

Awareness and Knowledge of Recommendations from Canada's Food Guide

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ABSTRACT

Purpose: To examine use and content knowledge of Canada's Food Guide recommendations.

Methods: A total of 1048 intercept exit surveys were conducted with adults who had purchased food that day at 2 hospital cafeterias in Ottawa, Ontario.

Results: Most respondents (85.9%) reported looking at Canada's Food Guide over their lifetime; however, less than half reported looking at the food guide in the past year. Milk and Alternatives were the most commonly recalled food group (80.1%) and Grain Products were least commonly recalled (66.0%). Of the entire sample, 42.8% correctly recalled all 4 food groups. Overall, 0.8% correctly recalled the correct number of servings for all 4 food groups. Females, younger respondents, white respondents, respondents with higher annual income, and respondents who had reported looking at Canada's Food Guide recalled more food groups ($P < 0.05$ for all).

Conclusions: Despite high levels of awareness, the study found relatively low levels of reported use and very low levels of knowledge of Canada's Food Guide, particularly among population subgroups that face health disparities. Improving awareness, knowledge, and use of Canada's Food Guide may contribute to improving the nutrition profile of Canadians.

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RÉSUMÉ

Objectif. Explorer le niveau d'utilisation et de connaissance des recommandations du *Guide alimentaire canadien*.

Méthodes. Au total, 1048 sondages par interception ont été réalisés à la sortie de la cafétéria de 2 hôpitaux d'Ottawa, en Ontario, auprès d'adultes qui y avaient acheté des aliments la journée même.

Résultats. La plupart des répondants (85,9 %) ont affirmé avoir déjà consulté le *Guide alimentaire canadien*, mais moins de la moitié l'avait fait au cours de la dernière année. Le groupe alimentaire Lait et substituts était celui dont les gens se souvenaient le plus souvent (80,1 %), tandis que les Produits céréaliers représentaient le groupe dont les gens se souvenaient le moins (66,0 %). Parmi tous les répondants, 42,8 % ont été en mesure de nommer correctement les 4 groupes alimentaires. Dans l'ensemble, 0,8 % des participants se sont souvenus du nombre adéquat de portions associé à chacun des 4 groupes alimentaires. Par ailleurs, les femmes, les plus jeunes répondants, les répondants de race blanche, ceux ayant un revenu annuel plus élevé et les répondants qui indiquaient avoir déjà consulté le *Guide alimentaire canadien* se souvenaient d'un plus grand nombre de groupes alimentaires ($p < 0,05$ pour l'ensemble des répondants).

Conclusions. Malgré un niveau de sensibilisation élevé, l'étude a révélé un taux relativement faible d'utilisation rapportée et un taux très faible de connaissance du *Guide alimentaire canadien*, particulièrement chez les sous-groupes de la population confrontés à des disparités en santé. Promouvoir la sensibilisation et les connaissances associées au *Guide alimentaire canadien* de même que son utilisation pourrait contribuer à améliorer le profil nutritionnel de l'alimentation des Canadiennes et des Canadiens.

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INTRODUCTION

Most countries provide food-based dietary guidelines to help consumers select a healthy diet. Given the prominence of national dietary guidelines, there is surprisingly little evidence of the efficacy of these tools [1, 2]. In Canada, the official food-based dietary guidelines are currently included in Canada's Food Guide (CFG), developed to provide guidance on the adequate intakes of micro- and macronutrients to reduce the risk of nutrition-related chronic diseases [3].

The current version of CFG, "Eating Well with Canada's Food Guide", was released in 2007 and coincided with updated dietary reference intakes for micronutrients [3]. Canada's Food Guide categorizes food items into 4 major food groups: Vegetables and Fruit, Grain Products, Milk and Alternatives, and Meat and Alternatives, and recommends a number or range of servings for each group that are age and

sex specific. In addition, the updated CFG recommends the types of foods that should be consumed within each of the food groups, provides suggestions for consumption of "other" foods and beverages, and offers recommendations for the use of oils and fats. These resources are available in paper format and online with supplemental materials [4].

Evidence suggests that Canadians do not meet the recommendations in CFG for most food groups, in particular Vegetables and Fruit, and Milk and Alternatives [5, 6]. However, there is little published literature examining Canadians' understanding and use of CFG. Research to date suggests that government sources of nutrition information have a high level of credibility among consumers; however, with the exception of the Nutrition Facts table, relatively few consumers report using these resources [7]. In Canada, there is a large evidence gap surrounding knowledge and understanding

of CFG among the general population as well as vulnerable population subgroups. The purpose of the current study was to examine use and content knowledge of CFG recommendations including identification of the 4 food groups and the number of recommended daily servings for each food group.

METHODS

This study was conducted as part of a larger study conducted over a 5-week period in August and September 2013 to assess the effectiveness of a healthy eating campaign implemented in Ottawa Hospitals. Exit surveys were conducted with adult cafeteria patrons in 2 hospital cafeterias in Ottawa, Ontario, that serve the general public, hospital staff, and some patients. Participants were eligible if they were over 18 years of age and had purchased food in the cafeteria on the day of the survey. Participants were recruited as they exited 1 of 2 hospital cafeterias after ordering a food or drink item using intercept-sampling techniques to minimize self-selection bias; they completed a 10-minute survey that included information on nutrition behaviours, nutrition knowledge, and socio-demographic information. Response rates were 13% at one site and 20% at the second site, using the American Association for Public Opinion Research Response Rate #4 [8]. A description of the study methodology has been published elsewhere [9], and the study received ethics clearance from University of Waterloo Office of Research Ethics and the Ottawa Health Science Network Research Ethics Board.

Study measures

Participants were first asked when they had last looked at CFG, with response options: “in the last month”, “in the last year”, “in the last 5 years”, “more than 5 years ago”, or “never”. An unprompted recall task assessed knowledge of the food groups in CFG. Participants were asked, “Canada’s Food Guide includes different food groups. Please name as many food groups as you can,” with an open ended response. After each response, interviewers were instructed to probe participants with “Any others?”

Next, participants were asked “How many servings of [Vegetables and Fruit, Grain Products, Milk and Alternatives, and Meat and Alternatives] does Canada’s Food Guide recommend each day?” Participants could provide one number or a range. Responses were considered correct if the response was within the correct range for adults over 18 years of age and were not sex or age specific, to estimate general knowledge of serving recommendations. Additional information was collected on the participant’s sex and age and if they were staff, patients, or visitors to the hospital cafeteria in addition to other socio-demographic factors including the annual household income, highest level of education attained, ethnicity, and self-reported height and weight to calculate body mass index (BMI).

RESULTS

The final sample size was 1048. For sample characteristics see Table 1. Overall, 85.8% of respondents reported “ever” looking

Table 1. Sample characteristics.

Characteristic	Results (%), n = 1048
Sex	
Female	617 (58.9)
Age (y)^a	
18–34	318 (30.3)
35–54	412 (39.4)
>55	318 (30.3)
Annual household income	
<\$40 000	190 (18.1)
\$40 000–\$80 000	285 (27.2)
>\$80 000	496 (47.3)
Not reported	77 (7.4)
Ethnicity	
White	847 (80.8)
Other	201 (19.2)
BMI	
Underweight (<18.5)	17 (1.6)
Normal weight (18.5–24.9)	420 (40.1)
Overweight (25.0–29.9)	355 (33.9)
Obese (>30)	210 (20.0)
Not reported	46 (4.4)
Consumer type	
Staff	571 (54.5)
Visitor	333 (31.8)
Patient	141 (13.5)
Not reported	3 (0.2)

^aMean (SD), 45.4 years (15.5).

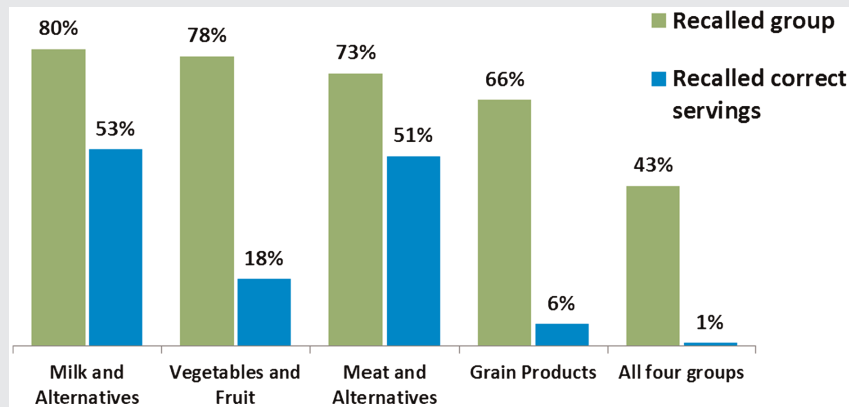
at CFG; however, half of respondents (50.8%) reported looking at CFG in the past year, including only 14.2% who reported looking at CFG in the past month.

Figure 1 shows the proportion of participants that correctly recalled each of the food groups and correctly recalled the recommended number of daily servings for each food group. The most commonly recalled food group was the Milk and Alternatives group (80.1%), whereas Grain Products was the least likely to be recalled (66.0%). Less than half of participants (42.8%) correctly recalled all 4 food groups, and 6.8% could not correctly name a single food group.

Recall of the recommended number of servings was highest for Milk and Alternatives (52.9%) and lowest for Grain Products (5.9%). Only 8 participants (0.8%) could recall the correct number of servings for all 4 food groups.

A linear regression model was fitted to examine differences in CFG knowledge by self-reported CFG use, age, sex, income, ethnicity, and BMI. Those who had never used CFG named fewer food groups than those who had viewed it more than 5 years ago ($P < 0.001$), in the last 5 years ($P < 0.001$), in the last year ($P < 0.001$) and in the last

Figure 1. Respondents who were able to correctly recall each of the food groups^a and correctly recall how many servings of each food group should be consumed daily^b (n = 1,048).



^aResponses for Vegetables and Fruit were defined as correct if the participant described “fruit” and “vegetables” either together or separately. Correct responses for Grain Products were “grains”, “whole grains”, or “cereals”. For the Milk and Alternatives group, correct responses included “milk” or “dairy” only. For Meat and Alternatives, correct responses were awarded for “meat” only.

^bCorrect responses for servings of each food group: Vegetables and Fruit, 7–10 servings; Grain Products, 6–8 servings; Milk and Alternatives, 2–3 servings; and Meat and Alternatives, 2–3 servings.

month ($P < 0.001$). Males named fewer groups than females ($P = 0.013$). Older age groups named fewer food groups than younger age groups ($P < 0.002$ for all contrasts). Those not of white ethnicity recalled fewer groups than those of white ethnicity ($P < 0.001$). Those with the lowest annual household income (<\$40 000) named fewer food groups than those in the highest income groups ($P < 0.002$ for all contrasts). Additionally, those who did not report an income named fewer food groups than those in the middle and highest income category ($P = 0.009$ and $P = 0.006$, respectively). BMI was not significant in the model.

DISCUSSION

The findings indicate relatively low levels of use and very low levels of knowledge of the official dietary guidelines in Canada. The study results are fairly consistent with the 1 published study in Canada that has examined Canadian knowledge of the food groups; it found that 56% and 41% of the sample were able to successfully name all 4 food groups in 1997 and 2001, respectively [10]. To the authors' knowledge, no published literature has examined knowledge of recommendations for food groups. Consistent with previous research on other sources of nutrition information, such as food labels, use and knowledge of nutrition information was lower among minority and lower income respondents [11, 12]. Although a version of CFG has been tailored to First Nations, Inuit, and Métis populations and is available in 10 languages in addition to English and French, this study suggests that CFG is not well understood by participants who were not of white ethnicity.

The study sample is a limitation, as approximately half of the sample consisted of hospital staff who may have greater

levels of health and nutrition education; thus, knowledge of CFG may actually be lower among the general population.

RELEVANCE TO PRACTICE

Respondents in the current study lacked the most basic understanding of the recommendations outlined in CFG. In addition, CFG was not equitably accessed and understood by all participants, particularly among populations that are known to face health disparities. Although health knowledge is only 1 of many factors that influence dietary intake, it may be unrealistic to expect individuals to meet national guidelines if they are unaware of their content. Dietitians should ensure that clients understand the basic elements of CFG if they wish to use it as an effective tool in practice.

The findings highlight several priorities for action to increase consumer engagement and use of CFG. First, the core messages in CFG that are identified as a health priority such as types of food to consume should be presented to consumers in a way that is clear, intuitive, and engaging. For example, countries such as Brazil are considering providing more general messages with less complexity to increase the understanding and use of core principles for healthy eating [13]. Second, CFG requires a sustained public education campaign, beyond what is currently in place, to promote awareness, knowledge, and understanding of healthy eating behaviours. Third, promotion of CFG should be coordinated and integrated with other prominent sources of nutrition information. For example, integrating CFG information with the government-mandated Nutrition Facts table on pre-packaged foods may increase CFG's reach. Further evaluation of the effectiveness of CFG is warranted, in particular with a more representative sample of the Canadian population.

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Conflicts of interest: The authors declare that they have no competing interests.

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