11.76–13.90)	Ref	-	3.2 (2.64–3.79)	2.9 (2.34–3.46)	Ref	-
Yes	69.6 (67.18–72.08)	24.9 (22.57–27.21)	17.7 (15.27–20.03)	1.49 (1.24–1.78)	<0.001	5.5 (4.38–6.59)	4.3 (3.14–5.41)	1.59 (1.15–2.21)	0.005
SSB healthfulness perceptions									
Very unhealthy	84.0 (82.66–85.43)	12.5 (11.26–13.73)	11.4 (10.10–12.69)	Ref	-	3.5 (2.74–4.19)	3.2 (2.52–3.90)	Ref	-
Unhealthy	79.5 (77.52–81.58)	17.1 (15.23–18.99)	13.7 (11.98–15.32)	1.22 (1.01–1.48)	0.035	3.3 (2.39–4.29)	2.8 (1.87–3.72)	0.89 (0.60–1.31)	0.553
A little unhealthy	73.3 (70.13–76.50)	23.3 (20.23–26.31)	19.9 (16.89–22.81)	1.93 (1.54–2.41)	<0.001	3.4 (2.15–4.67)	2.9 (1.78–4.03)	1.00 (0.63–1.60)	0.999
Neither unhealthy nor healthy	70.1 (64.86–75.25)	25.6 (20.66–30.53)	19.9 (15.45–24.35)	1.94 (1.43–2.64)	<0.001	4.4 (2.14–6.56)	3.2 (1.42–5.05)	1.12 (0.60–2.08)	0.726
A little healthy	44.9 (32.28–57.49)	47.3 (34.64–59.96)	35.6 (23.31–47.91)	4.59 (2.61–8.05)	<0.001	7.8 (1.99–13.63)	6.2 (1.38–11.04)	2.84 (1.18–6.85)	0.020
Healthy	44.2 (26.95–61.52)	41.9 (24.43–59.28)	31.1 (17.32–44.87)	4.06 (2.03–8.11)	<0.001	13.9 (4.00–23.81)	11.6 (3.19–19.91)	5.36 (2.19–13.12)	<0.001
Very healthy	42.8 (27.10–58.58)	40.0 (23.24–56.72)	32.3 (18.07–46.51)	4.55 (2.24–9.24)	<0.001	17.2 (7.91–26.45)	14.5 (6.29–22.70)	7.25 (3.41–15.42)	<0.001
SSB consumption in past 7 days, vol									
Quartile 1	87.7 (86.05–89.27)	10.2 (8.74–11.70)	10.7 (9.08–12.33)	Ref	-	2.1 (1.38–2.85)	2.1 (1.33–2.97)	Ref	-
Quartile 2	76.3 (73.97–78.69)	19.0 (16.85–21.17)	14.5 (12.49–16.43)	1.45 (1.15–1.81)	0.002	4.7 (3.45–5.87)	4.1 (2.90–5.24)	2.03 (1.27–3.23)	0.003
Quartile 3	79.7 (77.51–81.95)	17.2 (15.14–19.35)	13.4 (11.45–15.43)	1.30 (1.03–1.65)	0.027	3.0 (2.14–3.91)	2.6 (1.78–3.42)	1.26 (0.77–2.04)	0.362
Quartile 4	78.5 (76.03–80.96)	17.4 (15.17–19.70)	14.5 (12.36–16.57)	1.44 (1.13–1.82)	0.003	4.1 (2.85–5.29)	3.6 (2.45–4.69)	1.77 (1.07–2.91)	0.026
Not stated	69.4 (65.17–73.57)	24.5 (20.60–28.46)	20.2 (16.77–23.72)	2.21 (1.68–2.91)	<0.001	6.1 (3.83–8.38)	5.3 (3.24–7.31)	2.87 (1.65–5.01)	<0.001

Perceived cost of SSBs was assessed by asking: ‘Do drinks with sugar (e.g., Coke) cost more than drinks without sugar (e.g., Diet Coke) in your province or territory?’

aOR, adjusted odds ratio; CI, confidence interval; BMI, body mass index; SSB, sugar-sweetened beverage

NEWFOUNDLAND & LABRADOR (n=478)

Buy less Buy more No change/don't know

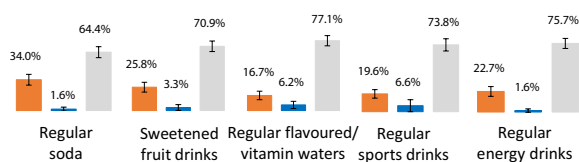
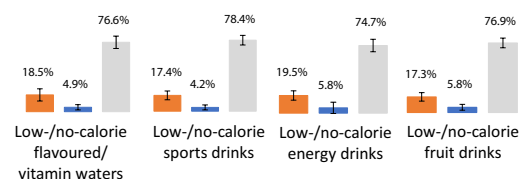
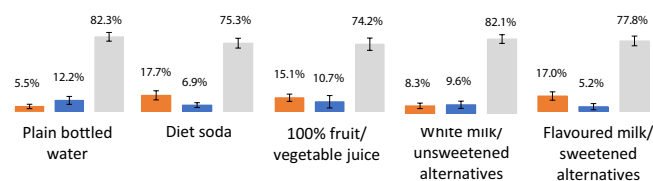
Reported changes in purchases of taxed beveragesReported changes in purchases of low/no-calorie beveragesReported changes in purchases of untaxed beverages

Fig. 3 Percentages of participants in Newfoundland and Labrador reporting 'buy less' or 'buy more' beverages in 2022, by region and drink type ($N=478$). Participants in Newfoundland and Labrador who responded 'Yes' to the tax awareness question were asked, 'Has the tax changed whether you buy the following drinks for you or your family?' Due to a programming error, English-language respondents were not asked about plain bottled water in 2021. Participants reporting 'No' and 'Don't know' for the tax awareness question were also combined with tax-aware participants reporting 'No change'. Catego-

ries of taxed beverages were based on Newfoundland and Labrador's sugar-sweetened beverage tax and included regular soda (not diet or light), flavoured/vitamin waters, sports drinks, and energy drinks, plus sweetened fruit drinks; low/no-calorie beverages included low-/no-calorie fruit drinks, flavoured/vitamin waters, sports drinks, and energy drinks; and untaxed beverages included 100% fruit or vegetable juice, diet soda, plain bottled water, white milk/unsweetened alternatives, and flavoured milk/sweetened alternatives

'Not stated' for the general SSB tax (aOR = 0.78 (95%CI, 0.61–0.99), $p = 0.041$; Tables 4 and 5). Results from the sensitivity analyses found that self-reported support was slightly lower for SSB tax policies where revenue subsidized healthy foods among those in BC than NL, but higher than the rest of Canada (Online Resource 14–16).

Discussion

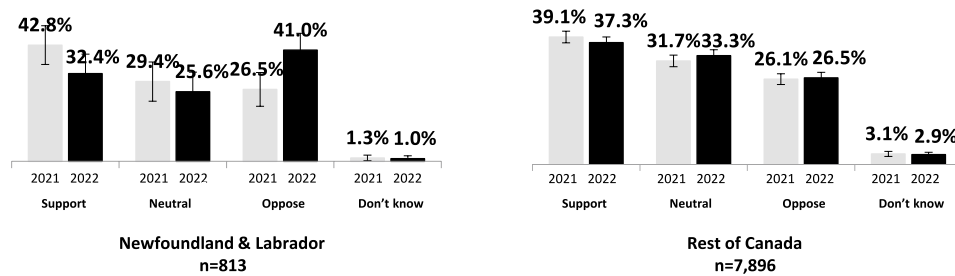
Our study examines self-reported perceptions of NL's SSB tax, pre- and post-implementation, with several notable findings: tax awareness and perceived SSB costs were higher in NL over time and region; purchases of taxed, low/no-calorie, and some untaxed drinks decreased post-tax; and opposition

to SSB tax policies was low across regions, especially when revenue subsidized healthy food programs.

Self-reported tax awareness

As expected, self-reported tax awareness was higher among NL participants than the rest of Canada (and BC) post-tax (and the proportion aware increased by 55% from pre-tax). This suggests the policy reached consumers, an important consideration in reinforcing SSB healthfulness perceptions and driving behaviour change. While high awareness has been reported post-tax in Bermuda (94%), other regions have reported lower estimates (e.g., Mexico (46–57%), the United Kingdom (68–69%), and cities in the United States (30–70%)) (Acton et al., 2022; Case et al., 2022). Such differences in awareness may result from varying

Support for sugar-sweetened beverage taxes (% Yes)



Support for sugar-sweetened beverage taxes IF the money was spent on subsidizing healthy foods (% Yes)

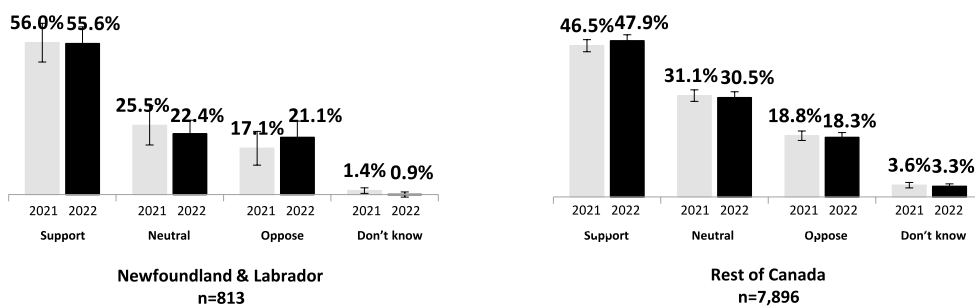


Fig. 4 Support for sugar-sweetened beverage tax policies among participants, by region and year ($N=8709$). Support for sugar-sweetened beverage tax policies was assessed by asking: ‘Would you support or oppose a government policy that would require...’ followed by a

series of public policies displayed in random order, including ‘Taxes on sugary drinks’ and ‘Taxes on sugary drinks IF the money was spent on subsidizing healthy foods’

exposure to policy communications (e.g., awareness campaigns, media coverage) or study methods/samples (Acton et al., 2022). However, a report evaluating the NL SSB tax reported that the tax was not clearly communicated to consumers at the point of purchase, with only a quarter of taxable SSBs displaying the tax on shelf price tags (Prowse et al., 2025a). In turn, this suggests that tax awareness in NL may have been driven more by media coverage or awareness campaigns than by in-store price signalling (Prowse et al., 2025a). Additionally, tax-aware participants across regions pre-tax may have responded based on knowledge of other pre-existing taxes, awareness of the upcoming tax in NL (announced May 2021) (Government of Newfoundland & Labrador, 2021), or inflation (Statistics Canada, 2022). Sustained awareness (e.g., periodic media campaigns), even in areas without taxes, may be needed to maintain health signalling and public support, while countering opposition (e.g., anti-tax messaging or industry influences) (World Cancer Research Fund International, 2018).

Self-reported perceived cost

As hypothesized, perceived SSB costs were higher in NL than the rest of Canada (and BC) post-tax (and nearly three times higher than pre-tax); this suggests the policy was salient, a key factor in behaviour change (Hall et al., 2024). The report on NL’s SSB tax found that regular prices of taxable SSBs increased by approximately 9% among the 25% of beverages displaying the SSB tax on shelf tags (Prowse et al., 2025a). However, as the majority of taxable beverages did not explicitly display price increases associated with the tax (Prowse et al., 2025a), the increased self-reported perceived cost observed in the current study may reflect broader tax awareness, expectations of price changes, or inflation, rather than actual price signals. The report also found no differences in SSB prices between NL and non-tax regions before, during, or after NL’s tax implementation, further suggesting that higher perceived cost may not reflect sustained or observable changes in retail prices (Prowse

Table 4 Multinomial logistic regression model investigating support for taxes on sugar-sweetened beverages in the International Food Policy Study (*N* = 8709)

	Neutral/Don't know (Ref)	Support				Oppose			
	Unadjusted % (95%CI)	Unadjusted % (95%CI)	Adjusted % (95%CI)	aOR (95%CI)	<i>p</i> value	Unadjusted % (95%CI)	Adjusted % (95%CI)	aOR (95%CI)	<i>p</i> value
Year									
2021	34.8 (32.98–36.59)	39.1 (37.34–40.88)	37.2 (35.31–39.10)	Ref	-	26.1 (24.48–27.74)	26.3 (24.67–27.98)	Ref	-
2022	36.1 (34.26–37.92)	37.2 (35.49–38.97)	36.3 (34.40–38.20)	0.96 (0.84–1.09)	0.520	26.7 (24.97–28.38)	26.6 (24.84–28.35)	0.99 (0.86–1.15)	0.922
Region									
Newfoundland and Labrador	28.7 (23.91–33.47)	37.7 (33.22–42.20)	33.9 (29.21–38.59)	Ref	-	33.6 (29.31–37.89)	34.9 (30.12–39.59)	Ref	-
Rest of Canada	35.5 (34.22–36.82)	38.2 (36.93–39.45)	36.8 (35.40–38.19)	0.92 (0.70–1.20)	0.541	26.3 (25.09–27.48)	26.4 (25.14–27.55)	0.64 (0.49–0.84)	0.001
Age									
18–29 y	42.9 (39.76–46.13)	27.4 (24.66–30.16)	28.3 (25.29–31.28)	Ref	-	29.6 (26.68–32.60)	29.0 (25.97–32.11)	Ref	-
30–44 y	38.8 (36.25–41.38)	34.9 (32.49–37.28)	32.6 (29.86–35.31)	1.23 (1.00–1.51)	0.052	26.3 (24.04–28.57)	27.4 (24.79–29.95)	1.01 (0.81–1.25)	0.967
45–59 y	32.9 (30.29–35.44)	39.9 (37.31–42.46)	37.6 (34.88–40.23)	1.61 (1.31–1.99)	<0.001	27.2 (24.82–29.67)	27.3 (24.77–29.80)	1.14 (0.91–1.43)	0.252
≥ 60 y	30.3 (28.10–32.47)	45.8 (43.57–48.04)	45.1 (42.54–47.65)	2.14 (1.74–2.64)	<0.001	23.9 (21.89–25.93)	23.2 (21.01–25.34)	1.07 (0.85–1.35)	0.544
Sex									
Male	35.6 (33.74–37.38)	36.8 (35.03–38.51)	37.2 (35.17–39.14)	Ref	-	27.7 (25.96–29.38)	26.7 (24.92–28.48)	Ref	-
Female	35.3 (33.48–37.11)	39.6 (37.80–41.34)	36.4 (34.52–38.23)	0.95 (0.83–1.08)	0.411	25.1 (23.52–26.76)	26.2 (24.54–27.90)	0.95 (0.82–1.10)	0.488
Ethnicity									
Majority	34.2 (32.70–35.66)	38.7 (37.30–40.16)	36.6 (35.06–38.20)	Ref	-	27.1 (25.73–28.45)	27.1 (25.70–28.46)	Ref	-
Minority	39.6 (37.01–42.23)	36.3 (33.87–38.82)	37.1 (34.25–40.03)	0.96 (0.82–1.12)	0.579	24.0 (21.67–26.39)	24.4 (21.80–27.03)	0.85 (0.71–1.02)	0.076
Education level									
Low	39.0 (36.46–41.60)	29.9 (27.60–32.25)	30.0 (27.56–32.47)	0.53 (0.45–0.62)	<0.001	31.0 (28.66–33.44)	29.9 (27.52–32.37)	1.16 (0.97–1.39)	0.097
Medium	33.6 (31.86–35.28)	40.7 (38.94–42.49)	38.3 (36.41–40.20)	0.77 (0.67–0.87)	<0.001	25.7 (24.13–27.29)	26.4 (24.73–28.10)	1.16 (1.00–1.35)	0.047
High	32.1 (30.33–33.80)	48.1 (46.22–49.91)	46.3 (44.23–48.46)	Ref	-	19.9 (18.40–21.34)	21.0 (19.31–22.69)	Ref	-
BMI									
< 18.5	33.1 (25.96–40.27)	37.3 (29.61–44.97)	43.6 (34.91–52.19)	1.27 (0.85–1.89)	0.244	29.6 (22.41–36.78)	26.3 (19.20–33.31)	1.190 (0.79–1.80)	0.398
18.5–24.9	33.8 (31.76–35.87)	40.7 (38.63–42.78)	39.7 (37.33–42.04)	Ref	-	25.5 (23.56–27.41)	25.4 (23.39–27.44)	Ref	-
25.0–29.9	33.2 (30.82–35.51)	41.6 (39.25–43.94)	37.9 (35.39–40.34)	0.92 (0.78–1.08)	0.314	25.2 (23.06–27.43)	26.0 (23.68–28.24)	0.99 (0.82–1.18)	0.876
≥ 30.0	35.7 (32.78–38.72)	36.4 (33.69–39.16)	33.7 (30.85–36.54)	0.77 (0.64–0.93)	0.006	27.8 (25.26–30.39)	28.0 (25.31–30.59)	1.00 (0.82–1.22)	0.994
Not stated	43.9 (40.02–47.71)	28.3 (25.03–31.55)	30.7 (27.16–34.25)	0.65 (0.52–0.80)	<0.001	27.8 (24.29–31.40)	27.4 (23.74–31.10)	0.90 (0.71–1.14)	0.371

Table 4 (continued)

	Neutral/Don't know (Ref)	Support				Oppose				
		Unadjusted % (95%CI)	Unadjusted % (95%CI)	Adjusted % (95%CI)	aOR (95%CI)	<i>p</i> value	Unadjusted % (95%CI)	Adjusted % (95%CI)	aOR (95%CI)	<i>p</i> value
Perceived income adequacy										
Difficult	35.2 (32.59–37.86)	34.2 (31.67–36.67)	35.6 (32.97–38.24)	0.85 (0.71–1.01)	0.058	30.6 (28.13–33.08)	28.7 (26.30–31.18)	1.04 (0.86–1.25)	0.711	
Neither easy nor difficult	40.3 (38.16–42.52)	34.6 (32.61–36.63)	34.7 (32.47–36.83)	0.72 (0.63–0.84)	<0.001	25.0 (23.11–26.97)	24.7 (22.79–26.69)	0.78 (0.66–0.93)	0.004	
Easy	30.5 (28.59–32.39)	45.2 (43.26–47.21)	39.9 (37.63–42.12)	Ref	-	24.3 (22.49–26.06)	26.3 (24.27–28.34)	Ref	-	
Presence of children in the household										
No/not stated	34.7 (33.27–36.20)	38.4 (36.96–39.80)	36.3 (34.76–37.90)	Ref	-	26.9 (25.54–28.23)	27.0 (25.59–28.34)	Ref	-	
Yes	38.1 (35.41–40.76)	37.4 (34.91–39.98)	38.4 (35.47–41.41)	1.05 (0.89–1.23)	0.565	24.5 (22.08–26.85)	24.5 (21.85–27.22)	0.90 (0.75–1.09)	0.279	
SSB healthfulness perceptions										
Very unhealthy	29.9 (28.12–31.63)	49.8 (47.94–51.59)	49.0 (47.05–51.00)	Ref	-	20.4 (18.89–21.83)	20.4 (18.87–21.96)	Ref	-	
Unhealthy	39.3 (36.84–41.72)	30.3 (28.19–32.47)	30.2 (27.94–32.38)	0.47 (0.41–0.55)	<0.001	30.4 (28.08–32.70)	30.0 (27.72–32.36)	1.13 (0.95–1.34)	0.159	
A little unhealthy	40.4 (36.78–43.98)	21.9 (19.00–24.71)	21.4 (18.47–24.28)	0.32 (0.26–0.40)	<0.001	37.8 (34.12–41.40)	37.5 (33.76–41.19)	1.36 (1.10–1.69)	0.004	
Neither unhealthy nor healthy	50.5 (44.63–56.38)	13.5 (9.85–17.06)	13.9 (10.14–17.57)	0.17 (0.12–0.24)	<0.001	36.0 (30.33–41.75)	36.3 (30.50–42.02)	1.09 (0.82–1.45)	0.566	
A little healthy	54.1 (41.67–66.52)	28.3 (17.93–38.57)	29.2 (18.90–39.51)	0.35 (0.20–0.61)	<0.001	17.7 (8.12–27.18)	18.8 (8.91–28.66)	0.54 (0.27–1.10)	0.089	
Healthy	41.2 (23.81–58.64)	39.5 (22.39–56.55)	42.1 (25.09–59.11)	0.68 (0.31–1.46)	0.320	19.3 (7.36–31.25)	19.0 (7.07–31.01)	0.73 (0.31–1.74)	0.481	
Very healthy	33.5 (16.50–50.42)	39.6 (25.19–53.99)	42.3 (29.21–55.38)	0.85 (0.42–1.69)	0.635	27.0 (12.08–41.82)	26.5 (11.60–41.48)	1.28 (0.49–3.31)	0.618	
SSB consumption in past 7 days, vol										
Quartile 1	31.6 (29.20–33.97)	48.7 (46.30–51.10)	41.3 (38.64–43.88)	Ref	-	19.7 (17.84–21.58)	22.4 (20.20–24.57)	Ref	-	
Quartile 2	38.3 (35.51–41.09)	39.2 (36.45–41.85)	38.6 (35.85–41.42)	0.89 (0.74–1.06)	0.195	22.5 (20.13–24.97)	23.1 (20.61–25.48)	0.98 (0.79–1.21)	0.830	
Quartile 3	35.0 (32.32–37.75)	34.7 (32.10–37.28)	33.8 (31.09–36.55)	0.84 (0.70–1.01)	0.061	30.3 (27.66–32.90)	30.6 (27.95–33.23)	1.40 (1.14–1.71)	0.002	
Quartile 4	34.4 (31.52–37.29)	31.0 (28.31–33.62)	33.0 (30.04–35.96)	0.84 (0.69–1.03)	0.090	34.6 (31.75–37.51)	32.6 (29.66–35.48)	1.54 (1.24–1.90)	<0.001	
Not stated	42.2 (37.84–46.61)	34.3 (30.21–38.46)	36.3 (31.83–40.73)	0.78 (0.61–0.99)	0.041	23.4 (19.74–27.15)	22.7 (18.92–26.40)	0.90 (0.68–1.18)	0.434	

Support for SSB tax policies was assessed by asking: 'Would you support or oppose a government policy that would require...' followed by a series of public policies displayed in random order, including 'Taxes on sugary drinks'

aOR, adjusted odds ratio; CI, confidence interval; BMI, body mass index; SSB, sugar-sweetened beverage

Table 5 Multinomial logistic regression model investigating support for taxes on sugar-sweetened beverages IF the money was spent on subsidizing healthy foods in the International Food Policy Study ($N=8709$)

	Neutral/Don't know (Ref)	Support				Oppose			
	Unadjusted % (95%CI)	Unadjusted % (95%CI)	Adjusted (95%CI)	aOR (95%CI)	<i>p</i> value	Unadjusted % (95%CI)	Adjusted (95%CI)	aOR (95%CI)	<i>p</i> value
Year									
2021	34.6 (32.81–36.44)	46.6 (44.76–48.43)	45.7 (43.79–47.68)	Ref	-	18.8 (17.34–20.22)	18.8 (17.32–20.24)	Ref	-
2022	33.6 (31.81–35.45)	48.0 (46.19–49.91)	48.8 (46.82–50.79)	1.14 (1.00–1.29)	0.048	18.3 (16.85–19.79)	17.9 (16.38–19.32)	1.01 (0.86–1.19)	0.888
Region									
Newfoundland and Labrador	25.2 (20.72–29.60)	55.8 (50.97–60.67)	54.2 (49.08–59.34)	Ref	-	19.0 (14.90–23.14)	18.9 (14.60–23.14)	Ref	-
Rest of Canada	34.3 (32.97–35.57)	47.2 (45.87–48.51)	47.1 (45.72–48.55)	0.68 (0.52–0.87)	0.003	18.5 (17.51–19.59)	18.3 (17.27–19.35)	0.76 (0.54–1.06)	0.109
Age									
18–29 y	43.7 (40.50–46.92)	38.7 (35.61–41.72)	41.5 (38.18–44.86)	Ref	-	17.6 (15.23–20.02)	16.9 (14.45–19.25)	Ref	-
30–44 y	38.2 (35.62–40.71)	43.6 (41.06–46.14)	43.1 (40.14–46.06)	1.12 (0.92–1.37)	0.247	18.2 (16.25–20.22)	18.4 (16.16–20.65)	1.18 (0.92–1.51)	0.188
45–59 y	30.6 (28.04–33.11)	48.7 (46.00–51.34)	47.2 (44.42–49.98)	1.47 (1.20–1.79)	<0.001	20.8 (18.56–22.95)	20.5 (18.25–22.77)	1.57 (1.22–2.02)	0.001
≥ 60 y	28.1 (25.91–30.22)	54.3 (51.97–56.55)	53.7 (51.13–56.28)	1.86 (1.52–2.27)	<0.001	17.7 (15.91–19.45)	17.3 (15.32–19.20)	1.47 (1.13–1.90)	0.004
Sex									
Male	35.9 (34.03–37.74)	44.0 (42.20–45.86)	45.6 (43.63–47.61)	Ref	-	20.1 (18.60–21.58)	19.0 (17.46–20.48)	Ref	-
Female	32.4 (30.66–34.20)	50.5 (48.67–52.37)	48.8 (46.86–50.81)	1.13 (1.00–1.29)	0.057	17.0 (15.63–18.47)	17.7 (16.23–19.16)	0.99 (0.84–1.16)	0.878
Ethnicity									
Majority	32.6 (31.16–34.10)	48.2 (46.69–49.70)	47.5 (45.93–49.13)	Ref	-	19.2 (17.99–20.35)	18.7 (17.51–19.85)	Ref	-
Minority	39.2 (36.61–41.86)	44.3 (41.72–46.91)	46.2 (43.22–49.18)	0.90 (0.77–1.04)	0.152	16.5 (14.38–18.54)	17.2 (14.78–19.52)	0.85 (0.69–1.04)	0.114
Education level									
Low	38.5 (35.96–41.09)	39.9 (37.40–42.45)	40.9 (38.25–43.63)	0.54 (0.46–0.64)	<0.001	21.6 (19.47–23.63)	20.4 (18.26–22.47)	0.95 (0.78–1.15)	0.586
Medium	32.7 (30.96–34.37)	49.9 (48.07–51.69)	48.6 (46.61–50.50)	0.74 (0.65–0.84)	<0.001	17.5 (16.09–18.82)	17.6 (16.17–19.07)	0.94 (0.79–1.11)	0.446
High	29.1 (27.38–30.74)	55.7 (53.91–57.58)	55.7 (53.58–57.75)	Ref	-	15.2 (13.87–16.52)	15.9 (14.34–17.35)	Ref	-
BMI									
< 18.5	30.7 (23.56–37.88)	48.2 (40.39–56.03)	54.2 (45.86–62.51)	1.41 (0.95–2.08)	0.085	21.1 (14.73–27.41)	19.6 (13.45–25.72)	1.41 (0.90–2.21)	0.134
18.5–24.9	33.2 (31.13–35.24)	48.8 (46.66–50.95)	48.9 (46.54–51.35)	Ref	-	18.0 (16.34–19.69)	17.7 (15.99–19.38)	Ref	-
25.0–29.9	31.3 (28.91–33.61)	50.6 (48.16–53.03)	48.9 (46.27–51.44)	1.01 (0.86–1.18)	0.948	18.1 (16.22–20.07)	18.0 (16.01–20.01)	1.03 (0.84–1.26)	0.807
≥ 30.0	32.0 (29.12–34.79)	48.2 (45.26–51.14)	46.9 (43.82–49.94)	0.95 (0.79–1.14)	0.586	19.9 (17.59–22.11)	19.5 (17.17–21.84)	1.10 (0.88–1.37)	0.422
Not stated	46.2 (42.31–50.07)	35.7 (32.23–39.25)	38.6 (34.71–42.41)	0.61 (0.49–0.74)	<0.001	18.1 (15.06–21.08)	18.0 (14.91–21.13)	0.78 (0.60–1.02)	0.066

Table 5 (continued)

	Neutral/Don't know (Ref)	Support				Oppose			
	Unadjusted % (95%CI)	Unadjusted % (95%CI)	Adjusted (95%CI)	aOR (95%CI)	<i>p</i> value	Unadjusted % (95%CI)	Adjusted (95%CI)	aOR (95%CI)	<i>p</i> value
Perceived income adequacy									
Difficult	34.0 (31.38–36.64)	43.9 (41.30–46.60)	45.6 (42.88–48.40)	0.87 (0.74–1.03)	0.115	22.0 (19.84–24.25)	21.0 (18.88–23.18)	1.11 (0.90–1.36)	0.332
Neither easy nor difficult	38.9 (36.76–41.10)	44.3 (42.17–46.48)	45.7 (43.38–47.96)	0.77 (0.67–0.89)	<0.001	16.7 (15.08–18.40)	16.5 (14.82–18.09)	0.76 (0.63–0.92)	0.004
Easy	29.3 (27.37–31.17)	53.2 (51.19–55.22)	50.0 (47.68–52.34)	Ref	-	17.5 (15.99–19.05)	18.1 (16.39–19.90)	Ref	-
Presence of children in the household									
No/not stated	33.3 (31.85–34.77)	47.7 (46.22–49.21)	47.1 (45.54–48.72)	Ref	-	19.0 (17.79–20.15)	18.7 (17.52–19.88)	Ref	-
Yes	37.3 (34.67–40.00)	45.7 (43.07–48.41)	47.6 (44.48–50.77)	0.97 (0.83–1.14)	0.747	16.9 (14.86–19.00)	16.9 (14.53–19.31)	0.87 (0.70–1.08)	0.211
SSB healthfulness perceptions									
Very unhealthy	26.7 (25.01–28.41)	59.3 (57.51–61.16)	59.1 (57.19–60.98)	Ref	-	13.9 (12.69–15.20)	13.8 (12.53–15.07)	Ref	-
Unhealthy	40.3 (37.83–42.75)	39.4 (37.04–41.73)	39.9 (37.45–42.30)	0.46 (0.39–0.53)	<0.001	20.3 (18.32–22.34)	20.0 (18.04–22.04)	0.98 (0.81–1.19)	0.856
A little unhealthy	40.4 (36.82–44.05)	32.0 (28.65–35.42)	32.6 (28.97–36.19)	0.37 (0.30–0.46)	<0.001	27.5 (24.21–30.85)	27.1 (23.71–30.50)	1.32 (1.05–1.67)	0.019
Neither unhealthy nor healthy	53.1 (47.26–58.89)	19.2 (14.90–23.52)	20.5 (15.97–25.09)	0.18 (0.13–0.25)	<0.001	27.7 (22.66–32.78)	28.3 (23.03–33.54)	1.09 (0.80–1.48)	0.600
A little healthy	45.6 (33.03–58.16)	31.7 (20.75–42.66)	33.3 (21.88–44.65)	0.37 (0.21–0.65)	0.001	22.7 (10.63–34.77)	24.9 (12.66–37.14)	1.17 (0.56–2.44)	0.676
Healthy	30.8 (16.24–45.40)	43.1 (25.94–60.29)	47.6 (30.89–64.24)	0.83 (0.39–1.76)	0.631	26.1 (8.94–43.20)	26.2 (8.21–44.18)	1.96 (0.67–5.77)	0.221
Very healthy	32.7 (15.69–49.72)	40.2 (25.62–54.68)	43.4 (30.11–56.68)	0.69 (0.34–1.40)	0.298	27.1 (12.35–41.94)	27.5 (12.59–42.48)	1.86 (0.71–4.85)	0.203
SSB consumption in past 7 days, vol									
Quartile 1	30.0 (27.62–32.30)	55.7 (53.31–58.16)	49.7 (47.01–52.35)	Ref	-	14.3 (12.67–15.94)	15.9 (14.05–17.80)	Ref	-
Quartile 2	36.2 (33.47–39.03)	49.6 (46.79–52.44)	50.5 (47.52–53.46)	1.00 (0.84–1.19)	0.988	14.1 (12.23–16.03)	14.5 (12.57–16.44)	0.90 (0.71–1.14)	0.353
Quartile 3	32.4 (29.76–35.09)	46.2 (43.43–49.00)	46.8 (43.74–49.75)	1.02 (0.85–1.22)	0.858	21.4 (19.06–23.66)	21.4 (19.03–23.81)	1.45 (1.16–1.83)	0.001
Quartile 4	35.3 (32.35–38.21)	39.4 (36.52–42.23)	42.5 (39.39–45.56)	0.87 (0.71–1.05)	0.139	25.3 (22.71–27.98)	23.5 (20.97–26.10)	1.50 (1.19–1.89)	0.001
Not stated	41.4 (37.02–45.83)	42.1 (37.81–46.41)	45.1 (40.66–49.49)	0.80 (0.64–1.00)	0.055	16.5 (13.24–19.68)	15.9 (12.71–19.12)	0.88 (0.65–1.20)	0.418

Support for SSB tax policies was assessed by asking: 'Would you support or oppose a government policy that would require...' followed by a series of public policies displayed in random order, including 'Taxes on sugary drinks IF the money was spent on subsidizing healthy foods'

aOR, adjusted odds ratio; CI, confidence interval; BMI, body mass index; SSB, sugar-sweetened beverage

et al., 2025a, 2025b). About 20% of participants in the rest of Canada (areas without SSB excise taxes) self-reported higher SSB costs between 2021 and 2022, aligning with a previous cross-sectional study where 20% of participants reported higher SSB costs in Australia and the USA, despite not having national SSB taxes (Acton et al., 2022). Participants may have misattributed higher costs to media attention of policies in other regions or high levels of inflation (Acton et al., 2022; Statistics Canada, 2023).

Self-reported purchases

The majority of tax-aware NL participants (64–77%) self-reported ‘no change/don’t know’ for purchasing at least one taxed drink post-tax, suggesting that awareness alone may be insufficient to drive behaviour change among most consumers. Among self-reported changes, a greater proportion of participants purchased fewer (vs. more) taxed drinks (particularly regular soda, regular energy drinks, and sweetened fruit drinks), as well as fewer low/no-calorie drinks, and some untaxed drinks. These findings align with evidence from the report of NL’s SSB tax, which found a decrease in the likelihood of consuming taxable SSBs post-implementation (24%), along with an increase in the likelihood of consuming non-taxable SSBs (52%; e.g., sweetened milks), and mixed patterns for unsweetened beverages (e.g., plain milk increased by 20%, while plain bottled water decreased by 15%) (Prowse et al., 2025a). Although mean volume of diet beverage consumption increased pre- versus post-implementation, no changes were observed for taxable SSBs, non-taxable SSBs, and unsweetened beverages (Prowse et al., 2025a). This finding indicates that the tax may have primarily influenced beverage consumption and choice patterns, rather than reducing total beverage intake (Prowse et al., 2025a).

Previous cross-sectional studies across Mexico, South Africa, the UK, and the USA reported decreases in similar drinks post-tax (e.g., 24–41% reductions in soft drinks vs. 34% in the current study) (Acton et al., 2022; Case et al., 2022; Murukutla et al., 2020). NL participants in the current study also self-reported buying more untaxed drinks (plain bottled water and white milk/unsweetened alternatives) post-tax, in line with previous cross-sectional studies in multiple countries (Acton et al., 2022; Colchero et al., 2017). As NL participants self-reported greater reductions in taxed and low/no-calorie drinks than those in BC (despite similar inflation between provinces) (Statistics Canada, 2023), the dedicated SSB excise tax may have promoted larger behaviour changes than the tax adjustment, possibly due to greater policy awareness and strength. Likewise, the NL SSB tax report found that per capita sales of taxable SSBs by volume declined more in NL than non-tax regions pre- versus post-implementation (12% versus 7%) (Prowse et al.,

2025a; Prowse et al., 2025a, 2025b). However, reduced drink purchases across all categories could relate to inflation (e.g., grocery prices rose nearly 10% over 2022), while reductions in low/no-calorie or diet drinks may be associated with rising awareness of additives, such as sweeteners (Farhat et al., 2021; Statistics Canada, 2023).

Self-reported policy support

As predicted, support for government policies that would require taxes on sugary drinks was higher when revenue was earmarked for healthy food subsidies, regardless of year or region (including BC); this suggests that policy support may depend on tax framing. While support for a general SSB tax (without specification that revenue would subsidize healthy foods) decreased and opposition increased in NL post-tax (possibly due to anti-tax media campaigns or paying higher prices) (Oddo et al., 2022), strategic framing of revenue use (e.g., NL’s investment in community programs) (Government of Newfoundland and Labrador, n.d.-a; Lowery, 2023) may have helped maintain public support; these findings align with previous research across countries like South Africa and the USA on the use of framing to promote policy support post-tax (Lowery, 2023; Murukutla et al., 2020).

Lifestyle factors

Participants with higher SSB healthfulness perceptions (perceiving SSBs as healthy) were more likely to be tax aware, suggesting they may engage with SSB-tax-related content without internalizing their negative health effects. Those with both higher SSB healthfulness perceptions and consumption levels were more likely to perceive SSBs as costing ‘a little more’ (possibly due to perceived healthiness or frequent purchases), but were neither more likely to self-report changing drink purchases nor support SSB tax policies, regardless of framing. Collectively, these findings suggest the need for measures beyond price increases (e.g., targeted education on SSB health effects or marketing restrictions) to shift perceptions and purchases among these individuals.

Limitations

This study is subject to limitations common to survey research. Respondents were recruited using non-probability-based sampling; therefore, the findings do not provide nationally representative estimates. However, quota sampling based on age and sex, and post-stratification weights (constructed using age group, sex, region, and education) may have increased the generalizability of findings. The

prevalence of self-reported overweight and obesity was also similar between the IFPS sample and Canada's national benchmark survey (Hammond et al., 2023, 2024).

BC changed their tax policy on carbonated and effervescent beverages in 2021 (7–8 months prior to data collection); however, the sensitivity analysis found lower levels of SSB tax awareness, perceived costs, and changes in drink purchases in this province versus NL. Additionally, this study characterized taxed and untaxed beverages to align with NL's tax; however, some beverages may have been misclassified (e.g., chocolate-flavoured milk is excluded from the tax, but shakes and milkshakes are not exempt, and participants may have included both in their impact responses). Self-reported measures were used, which may have led to recall errors or social desirability bias; however, the online and anonymous nature of the survey may have helped limit the latter.

Sociodemographics were not interpreted in this study; however, previous research recognizes that SSB intake varies by factors such as ethnicity. Specifically, Canada's Indigenous populations often consume SSBs (due in part to low cost and inadequate access to clean drinking water), and experience higher levels of food insecurity and poorer health outcomes (Kisselgoff et al., 2023). As such, future studies should examine perceptions and responses to SSB taxes among these populations and use collaborative methods to develop culturally acceptable health-promoting solutions (Kisselgoff et al., 2023).

Conclusions

The current study found differences in self-reported perceptions and responses to NL's SSB tax in Canada, pre- and post-implementation. As expected, self-reported tax awareness and perceived SSB costs were higher in NL post-tax, and opposition to tax policies was low (particularly with framing around healthy food subsidies), regardless of region. While some NL participants self-reported decreasing taxed purchases, most reported 'no change/don't know', suggesting the need for complementary policies, like education and marketing restrictions; such initiatives may particularly benefit frequent consumers and those who perceive SSBs as healthy. NL's SSB tax was eliminated in July 2025 to address concerns about food affordability (Government of Newfoundland & Labrador, 2025), highlighting the importance of political will and the need for sustainable, multi-faceted approaches to reduce sugar intake and better support public health.

Contributions to knowledge

What does this study add to existing knowledge?

- The SSB excise tax in NL was associated with greater self-reported awareness and perceived cost of SSBs, as well as reduced self-reported purchases of taxed, low/no-calorie, and diet drinks.
- Despite opposition increasing in NL in 2022, self-reported support for SSB tax policies was high across Canada, especially when revenue was used to subsidize healthy food programs.
- The sensitivity analysis suggests that consumer perceptions and responses in NL were more likely to shift post-dedicated SSB excise tax than those in BC post-sales tax adjustment on carbonated beverages.

What are the key implications for public health interventions, practice or policy?

- Most participants in NL did not change their drink purchases, suggesting the need for education on the health outcomes associated with SSB intakes, and/or complementary policies for further decreases; however, the observed reductions in self-reported SSB purchases could translate to large impacts on consumption at the population level.
- One-quarter of participants in NL self-reported SSBs cost the same as non-sugary drinks, suggesting that the tax could have been enhanced by strategies to increase price changes associated with the tax and/or consumer understanding of the tax rationale.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.17269/s41997-026-01259-x>.

Author contributions Hammond, Vanderlee, and C.M. White designed and conducted the research. Hock, Acton, Rynard, and Hammond analyzed the data. Hock wrote the first draft with contributions from Acton and Hammond. Hammond, Vanderlee, C.M. White, Acton, Rynard, Sacks, and M. White reviewed and edited the paper. Hammond and Hock had primary responsibility for final content. All authors read and approved the final manuscript.

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Data availability Data will be made available on request.

Code availability Code will be made available on request.

Declarations

Ethics approval The study was reviewed by and received ethics clearance through a University of Waterloo Research Ethics Board (REB# 30829).

Consent to participate Informed consent was obtained from all individual participants included in the study.

Consent for publication Not applicable

Conflict of interest Hammond has provided paid expert testimony on behalf of public health authorities in response to legal challenges from the food and beverage industry.

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