

Knowledge of Sugars Consumption and the WHO Sugars Guideline among Canadian Dietitians and Other Health Professionals

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ABSTRACT

Purpose: The objective was to assess knowledge related to sugars consumption and World Health Organization (WHO) sugars guideline among Canadian dietitians and other health professionals.

Methods: A multiple-choice style survey was administered at Dietitians of Canada and Canadian Diabetes Association conferences in 2014.

Results: The study showed that only 12% of the surveyed respondents ($n = 335$) in 2014 were able to correctly identify the amount of added sugars consumed by Canadians, whereas two-thirds overestimated this amount. About 10% of the respondents knew that the 10% guideline by WHO for free sugars was based on evidence related to dental caries. Registered dietitians had relatively better knowledge of Canadian sugars consumption ($P = 0.003$), but not of the WHO free sugars guideline compared with other surveyed health professionals such as medical doctors or nurses.

Conclusions: Knowledge gaps existed among surveyed Canadian health professionals on topics related to sugars consumption and the WHO sugars guideline. Future research should focus on tools to support better communication of sugars guideline and consistent use of sugars terminology.

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RÉSUMÉ

Objectif. L'objectif était d'évaluer les connaissances liées à la consommation de sucres et à la directive sur l'apport en sucres de l'Organisation mondiale de la Santé (OMS) des diététistes et d'autres professionnels de la santé canadiens.

Méthodes. Les participants aux congrès des Diététistes du Canada et de l'Association canadienne du diabète de 2014 ont répondu à un sondage à choix multiples.

Résultats. L'étude a montré que seulement 12 % des répondants ($n = 335$) en 2014 étaient en mesure d'identifier correctement la quantité de sucres ajoutés consommés par la population canadienne, et que les deux tiers ont surestimé cette quantité. Environ 10 % des répondants savaient que la directive de 10 % de l'OMS pour les sucres libres était fondée sur des données probantes concernant les caries dentaires. Les diététistes avaient une connaissance relativement meilleure de la consommation de sucres de la population canadienne ($P = 0,003$) que les autres professionnels de la santé sondés comme les médecins ou les infirmières, mais pas de la directive sur les sucres libres de l'OMS.

Conclusions. Il y avait des lacunes sur le plan des connaissances chez les professionnels de la santé canadiens sondés sur les sujets liés à la consommation de sucres et à la directive sur l'apport en sucres de l'OMS. Les recherches futures devraient se concentrer sur des outils pour favoriser une meilleure communication des directives sur l'apport en sucres et l'utilisation uniforme de la terminologie relative aux sucres.

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INTRODUCTION

The World Health Organization (WHO) recommends limiting free sugars intake to 10% of energy, based on observational evidence related only to dental caries, not obesity or other chronic disease [1]. However, the scope of the quantitative guideline has not been clearly communicated by the WHO [2]. Media sources often report that added sugars including sugars-sweetened beverages is the leading public health concern causing obesity-related disease [3–5]. In contrast, analysis of Statistics Canada availability data indicates that added sugars intake has declined over the past few decades while obesity rates continue to increase [6, 7]. Analysis of the 2004 Canadian Community Health Survey (CCHS) estimated that average consumption of added sugars was approximately

11% of energy intake, about one-third less than added sugars intake in the United States during the same time period [6, 8]. Health professionals, especially dietitians, are relied upon to communicate accurate information on sugars to the general public, yet they may also be unknowingly influenced by misconceptions related to sugars from various information outlets. The objective of this study was to assess health professionals' knowledge of sugars consumption in Canada and the scientific basis for the WHO sugars guideline.

METHODS

Surveys were administered at the Canadian Sugar Institute exhibit booth at the Dietitians of Canada (DC) National Conference and Canadian Diabetes Association (CDA)

Table 1. Distribution of occupations among survey respondents.

Respondents	%
Dietitians of Canada Conference (n = 144)	
Clinical dietitians	42
Public health and community dietitians	13
Industry and media dietitians	11
Dietetic/nutrition students	14
Other ^a	15
Did not specify	5
Canadian Diabetes Association Professional Conference (n = 191)	
Registered dietitians	29
Registered nurses/nurse practitioners	41
Medical doctors	4
Pharmacists	3
Other ^b	15
Did not specify	8
Total dietitians (including students) responding to surveys (n = 150)	45

^aIncludes academics, government, educators, health promotion, food service, family care, management, and others.

^bIncludes industry, diabetes educators, students, research fellows, and others.

Professional Conferences in 2014. Delegates provided oral consent prior to completing the anonymous survey. Small gifts such as spatulas or pens were provided to those who completed the survey. Respondents were mostly dietitians at the DC conference, whereas respondents at the CDA Conference represented a more diverse area of practice, including dietitians, medical doctors, nurses, and diabetes educators (Table 1). The Research Ethics Board (REB) at Ryerson University determined that this study does not require REB approval under Article 2.4 of the TCPS2, based on the anonymous nature where no identifiable information was collected in the survey [9]. The required sample size to represent approximately 10 000 Canadian dietitians was 370 [10]. Frequency distributions of answers were reported. The difference between dietitians and other participants were tested using Pearson χ^2 statistics. All analyses were performed using SPSS (Version 25, Armonk, NY: IBM Corp).

RESULTS

About 12% of participants in 2014 (n = 335) correctly answered that added sugars consumption in Canada is estimated at approximately 11% of energy (Table 2). A higher percentage among the subgroup of dietitians (n = 150) were able to correctly identify estimated added sugars consumption in Canada (17% for dietitians compared with 7% of other professionals, $P = 0.003$). However, a substantial majority provided overestimates, with two-thirds of respondents selecting added sugars levels at approximately twice the estimated

amount (when combining the answers for 21% and 23%). Very few respondents (9%) knew that the added sugars consumption in Canada in 2004 was approximately one-third less than consumption in the United States during the same time period, with no difference between the subgroups of dietitians and other health professionals ($P = 0.275$) (Table 2).

Approximately 10% of all respondents in 2014 (13% of dietitians and 9% of other health professionals) correctly answered that the WHO 10% guideline for free sugars intake was based on evidence related to dental caries alone (Table 2). Almost three-quarters of respondents incorrectly responded that the guideline was based on evidence related to all the listed options: obesity, metabolic syndrome, diabetes, and dental caries. No difference was found between the subgroups of dietitians and other health professionals ($P = 0.312$).

DISCUSSION

This pilot study is the first to report that there are knowledge gaps on sugars consumption and the WHO sugars guideline among dietitians and other health professionals in Canada. Registered dietitians had relatively better knowledge on Canadian sugars consumption than other surveyed health professionals, but not on WHO sugars guidelines. The observed over-estimation of added sugars consumption in Canada among surveyed health professionals may reflect inconsistent use of sugars terminology. In Canada's Food and Drug Regulations (Division 18 B.18.001[S]), the plural form "sugars" includes all monosaccharides and disaccharides and "sugar" exclusively refers to "sucrose" with a purity of not less than 99.8% [11]. However, Statistics Canada's sugars consumption report stated that "sugar" intake averaged 21.4% of total energy intake, a level that represents total sugars. This use is also inconsistent with the Food and Drug Regulations [12]. Misusing "sugar" to represent total sugars is also widespread in media articles when reporting Canadian sugars consumption [12–14].

The majority of dietitians and other health professionals identified the 10% WHO quantitative guideline for free sugars being associated with obesity and other chronic diseases, rather than dental caries. While WHO provides general guidance to reduce free sugars as a contributor to energy intake, the specific value of 10% of energy was established on observational evidence related to dental caries only, and the WHO found insufficient evidence to set a quantitative limit based on free sugars' effect on body weight [1, 15]. However, the scientific basis for the 10% and the conditional 5% guidelines has not been clearly communicated by WHO or corresponding media articles [2, 16]. For example, a national news outlet reported that "Dr. Francesco Branca, director of WHO's Department of Nutrition for Health and Development, said there's solid evidence that keeping free sugars to less than 10 per cent of total energy intake reduces the risk of being overweight, obesity and tooth decay" [16], and failed to accurately reflect the scope of the evidence in the guideline. These

Table 2. Percentage frequency distributions of the responses to the multiple choices in select questions among all participants as well as the subgroups of dietitians and other health professionals.

	All, % (n = 335)	Dietitians, % (n = 150)	Others, % (n = 185)
Question 1: Please fill in the blank: The average consumption of added sugars (i.e. sucrose, maple sugar, honey, and corn sweeteners) in Canada is estimated to be approximately _____ of total daily energy intake.			
A) 11% (Correct answer)	12	17*	7
B) 15%	24	27	22
C) 21%	38	37	39
D) 23%	26	18	32
Question 2: Please fill in the blank: Added sugars consumption in Canada is approximately _____ than U.S. consumption.			
A) 10% more	7	6	8
B) The same as	36	37	34
C) 15% less	48	50	46
D) 30% less (Correct answer)	9	7	11
Question 3: Please fill in the blank: The World Health Organization 10% guideline for “free sugars” intake is based on evidence related to ____.			
A) Dental caries (Correct answer)	10	13	9
B) Obesity	10	11	9
C) Diabetes	7	8	4
D) Metabolic syndrome	2	1	1
E) All of the above	71	67	75

* $P < 0.05$ between dietitians and others.

vague communications may have contributed to the misunderstanding and potential misuse of the sugars guideline. Nevertheless, there are some limitations. Firstly, the survey was conducted in 2014 before the publication of the finalized WHO sugars guideline in 2015. It is unknown whether health professionals' understanding was improved during the past 5 years with more communications of the guideline. In addition, the small cohort of participants were recruited from the 2 dietetic and diabetes professional conferences, which has limited the generalizability of the findings.

RELEVANCE TO PRACTICE

Dietitians play an important role in communicating evidence-based nutrition information to the general public. This activity is now particularly important considering that sugars-related information is frequently miscommunicated from various sources. The present study has revealed the existence of specific knowledge gaps among health professionals related to sugars consumption and guidelines. It is unknown to what extent health professionals, including dietitians, may unintentionally communicate some of these misconceptions and whether similar patterns exist for other macronutrients or micronutrients of public health interest (e.g., saturated fat, sodium, etc.). Better communication of sugars guidelines and tools that assist in the accurate use and understanding of sugars terminology is critical.

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Conflicts of interest: Wang, DiAngelo, and Marsden are employees of the Canadian Sugar Institute Nutrition Information Service, a nonprofit association that supports evidence-based communication of sugars- and carbohydrate-related information. Pasut was an employee of the Canadian Sugar Institute Nutrition Information Service during data analysis and manuscript preparation. Kitts and Bellissimo are members of the Canadian Sugar Institute's Scientific Advisory Council.

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