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FOOD POLICY
STUDY

TECHNICAL REPORT

2020 YOUTH SURVEY

SEPTEMBER 13, 2024

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METHODS

The primary objective of the International Food Policy Study (IFPS) is to evaluate the impact of national-level food policies. The IFPS project consists of repeat cross-sectional surveys conducted annually with adults and youth to examine dietary patterns and policy-relevant behaviours across countries. Adult surveys are conducted in five countries (Australia, Canada, Mexico, the United Kingdom (UK), and the United States (US)), whereas youth surveys are conducted in six countries (Australia, Canada, Chile, Mexico, the UK, and the US). The study provides a quasi-experimental design for evaluating federal-level policies by providing both 'within' and 'between-country' measures over time. The current report describes methodology for the IFPS Youth Surveys; Technical Reports for the IFPS Adult Surveys are available on the project website (www.foodpolicystudy.com/methods).

SAMPLE & RECRUITMENT

Online surveys were conducted with youth in 2020 with a total of 12,031 respondents from six countries: Australia (n=1,595), Canada (n=3,895), Chile (n=1,615) Mexico (n=1,823), the UK (n=1,521), and the US (n=1,582). The first wave of the IFPS youth survey was conducted in November-December 2019, and second wave was conducted in November-December 2020. A total of 92 respondents completed surveys in both Wave 1 and Wave 2 (0.8% of the Wave 2 sample).

The sample was recruited through parents/guardians enrolled in the Nielsen Consumer Insights Global Panel, which maintains and/or has partner panels in each country. The panels are recruited using both probability and non-probability sampling methods. The Nielsen panel provides standardized recruitment sampling across countries. For the current study, Nielsen contacted adults from the online panels in each country, using email invitations with unique survey access links. Adult panelists were screened to identify whether they had any children aged 10 to 17 living in their household. Parents/guardians with a potentially eligible child were provided information about the study, and asked for permission for their child to participate. Only one child per household was invited to participate. The child was subsequently screened directly to confirm eligibility based on age and sex. Children aged 10 to 17 years were eligible to participate, with quotas for age and sex in the UK and US. Eligible children were provided study information and asked to provide assent before beginning the survey.

In the UK and US, quotas for age and sex were applied to facilitate recruitment of a diverse sample for males and females in two age groups: 10-13 and 14-17 years of age. These quotas were not applied in other countries due to more limited panel sizes. Sample targets were used to recruit English- and French- speaking respondents in Canada, and English- and Spanish- speaking respondents in USA proportional to the population distribution.

The child's parent/guardian (adult panelist) received remuneration in accordance with their panel's usual incentive structure, which includes points-based or monetary rewards that can be redeemed for e-gift cards, catalog items, cash, donations and/or chances to win monthly prizes. These incentives have been shown to increase response rates and decrease response bias in sub-groups under-represented in surveys, including disadvantaged subgroups.[1,2,3] Remuneration was provided to the parents/guardians, rather than the children because the children did not have their own panelist accounts, and Nielsen and their partner panels did not have contact information for the children.

All data collection was conducted online, which provides several advantages, including the use of product images to assess beverage consumption and in experimental tasks, and the use of 'skip patterns' and questionnaire routing to account for differential patterns of use. Online surveys can also reduce social desirability bias, compared to in-person and phone surveys, by providing greater anonymity for sensitive topics such as weight bias and stigma.[4,5]

Online survey methods are well-established, and are emerging as the preferred mode for population-based surveys given declining response rates from random digit dialled (RDD) phone surveys.[6,7,8,9] Until recently, online surveys were constrained by limited internet penetration. However, internet penetration now exceeds "landlines", even among lower socioeconomic groups: in Australia, Canada, the UK and the US, internet usage in the population approximates 90% or more.[10,11,12,13] Internet penetration is lower in Mexico, but still widespread with approximately 70% of Mexicans using the internet.[14]

Respondents were permitted to complete the survey on desktop or laptop computers, or mobile devices including smartphones or tablets. Some survey measures rendered differently on devices with smaller screen sizes such as smartphones. Measures involving scales from 0 to 10 displayed the scale horizontally on desktops and laptops, and vertically on smartphones and tablets. Overall, half (49.5%) of respondents completed the survey on a smartphone (Mexico=60.1%; Canada=50.0%; Australia=43.4%; Chile=55.5%; UK=51.5%; US=33.8%).

PARTICIPATION RATES

Table 1 indicates the number of youth survey invitations sent in each country. The youth survey was 'closed' when target quotas were met.

For commercial panels that include non-probability based sample, the American Association for Public Opinion Research (AAPOR) recommends reporting the 'participation rate', also referred to a 'completion rate'. The participation rate is defined as "the number of respondents who have provided a usable response divided by the total number of initial personal invitations requesting participation".[15] Participation rates are largely a product of sample management and the amount of sample that is 'released' prior to reaching target quotas.

Participation rates for eligible participants were calculated for the current study as follows:

> Participation Rate = Completes / Total Eligible Invites
>
> Total Eligible Invites = Unknown Eligible - [Unknown Eligible * (Ineligible / (Known Eligible + Unknown Eligible + Ineligible))] + Eligible, no consent + Completes
>
> Unknown Eligible = Did not access survey + Accessed survey, unknown eligibility

The total participation rate was 3.5%. As shown in Table 1, 353,443 invitations were sent to panelists; 15,515 potential respondents (4.4%) accessed the survey link; and 12,031 respondents (3.4%) completed the IFPS survey and were retained in the sample.

The cooperation rate represents "the proportion of all cases interviewed of all eligible units ever contacted".[15] Across all countries, the cooperation rate was 79.6%, which was calculated based on AAPOR Cooperation Rate #2, as the percentage of respondents who completed the survey (12,031) of those eligible who accessed the survey link (15,118).

TABLE 1: Dispositions of potential respondents for the IFPS Youth Survey, by country, 2020

Disposition	Total		Australia		Canada		Chile		Mexico		United Kingdom		United States	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Invitations sent	353,443		31,540		68,008		71,889		54,274		15,216		112,516	
Did not access survey	337,928	95.6	29,527	93.6	63,027	92.7	69,645	96.9	52,119	96.0	13,218	86.9	110,392	98.1
Total accessed survey	15,515	4.4	2,013	6.4	4,981	7.3	2,244	3.1	2,155	4.0	1,998	13.1	2,124	1.9
Accessed survey link, unknown eligibility[a]	1,306	0.4	139	0.4	539	0.8	223	0.3	100	0.2	166	1.1	139	0.1
Ineligible[b]	364	0.1	65	0.2	60	0.1	54	0.1	35	0.1	22	0.1	128	0.1
Eligible, no consent	147	0.0	19	0.1	52	0.1	18	0.0	16	0.0	22	0.1	20	0.0
Eligible, partial[c]	1,209	0.3	140	0.4	330	0.5	299	0.4	155	0.3	177	1.2	108	0.1
Completes	12,489	3.5	1,650	5.2	4,000	5.9	1,650	2.3	1,849	3.4	1,611	10.6	1,729	1.5
Excluded, data quality[d]	458	0.1	55	0.2	105	0.2	35	0.0	26	0.0	90	0.6	147	0.1
No / ineligible region	19	0.0	1	0.0	4	0.0	10	0.0	1	0.0	2	0.0	1	0.0
Failed data quality check	320	0.1	47	0.1	67	0.1	16	0.0	25	0.0	50	0.3	115	0.1
Speeding	86	0.0	4	0.0	32	0.0	7	0.0	0	0.0	36	0.2	7	0.0
Other issue	33	0.0	3	0.0	2	0.0	2	0.0	0	0.0	2	0.0	24	0.0
Complete, retained	12,031	3.4	1,595	5.1	3,895	5.7	1,615	2.2	1,823	3.4	1,521	10.0	1,582	1.4

[a] Parent/guardian did not provide consent, or respondent closed the survey link before the age question (in all countries) and sex screening question (in the US and UK) were completed and eligibility determined

[b] Respondent screened ineligible due to ineligible age (<10 or >17)

[c] Respondent quit the survey before finishing

[d] Respondent failed to state their region or stated their region as in another country or an ineligible region (i.e., a territory in Canada), and/or failed to answer or incorrectly answered the data quality check question, "Which of these foods is a fruit?", and/or completed the survey in less than 10 minutes, indicating "speeding" and presumably lack of attention, and/or provided unrelated responses to at least two open-ended questions, or nonsensical typing and/or unrelated responses in all three open-ended questions (two in Chile/Mexico).

SURVEY CONTENT AND DEVELOPMENT

The study assessed five primary policy domains: school nutrition environments, sugary drink policies, food packaging and labelling, food marketing, and food guide/dietary recommendations. The study has a particular focus on consumer perceptions and behaviours, including dietary patterns, beverage intake, sources of food purchases, food preparation, weight loss behaviour, weight perceptions, sugary drink perceptions, nutrition knowledge, and food security.

Where possible, questionnaire items were drawn or adapted from national surveys and the adult IFPS survey or selected based on previous research. Several new measures were also developed by the research team. Cognitive interviewing was previously conducted with 50 young adults aged 16-30 years in Canada to evaluate the adult version of the beverage frequency measures.[16,17] Cognitive interviewing was also conducted with 8 children aged 10-13 years in Canada to evaluate and improve several new items in the youth survey, including measures on food sources, beverage intake, food security, and food marketing.

Surveys were conducted in English in Australia and the UK; Spanish in Mexico and Chile; English or French in Canada; and English or Spanish in the US (based on the panelist's known language preference). The youth questionnaire was professionally translated into French survey by Sirois French Translation Services (Montreal, Canada), and into Spanish by Communications Parisella, etc. Inc (Montreal, Canada). Some measures were incorporated from the adult IFPS survey which was previously translated into French by Communications

Parisella, etc. Inc, and Spanish by Benton & Associates (Mexico City, Mexico). Translations were reviewed by bilingual research team members who were native in each language and content experts, confirming nutrition-related terminology and adapting country-specific content where necessary, while aiming to maximize comparability across countries. Surveys were adapted for country-specific terminology (e.g., "soda or pop" in Canada vs. "fizzy drinks" in the UK). Survey teams in each country also reviewed beverage and food lists and images to ensure that the measures were representative of the products available in each market.

The median youth survey completion time across countries was 25 minutes (see Table 2 for time, by country).

TABLE 2: Median youth survey time, by country, 2020

Country	Median survey time
	minutes
Australia	24
Canada – overall	24
Canada – English	23
Canada – French	25
Chile	27
Mexico	30
United Kingdom	21
United States - overall	24
United States – English	24
United States – Spanish	26
OVERALL	25

DATA INTEGRITY

As a data integrity check, approximate two-thirds through the survey, respondents were asked "Which of these foods is a fruit", with a list of five food items (bread, carrot, egg, apple, or milk). Respondents who failed to select the correct answer (apple) were excluded from the analytic sample.

Respondents who completed the survey in less than 10 minutes were considered "speeders". The median survey completion time was substantially longer at 25 minutes, thus those who completed in less than 10 minutes would have presumably lacked attention when responding to the survey questions, and consequently were excluded from the analytic sample.

The surveys contained a few open-ended measures which were also reviewed during data cleaning and problematic responses flagged. These measures included city, beverage brand recall, and food guide messages (except in Chile and Mexico). Respondents were excluded from the analytic sample if their response content was unrelated to the question in at least two of the three variables, or if their response included nonsensical typing and/or unrelated content in all three variables (two in Chile and Mexico).

ETHICS CLEARANCE

The study was reviewed by and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE # 41477).

SURVEY WEIGHTS

Post-stratification sample weights were constructed for each country separately based on known population totals by age, sex, region, and ethnicity (except in Canada). Respondents were classified into sex-by-age-by-region groups, and ethnicity-by-region groups (except in Canada). Correspondingly grouped population count and proportion estimates (sex, age, region populations) from each country were obtained.[18,19,20,21,22,23] Population data on ethnicity from each country were also obtained.[20,23,24,25,26,27,28] Separately by country, a raking algorithm was applied to compute weights that are calibrated to these groupings. The SAS macro "RAKE_AND_TRIM_G4_V5" was used, with trimming to 5 (rescaled) if necessary.[29,30] Finally, the weights were rescaled to sum to the sample size in each country. Note: the approach to weighting ethnicity in the United States was enhanced in 2020, as described below.

The tables below indicate the age, sex at birth, region, and ethnicity categories used for weighting by country.

AUSTRALIA

Age groups	Sex at birth	Regions	Ethnicity
1) 10-13 years	1) Male	1) New South Wales	1) Speak language other than English in the home
2) 14-17 years	2) Female	2) Victoria	2) Speak English only in the home
		3) Queensland	
		4) Western Australia	
		5) South Australia	
		6) Tasmania/Australian Capital Territory/ Northern Territory	

Note: Respondents from Tasmania, Australian Capital Territory and Northern Territory were collapsed into one category due to small sample sizes. This means that the Australian data are adjusted to the age, sex and ethnicity of the five larger states but not to Tasmania, Australian Capital Territory, nor Northern Territory individually. Additionally, ethnicity was not used in the 2020 weights for the Tasmania/Australian Capital Territory/Northern Territory group due to small numbers.

The survey weights for Australia ranged from 0.54 to 1.74.

CANADA

Age groups	Sex at birth	Regions
1) 10-11 years	1) Male	1) Atlantic Provinces
2) 12-13 years	2) Female	2) Quebec
3) 14-15 years		3) Ontario
4) 16-17 years		4) Prairie Provinces
		5) British Columbia

Note: Canada had a sample size that was more than double that of the other countries which allowed for a finer age breakdown. Ethnicity was not incorporated in the development of weights for Canada due to inconsistent collection methods/response options used in national surveys/census.

The survey weights in Canada ranged from 0.60 to 1.67.

CHILE

Age groups	Sex at birth	Regions	Ethnicity
1) 10-13 years	1) Male	1) North region	1) Indigenous
2) 14-17 years	2) Female	2) Centre region	2) Not Indigenous
		3) South region	
		4) Santiago region	

The survey weights for Chile ranged from 0.58 to 2.34.

MEXICO

Age groups	Sex at birth	Regions	Ethnicity
1) 10-13 years	1) Male	1) North region	1) Indigenous
2) 14-17 years	2) Female	2) South region	2) Not Indigenous
		3) Centre region	
		4) Mexico City region	

Note: In 2019, the Mexico population data used to create the weights was provided in 5-year age group segments with 10-14 years being one of the groups, so the age groups used for weights were adjusted from 10-13 years (used in other countries) to 10-14 years to align with the data. In 2020, the 10-13 and 14-17 age groups were able to be used in Mexico.

The survey weights for Mexico ranged from 0.14 to 4.55.

UNITED KINGDOM

Age groups	Sex at birth	Regions	Ethnicity
1) 10-13 years	1) Male	1) North East	1) White alone
2) 14-17 years	2) Female	2) North West	2) Other
		3) Yorkshire and the Humber	
		4) East Midlands	
		5) West Midlands	
		6) East of England	
		7) London	
		8) South East	
		9) South West	
		10) Scotland	
		11) Wales	
		12) Northern Ireland	

Note: North East, South West, Scotland, Wales, and Northern Ireland were collapsed together and East Midlands and East of England were collapsed together for the ethnicity-by-region groups due to low numbers in the 'Other' ethnicity cells.

The survey weights for the UK ranged from 0.64 to 3.22.

UNITED STATES

Age groups	Sex at birth	Regions	Ethnicity
1) 10-13 years	1) Male	1) New England	1) White alone and not Hispanic
2) 14-17 years	2) Female	2) Middle Atlantic	2) Other
		3) East North Central	
		4) West North Central	
		5) South Atlantic	
		6) East South Central	
		7) West South Central	
		8) Mountain	
		9) Pacific	

Note: Ethnicity was collapsed in New England due to small sample sizes.

The survey weights for the US ranged from 0.31 to 4.86.

In the 2020 survey wave, the method previously used to construct weights for US respondents was revised. Papers completed before 2022 using data from the 2019 youth survey employed weights for US respondents where ethnicity was categorized as 'White alone' (regardless of Hispanic status) or 'Other'. In the 2020 wave, ethnicity was instead categorized as 'White alone and not Hispanic' or 'Other' to better align with census estimates. Revised weights were also constructed retroactively for the 2019 US dataset; any new papers using the 2019 US data should use these revised weights.

SAMPLE CHARACTERISTICS

The demographic characteristics of the youth sample, by country, are shown in Table 3.

TABLE 3: Sample Demographics, by country, IFPS Youth Survey, 2020 n=12,031

Disposition	Australia n=1,595		Canada n=3,895		Chile n=1,615		Mexico n=1,823		United Kingdom n=1,521		United States n=1,582	
	Unweighted % (n)	Weighted % (n)	Unweighted % (n)	Weighted % (n)	Unweighted % (n)	Weighted % (n)	Unweighted % (n)	Weighted % (n)	Unweighted % (n)	Weighted % (n)	Unweighted % (n)	Weighted % (n)
Sex												
Male	52.9% (843)	51.3% (819)	50.2% (1,954)	50.9% (1,984)	57.5% (928)	51.1% (825)	55.6% (1014)	50.7% (925)	49.4% (751)	51.3% (780)	53.0% (838)	51.0% (807)
Female	47.1% (752)	48.7% (776)	49.8% (1,941)	49.1% (1,911)	42.5% (687)	48.9% (790)	44.4% (809)	49.3% (898)	50.6% (770)	48.7% (741)	47.0% (744)	49.0% (775)
Age												
(mean; SD)	13.5 years (SD=2.26)	13.4 years (SD=2.26)	13.6 years (SD=2.25)	13.5 years (SD=2.29)	13.3 years (SD=2.20)	13.5 years (SD=2.20)	13.5 years (SD=2.12)	13.4 years (SD=2.15)	13.7 years (SD=2.00)	13.5 years (SD=2.00)	13.5 years (SD=2.16)	13.5 years (SD=2.19)
Ethnicity												
Majority	76.7% (1,223)	73.9% (1,178)	70.5% (2,745)	69.2% (2,697)	87.2% (1,408)	83.5% (1,348)	85.4% (1,557)	77.9% (1,420)	85.4% (1,299)	82.1% (1,248)	78.4% (1,240)	51.9% (821)
Minority	22.9% (366)	25.7% (411)	28.0% (1,090)	29.2% (1,136)	10.5% (169)	14.5% (233)	12.1% (221)	19.5% (355)	13.7% (209)	17.0% (259)	21.5% (340)	47.8% (757)
Not stated	0.4% (6)	0.4% (6)	1.5% (60)	1.6% (62)	2.4% (38)	2.1% (34)	2.5% (45)	2.6% (48)	0.9% (13)	0.9% (13)	0.1% (2)	0.3% (5)
BMI												
Severe thinness or thinness	3.6% (57)	3.7% (60)	3.8% (147)	3.9% (152)	1.2% (20)	1.2% (19)	1.3% (23)	1.2% (23)	3.2% (48)	3.3% (50)	2.8% (44)	3.0% (47)
Normal	40.9% (652)	41.3% (659)	50.6% (1,971)	49.9% (1,945)	35.6% (575)	37.7% (608)	40.7% (742)	40.8% (744)	35.7% (543)	34.4% (523)	46.0% (727)	45.0% (712)
Overweight	15.8% (252)	15.6% (249)	15.1% (587)	15.2% (594)	18.8% (304)	18.4% (298)	23.6% (430)	22.2% (406)	12.2% (186)	12.3% (187)	20.4% (323)	19.5% (309)
Obesity	9.0% (143)	8.6% (136)	8.4% (329)	8.6% (334)	9.0% (145)	8.2% (133)	10.2% (186)	10.2% (186)	6.2% (95)	6.6% (101)	13.2% (209)	12.5% (198)
Missing – not stated	27.8% (443)	27.9% (444)	20.8% (812)	21.1% (822)	29.3% (473)	28.5% (460)	19.5% (355)	20.3% (370)	41.4% (629)	42.1% (641)	12.1% (192)	14.7% (233)
Missing – extreme values	3.0% (48)	2.9% (47)	1.3% (49)	1.3% (49)	6.1% (98)	6.0% (97)	4.8% (87)	5.2% (95)	1.3% (20)	1.3% (20)	5.5% (87)	5.2% (83)
Perceived Income Adequacy												
Not enough money	4.0% (64)	3.8% (61)	2.5% (96)	2.5% (97)	5.2% (84)	5.5% (89)	4.6% (83)	5.4% (99)	3.8% (58)	4.0% (61)	3.2% (50)	4.1% (66)
Barely enough money	15.9% (254)	15.7% (250)	15.2% (591)	15.4% (598)	26.6% (429)	27.2% (439)	29.5% (537)	32.2% (588)	18.7% (285)	18.6% (284)	15.2% (240)	18.6% (294)
Enough money	63.6% (1,015)	64.0% (1,021)	63.9% (2,490)	63.4% (2,471)	61.7% (996)	61.1% (986)	59.5% (1,084)	57.1% (1,042)	64.1% (975)	63.6% (968)	61.9% (979)	59.1% (935)
More than enough money	15.3% (244)	15.3% (245)	16.9% (657)	17.0% (664)	5.2% (84)	5.1% (83)	5.8% (106)	4.5% (82)	12.2% (185)	12.6% (191)	18.8% (298)	17.3% (273)
Not stated	1.1% (18)	1.2% (18)	1.6% (61)	1.7% (65)	1.4% (22)	1.2% (18)	0.7% (13)	0.7% (12)	1.2% (18)	1.2% (17)	0.9% (15)	0.9% (15)

COMPARISONS WITH NATIONAL BENCHMARK SURVEYS

Australia

Table 4 compares weighted estimates of ethnicity and BMI from the 2020 IFPS Youth Survey with Australian estimates from the Australian Census of Population and Housing conducted in August 2016 and the National Health Survey collected in 2017-2018.

TABLE 4: Prevalence estimates for ethnicity and BMI in Australia

Table 4a. Ethnicity	Census of Population and Housing 2016, ages 10-17 [a, b]	IFPS Youth 2020, ages 10-17 (n=1,595)
	%	Weighted %
Only speaks English at home	78.7	82.8
Speaks a language besides English at home	16.5	16.7
Not stated	4.9	0.5

[a] Australian Bureau of Statistics. Census of Population and Housing, 2016, Table Builder – Cultural Diversity (LANP and ENGLP). 2018. Accessed April 15, 2019. Available from: https://guest.censusdata.abs.gov.au/webapi/jsf/tableView/tableView.xhtml#

[b] Excludes repondents from 'Other Territories'.

Table 4b. BMI	National Health Survey, age 5-17, 2017-2018, directly measured [b]	IFPS Youth 2020, ages 10-17, self-reported
	%	Weighted %
Overweight or obese	24.9 [c]	34.9 of those with valid BMI (n=1,104)
	--	24.2 of the entire sample, including those with missing/not stated BMI (n=1,595)

[b] Australian Bureau of Statistics. National Health Survey: First Results, 2017-2018 - Australia. Available at: https://www.abs.gov.au/statistics/health/health-conditions-and-risks/national-health-survey-first-results/2017-18. Source data obtained from 2017-2018 National Health Survey.

[c] A total of 43.9% of respondents aged 2-17 did not have their height, weight or both measured. For these respondents, imputation was used to obtain height, weight and BMI scores.

Canada

Table 5 compares weighted estimates of ethnicity and BMI from the 2020 IFPS Youth Survey with Canadian estimates from the Canadian Community Health Survey (CCHS) conducted in 2015 and 2019.

TABLE 5: Prevalence estimates for ethnicity and BMI in Canada

Table 5a. Ethnicity	CCHS 2015, age 12+ [a]	IFPS Youth 2020, ages 10-17 (n=3,895)
	%	Weighted %
White only	77.0	69.2
Chinese only [b]	3.3	9.2
South Asian only	3.4	5.1
Black only	2.0	2.8
Indigenous inclusive [c]	4.7	4.0
Mixed/other/not stated/missing	9.6	9.6

[a] Statistics Canada. 2015 Canadian Community Health Survey (CCHS): Ethnic origin, 2015.

[b] IFPS estimate includes 'East/Southeast Asian (Chinese, Korean, Japanese, Taiwanese descent; Filipino, Vietnamese, Cambodian, Thai, Indonesian, other Southeast Asian descent)'.

[b] IFPS estimate includes respondents who selected 'Indigenous (First Nations, Metis, Inuit descent)' alone, or in combination with other race categories.

Table 5b. BMI	CCHS 2015, age 12-17, directly measured [d]	CCHS 2019, age 12-17 adjusted self-report [e]	IFPS Youth 2020, ages 10-17, self-reported
	%	%	Weighted %
Overweight or obese	34.5	24.5 [f]	30.7 of those with valid BMI (n=3,024)
	--	--	23.8 of the entire sample, including those with missing/not stated BMI (n=3,895)

[d] Statistics Canada. Table 13-10-0795-01 Measured children and youth body mass index (BMI) (World Health Organization classification), by age group and sex, Canada and provinces, Canadian Community Health Survey - Nutrition. DOI: 10.25318/1310079501-eng. Available at: https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310079501.

[e] Statistics Canada. Table 13-10-0096-21 Body mass index, overweight or obese, self reported, youth (12 to 17 years old). DOI: https://doi.org/10.25318/1310009601-eng. Available at: https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310009621

[f] Non-responses were removed from the CCHS self-reported calculation. CCHS estimates were calculated excluding non-response categories ("refusal", "don't know", and "not stated") in the denominator.

Chile

Table 6 compares weighted estimates of ethnicity and BMI from the 2020 IFPS Youth Survey with Chilean estimates from the census conducted in 2017, and the Mapa Nutricional Junaeb conducted in 2020.

TABLE 6: Prevalence estimates for ethnicity and BMI in Chile

Table 6a. Ethnicity	Censos 2017, ages 10-17[a]	IFPS Youth 2020, ages 10-17 (n=1,615)
	%	Weighted %
Indigenous	14.3	14.5
Not indigenous/not stated	85.7	85.5

[a] Instituto Nacional de Estadísticas. Censo de Población y Vivienda, 2017. Available at: https://www.ine.cl/estadisticas/sociales/censos-de-poblacion-y-vivienda/poblacion-y-vivienda.

Table 6b. BMI	JUNAEB 2020, ages 14-15, directly measured [b]	IFPS Youth 2020, ages 10-17, self-reported
	%	Weighted %
Overweight or obese	47.8	40.7 of those with valid BMI (n=1,058) 26.7 of the entire sample, including those with missing/not stated BMI (n=1,615)

[b] JUNAEB. Mapa Nutricional 2020. Available at: https://www.junaeb.cl/wp-content/uploads/2021/03/MapaNutricional2020_.pdf. Source data obtained from Encuesta de Vulnerabilidad Junaeb.

Mexico

Table 7 compares weighted estimates of ethnicity and BMI from the 2020 IFPS Youth Survey with Mexican estimates from the Instituto Nacional de Estadística y Geografía (INEGI) collected in 2020, and ENSANUT collected in 2020.

TABLE 7: Prevalence estimates for ethnicity and BMI in Mexico

Table 7a. Ethnicity	INEGI 2020, age 3+[a]	IFPS Youth 2020, ages 10-17 (n=1,823)
	%	Weighted %
Indigenous	19.4	19.5
Not indigenous/not stated	80.6	80.5

[a] Instituto Nacional de Estadística y Geografía (INEGI): Censo de Polbacíon y Vivienda 2020: Tabulados del Custionairio Ampliado. Tabulado 2: Estimadores de la poblacíon de 3 anos y más y su distribución porcentual según condición de autoadscripción indígena por entidad federative, sexo y condición de habla indígena. Fecha de elaboración: 16/03/2021. Accessed August 17, 2021. Available at: https://www.inegi.org.mx/programas/ccpv/2020/#Tabulados

Table 7b. BMI	ENSANUT 2020, ages 12-19, directly measured [b]	IFPS Youth 2020, ages 10-17, self-reported
	%	Weighted %
Overweight or obese	43.8	43.5 of those with valid BMI (n=1,358)
	--	32.4 of the entire sample, including those with missing/not stated BMI (n=1,823)

[b] Shamah-Levy T, et al. Encuesta Nacional de Salud y Nutrición 2020 sobre Covid-19: Resultados Nacionales. Cuernavaca, México: Instituto Nacional de Salud Pública, 2021. Available at: https://ensanut.insp.mx/encuestas/ensanutcontinua2020/doctos/informes/ensanutCovid19ResultadosNacionales.pdf.

United Kingdom

Table 8 compares weighted estimates of ethnicity and BMI from the 2020 IFPS Youth Survey with British estimates from the UK Census, Scotland Census and Northern Ireland Census each collected in 2011, as well as the Health Survey for England in 2018/2019.

TABLE 8: Prevalence estimates for ethnicity and BMI in the United Kingdom

Table 8a. Ethnicity	UK Census 2011, ages 10-17 [a,b,c]	IFPS Youth 2020, ages 10-17 (n=1,521)
	%	Weighted %
White (including Gypsy/Traveller/Irish Traveller)	83.3	82.1
Mixed/Multiple Ethnic Groups	3.7	5.8
Asian/Asian British	8.0	7.7
Black/African/Caribbean/Black British	4.0	2.6
Other Ethnic Group	1.0	0.9
Not stated	--	0.9

[a] Office for National Statistics. Census 2011: CT0702 – Age (SYOA) by sex by ethnic group. Accessed April 29, 2019. Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/ethnicity/adhocs/007585ct07022011censusagesyoabysexbyethnicgroupnattoregion

[b] National Records of Scotland. Scotland's Census 2011: DC2101SC – Ethnic group by sex by age. Accessed April 29, 2019. Available from: https://www.scotlandscensus.gov.uk/ods-web/standard-outputs.html

[c] Northern Ireland Statistics and Research Agency. Census 2011: DC2101NI – Ethnic group by age by sex. Accessed April 29, 2019. Available from: https://www.ninis2.nisra.gov.uk/public/Theme.aspx?themeNumber=136&themeName=Census+2011

Table 8b. BMI	Health Survey for England 2018/19, ages 11-12, directly measured [d]	Health Survey for England 2018/19, ages 13-15, directly measured [d]	IFPS Youth 2020, ages 10-17, self-reported
	%	%	Weighted %
Overweight or obese	36.9	36.4	33.5 of those with valid BMI (n=860)
	--	--	19.0 of the entire sample, including those with missing/ not stated BMI (n=1,521)

[d] NHS Digital. Health Survey for England, 2019: Adult and child overweight and obesity. Table 17: Children's overweight and obesity prevalence, by age and sex. Available at: https://digital.nhs.uk/data-and-information/publications/statistical/health-survey-for-england/2019/health-survey-for-england-2019-data-tables. Source data obtained from the Health Survey for England 2018 and 2019.

United States

Table 9 compares weighted estimates of ethnicity and BMI from the 2020 IFPS Youth Survey with American estimates from the United States Census conducted in 2019 and the Youth Risk Behavior Survey collected in 2019.

TABLE 9: Prevalence estimates for ethnicity and BMI in the United States

Table 9a. Ethnicity	US Census 2019, ages 10-17 [a]	IFPS Youth 2020, ages 10-17 (n=1,582)
	%	Weighted %
White only (and not Hispanic)	51.0	51.9
Black or African American only (and not Hispanic)	13.7	10.1
Other race only (and not Hispanic)	6.2	8.9
Two or more races, and/or Hispanic	29.1	28.8
Not stated	--	0.3

[a] United States Census Bureau, Population Division. Annual State Resident Population Estimates for 6 Race Groups (5 Race Alone Groups and Two or More Races) by Age, Sex, and Hispanic Origin: April 1, 2010 to July 1, 2019. June 2020. Accessed May 3, 2021. Available from https://www.census.gov/data/tables/time-series/demo/popest/2010s-state-detail.html

Table 9b. BMI	YRBS 2019, grades 9-12 (ages 14-18) self-reported [b]	IFPS Youth 2020, ages 10-17, self-reported
	%	Weighted %
Overweight or obese	31.6 [c]	40.0 of those with valid BMI (n=1,266)
	--	32.0 of the entire sample, including those with missing/ not stated BMI (n=1,582)

[b] Centers for Disease Control and Prevention (CDC). 1991-2019 High School Youth Risk Behavior Survey Data. Accessed on January 8, 2021. Available at http://yrbs-explorer.services.cdc.gov/.

[c] Estimates were weighted to represent the all students in grades 9-12 in each jurisdiction.

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