

Supplementary Materials to accompany Zhao et al.

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Section 1: Calculation of Study Sample Size

It was estimated that 103 participants were needed to obtain sufficient power to estimate the proportion of young adults that had full adherence to the Canada's Food Guide within a margin of error of 5%, using a 95% confidence interval. A 2018 study suggested that the proportion of full adherence to the Canada's Food Guide among youths was 7.2% [7]. The proportion of full adherence was calculated by taking the weighted average of adherence across various ethnic groups from that study. No adjustments were conducted for multiplicity.

$$\text{Sample size} = \frac{(z_{\alpha/2})^2 p (1 - p)}{d^2} = \frac{(1.96)^2 (0.072) (1 - 0.072)}{(0.05)^2} = 103$$

P= proportion of youths that adherence to Canada's Food Guide

*d*²=margin of error

*Z*_{α/2}= Z value for 95% Confidence interval

Section 2: Survey items

PART 1: Demographic Characteristics

1. Do you give consent for us to use your personal information for our study?
 - a. Yes
 - b. No
2. Please indicate your age:
 - a. 18
 - b. 19
 - c. 20
 - d. 21
 - e. 22
 - f. 23
 - g. 24
3. What is your height in cm?
Enter your height in cm: _____
4. What is your weight in kg?
Enter your weight in kg: _____
5. Check any diagnosed illnesses you have:
Select all that applies.
 - a. Asthma
 - b. Type II diabetes
 - c. Cardiovascular disease
 - d. Menstrual abnormalities
 - e. Sleep apnea
 - f. Fatty liver disease
 - g. Acne
 - h. Inflammatory bowel disease (IBD)
 - i. None
 - j. Other: _____

Part 2: Dietary Adherence Assessment

1. Thinking back to your last meal, what percent of your meal was comprised of fruits and vegetables?
Select one best answer.
 - a. 0-20%
 - b. 20-40%
 - c. 40-60%
 - d. 60-80%
 - e. 80-100%
2. Thinking back to your last meal, what percent of your meal was comprised of proteins?
Select one best answer.
 - a. 0-20%
 - b. 20-40%
 - c. 40-60%

- d. 60-80%
 - e. 80-100%
3. Thinking back to your last meal, what percent of your meal was comprised of whole grains? *Select one best answer.*
- a. 0-20%
 - b. 20-40%
 - c. 40-60%
 - d. 60-80%
 - e. 80-100%
4. What is your most frequently consumed beverage?
Select one best answer.
- a. Coffee
 - b. Juice
 - c. Water
 - d. Protein shake
 - e. Other: _____
5. How often do you consume home-cooked meals? E.g. not fast food, restaurant bought, pre-made frozen meals.
Select one best answer.
- a. 0-1 day per week
 - b. 2-3 days per week
 - c. 4-5 days per week
 - d. 6-7 days per week (all your meals are home-cooked)
6. How often do you eat your meal with someone? E.g. the only time when you eat with others is breakfast with your family every Sunday morning would mean you fall under the category 0-1 times per week.
Select one best answer.
- a. 0-1 times per week
 - b. 2-3 times per week
 - c. 4-5 times per week
 - d. 5-7 times per week
 - e. 8+ times per week
7. Do you notice when you are hungry or full?
Select one best answer.
- a. Never
 - b. Sometimes
 - c. Always
8. How often do you prepare or plan what you are going to eat before a meal? E.g. Monday: breakfast shall be peanut butter oatmeal, lunch is turkey sandwich, dinner is squash soup.
Select one best answer.
- a. Never (All meals are consumed without prior preparation)
 - b. Occasionally (1-2 meals are planned or prepared)
 - c. Sometimes (2-3 meals are planned or prepared)
 - d. Often (5-6 meals are planned or prepared)
 - e. Always (7+ meals are planned or prepared)

Part 3: CFG Knowledge Assessment (8 questions each worth 1 point)

1. Instead of servings, the new CFG now measures dietary intake with proportions on a plate. What proportion of the new food guide is made up of fruits and vegetables?
Select one best answer. Worth 1 point.
 - a. 0-20%
 - b. 20-40%
 - c. 40-60%
 - d. 60-80%
 - e. 80-100%
2. What proportion of the new food guide is made up of protein?
Select one best answer. Worth 1 point.
 - a. 0-20%
 - b. 20-40%
 - c. 40-60%
 - d. 60-80%
 - e. 80-100%
3. What proportion of the new food guide is made up of whole grains?
Select one best answer. Worth 1 point.
 - a. 0-20%
 - b. 20-40%
 - c. 40-60%
 - d. 60-80%
 - e. 80-100%
4. What is the 2019 Canada's Food Guide's recommended drink of choice?
Select one best answer. Worth 1 point.
 - a. Fruit Juice high in vitamin C and fibre
 - b. Tea
 - c. Coffee
 - d. Water
5. The new food guide recommends us to:
Select one best answer. Worth 1 point.
 - a. Eat more dairy
 - b. Consume less fruits
 - c. Eat meals with others
 - d. Practice fasting
6. How does the new food guide encourage us to practice mindful eating?
Select one best answer. Worth 1 point.
 - a. By chewing slowly
 - b. By thinking about what you are eating while you chew
 - c. By eating locally grown foods
 - d. By cooking dishes with organic produce
7. Which one of the following is not a healthy eating habit according to the new 2019 food guide?
Select one best answer. Worth 1 point.
 - a. Cooking more often

- b. Enjoying the food
 - c. Eating foods that are in season
 - d. Eating meals with others
8. The new food guide is favourable towards foods that are:
Select one best answer. Worth 1 point.
- a. Organically grown
 - b. Grown locally
 - c. Less processed
 - d. In season

Part 4: Influence of CFG and Feedback

1. On a scale of 1 to 7, how impactful was the new 2019 Canada Food Guide to your eating habits?
Mark only one oval.

1	2	3	4	5	6	7	
not impactful at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	extremely impactful

2. How might the Canadian government better improve diet information outreach?
Select all that applies.
- a. By information publication through social media (Facebook, Twitter, Instagram, etc.)
 - b. Making informative dietary videos or sharing such videos.
 - c. Nothing; it is effective already
 - d. Other: _____
3. What are other ways you think the Canadian Food Guide can be improved?
Select all that applies.
- a. Adjust to body types (e.g. body builder vs. desk job employee)
 - b. Include protein substitution options for red meats and dairy
 - c. Add a section on how to read food labels
 - d. Other: _____

Section 3: Detailed Methods

Table 1. Demographic and clinical characteristics of the participants by sex (n=121)

Variable	Women (n=85)	Men (n=36)	Total (n=121)
Age (years) – mean (SD)	20.05 (1.45)	20.04 (1.38)	20.16 (1.44)
Weight (kg) – mean (SD)	58.48 (10.17)	72.69 (12.88)	62.71 (12.78)
Height (m) – mean (SD)	1.64 (0.07)	1.76 (7.34)	1.68 (0.09)
BMI (kg/m²) – mean (SD)	21.75 (3.43)	23.32(3.48)	22.22 (3.50)
BMI categories (kg/m²) – no. (%)			
<18.5	15 (17.65)	1 (2.78)	16 (13.22)
18.5–24.9	58 (68.24)	26 (72.22)	84 (69.42)
25–29.9	10 (11.76)	6 (16.67)	16 (13.22)
30–34.9	2 (2.35)	3 (8.33)	5 (4.13)
≥35	-	-	-

Table 2. Univariable and Multivariable linear Regression Between Knowledge of 2019 CFG and Adherence of 2019 CFG (n=119)**

	Per 1 point increase in knowledge	p-value
Crude	0.052 (-0.065, 0.19)	0.38
Adjusted*	0.059 (-0.06, 0.17)	0.33

* Adjusted for presence of chronic illness (binary), and BMI (continuous)

** Two participants did not answer one of the eight adherence questions and thus were excluded from this analysis

Table 3. Adherence assessment for 2019 CFG

Adherence Assessment	Answers & points assignment
Proportion of vegetables and fruits in most recent meal	0-20% (did not meet requirement) 20-40% (approaching requirement) 40-60% (met requirement) 60-80% (approaching requirement) 80-100% (did not meet requirement)
Proportion of protein foods in most recent meal	0-20% (approaching requirement) 20-40% (met requirement) 40-60% (approaching requirement) 60-80% (did not meet requirement) 80-100% (did not meet requirement)
Proportion of whole grains in most recent meal	0-20% (approaching requirement) 20-40% (met requirement) 40-60% (approaching requirement) 60-80% (did not meet requirement) 80-100% (did not meet requirement)
Most frequently consumed beverage	Water (met requirement) All other answers (did not meet requirement)
Days consumed home cooked meals per week	0-1 days/week (did not meet requirement) 2-3 days/week (approaching requirement) 4-5 days/week (approaching requirement) 6-7 days/week (met requirement)
Number of meals eaten with others per week	0-1 meals/week (did not meet requirement) 2-3 meals /week (approaching requirement) 4-5 meals /week (approaching requirement) 5-7 meals /week (approaching requirement) >7 meals /week (met requirement)
Awareness of satiety after a meal	Always (met requirement) Sometimes (approaching requirement) Never (did not meet requirement)
Number of meals prepared per week	0 meals/week (did not meet requirement) 1-2 meals/week (approaching requirement) 3-4 meals/week (approaching requirement) 5-6 meals/ week (approaching requirement) >6 meals/week (met requirement)

1 point for met recommendations, 0.5 point for approached recommendations, and 0 points if didn't meet recommendations. Bolded answers denote the CFG recommendation.

Knowledge of CFG: Four questions assessed knowledge about healthy food choices, and four questions assessed knowledge about healthy eating habits. Each question had one correct answer. Each correct answer was worth one point, with a total of 8 points.

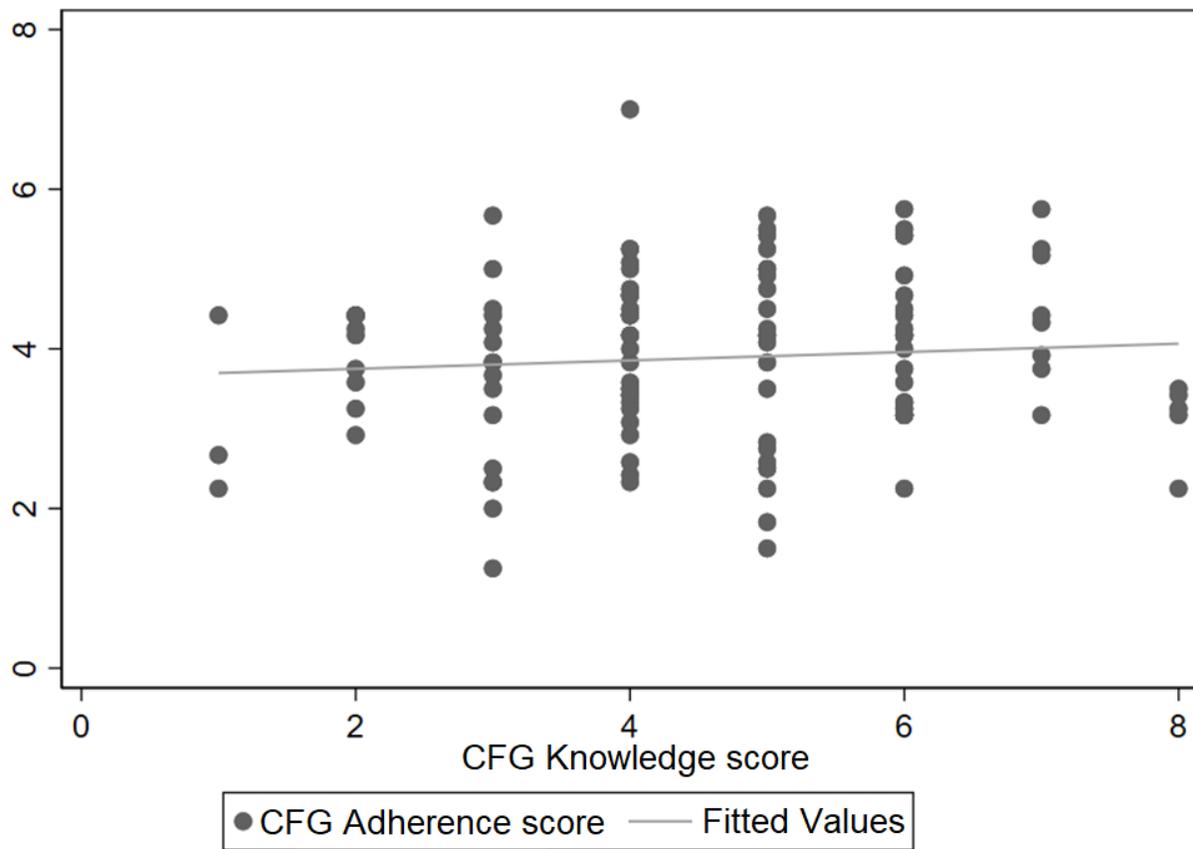
Adherence to CFG: Four questions assessed adherence to healthy food choices by asking participants to estimate the closest quintile of proportional consumption (e.g., using response options including 20-40%) of food groups (vegetables and fruits, protein, whole grains) and their most frequently consumed beverage. Another four questions assessed adherence to healthy eating habits. Responses were coded by whether participants met recommendations (1 point), defined as the respective plate proportion or highest frequency of eating habits described by the CFG. Responses were treated as did not meet requirements (0 point) if they were 1) more than one quintile from the recommended proportion on the food plate or 2) an eating habit that was only met 0-1 times per week. The remaining responses were coded as approached recommendations (0.5 point). Refer to Supplementary Materials for details in scoring. The resulting total adherence score was up to 8 points.

CFG Influence: The third section asked how influential the CFG is in shaping the respondent's food choices using a Likert scale ranging from "1: not influential at all" to "7: extremely influential".

CFG Suggestions: The final section asked for participants' opinions on how the CFG messages may be better distributed to people in the young adult age group, and what other information they would like the CFG to include. Participants selected as many responses as applicable from a list and could enter their own suggestions.

Section 4: Additional Results

Figure 1: Scatter Plot between Adherence and Knowledge of the 2019 Canadian Food Guide (n=121)



Pearson coefficient is 0.0815, $p=0.38$

Figure 2: Reported Influence of the CFG among 121 Participants on Likert scale 1 (not influential) to 7 (very influential)

