

# Knowledge, Attitudes and Perceptions Of Carbohydrates among Nutrition-major and Nutrition-elective Undergraduates in Canada

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## Introduction

- Communication of evidence-based nutrition information by health professionals plays an important role in improving Canadians' health. Students gain knowledge from nutrition courses and develop critical thinking skills required for future careers.
- However, students and health professionals may also be influenced by competing messages on the internet, mainstream media and social media where communications may not always be based on best-available scientific evidence.

## Purpose

The objective of this study was to assess knowledge and attitudes/perceptions of carbohydrates (including sugars) among students enrolled in undergraduate nutrition program (nutrition-major) and those taking nutrition course(s) as electives (nutrition-elective) in Canada.

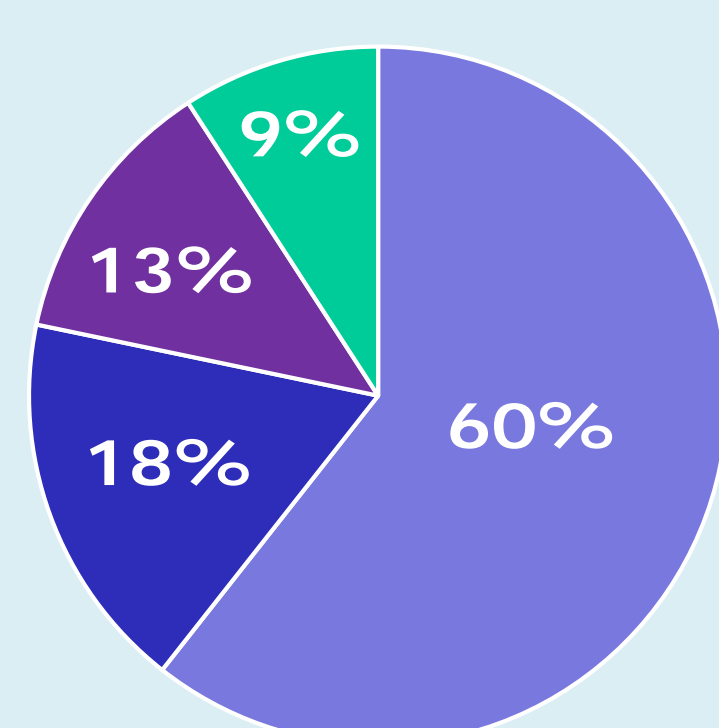
## Methods

- Cross-sectional questionnaires were distributed in nutrition courses to undergraduate students at different stages of their training at eight Canadian universities between January 2016 and February 2017
- The questionnaire contained 32 questions including student demographics, knowledge of carbohydrates, and perceptions of topics on carbohydrates, sugars and health.
- Descriptive analyses and statistical testing for the differences between nutrition-major and elective students in responses to survey questions were performed using SPSS.

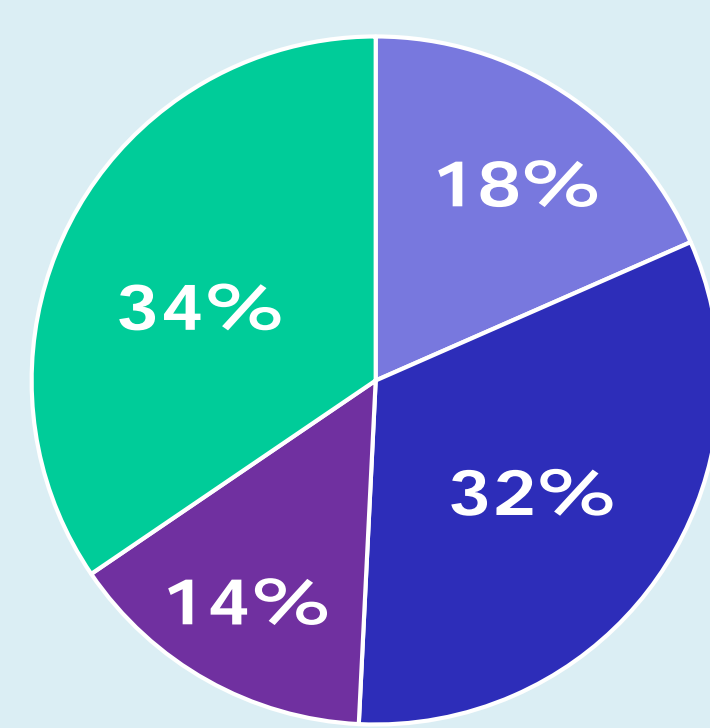
## Results

- A total of 1207 students taking a nutrition course participated in the study, 60% of whom were enrolled in a nutrition degree program (nutrition-major students).
- For nutrition-elective students, over 60% were enrolled in a Biology, Kinesiology or Health Sciences program.

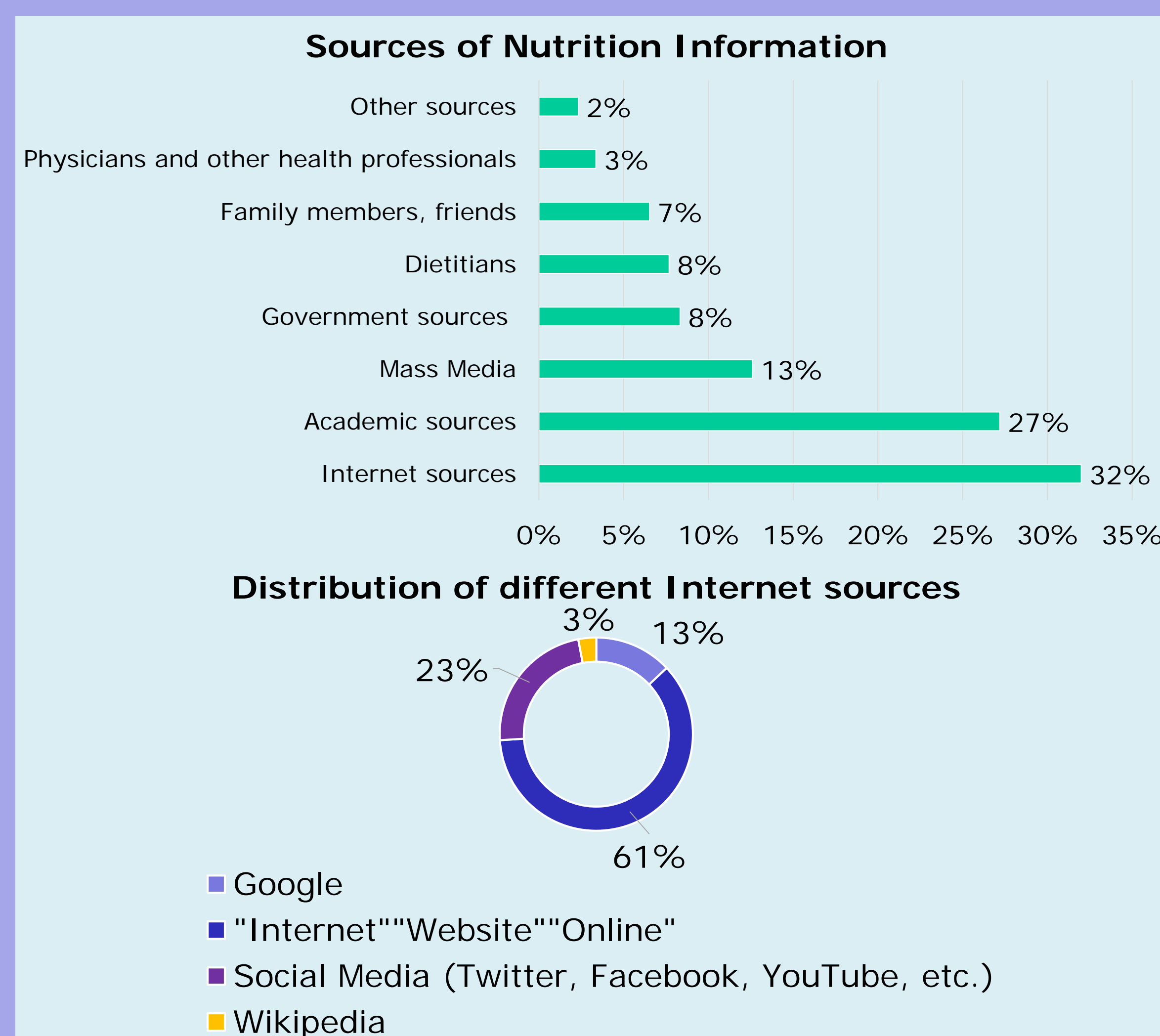
Degree Programs



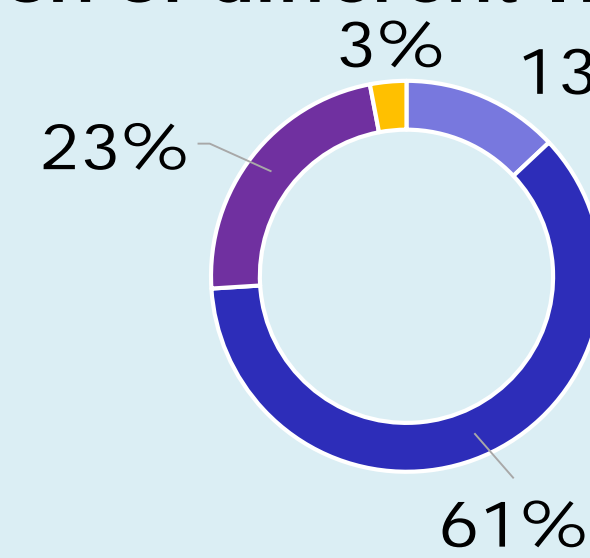
Year of Program



**Q: In addition to text books and lecture notes, what are the top 3 sources you would obtain nutrition related information from? (Open-ended)**

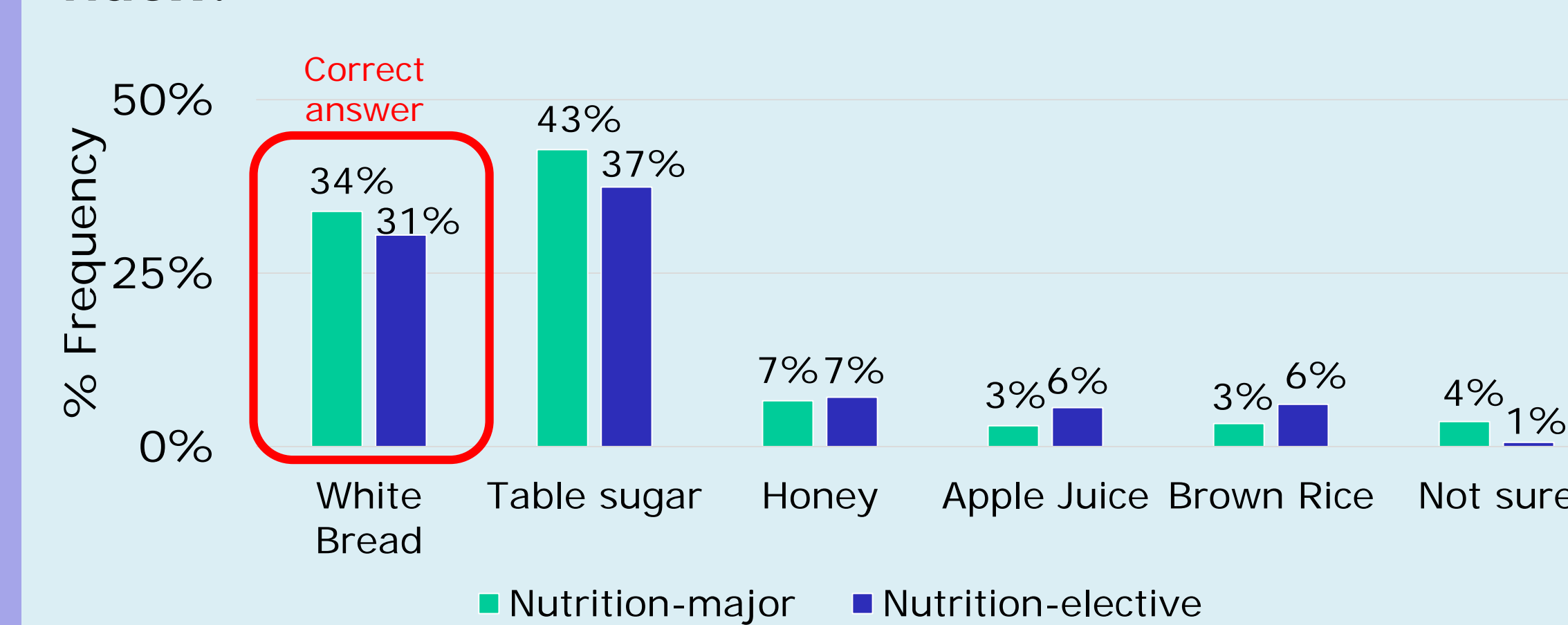


Distribution of different Internet sources



## Answers to knowledge questions

**Q: Which of the following has the highest Glycemic Index?**



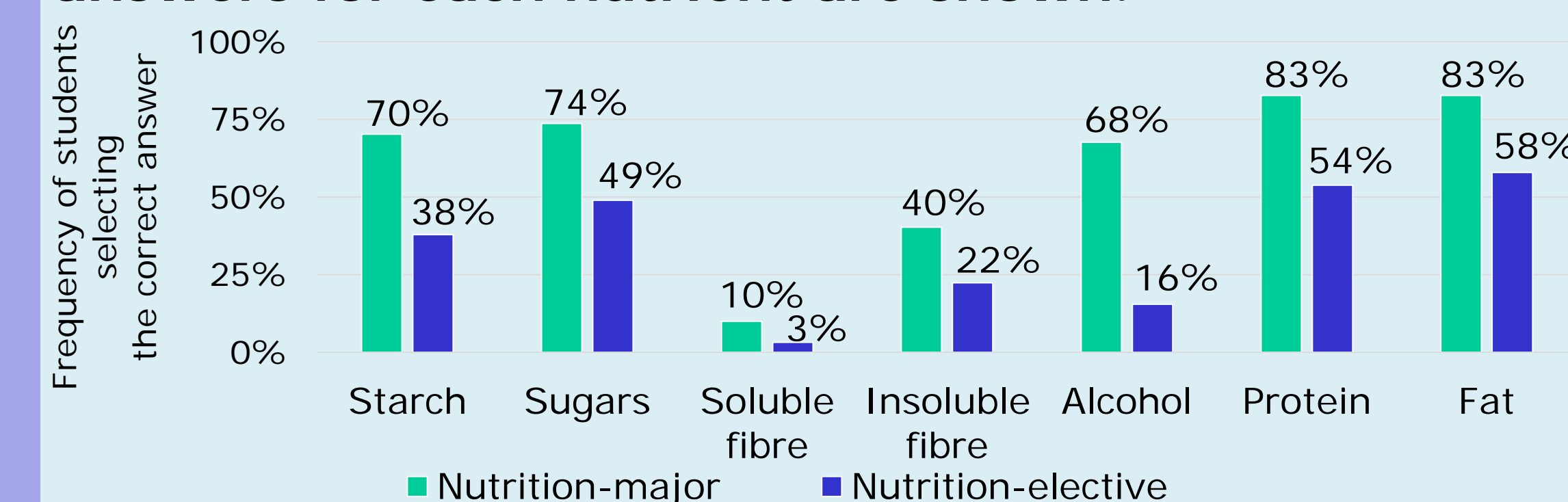
**Q: Statistics Canada reports that Canadians on average consume 26 teaspoons of sugars per day (1 teaspoon=4 grams). Which of the following are considered sugars by Statistics Canada in the assessment of sugars intake? Please check ALL that you think is (are) correct.**

- Table sugar (sucrose)
- Lactose in milk and dairy products
- Honey
- Maple syrup
- High fructose corn syrup
- Stevia (i.e. steviol glycoside)
- Fructose in apples and sweet peas

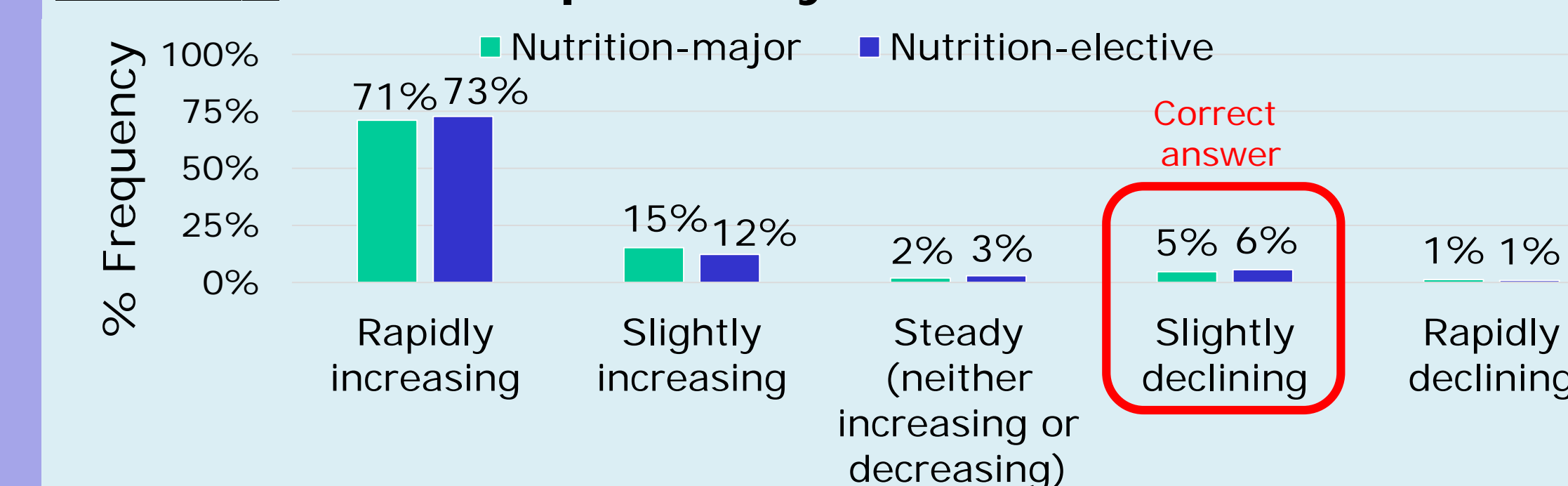
Student's Answer	Description	Nutrition-major students (%) (n=729)	Nutrition-elective students (%) (n=478)
ABCDEG	Correct answer (all except stevia are sugars)	16	21
ACDE	Incorrect answer (excluded naturally occurring sugars)	28	12
ACDEG	Incorrect answer (excluded lactose in milk and dairy products)	6	11
ABCDEFG	Incorrect answer (included stevia)	6	12

## Results

**Q: How many Calories per gram do the following provide? (Open-ended). Only percentages of correct answers for each nutrient are shown.**



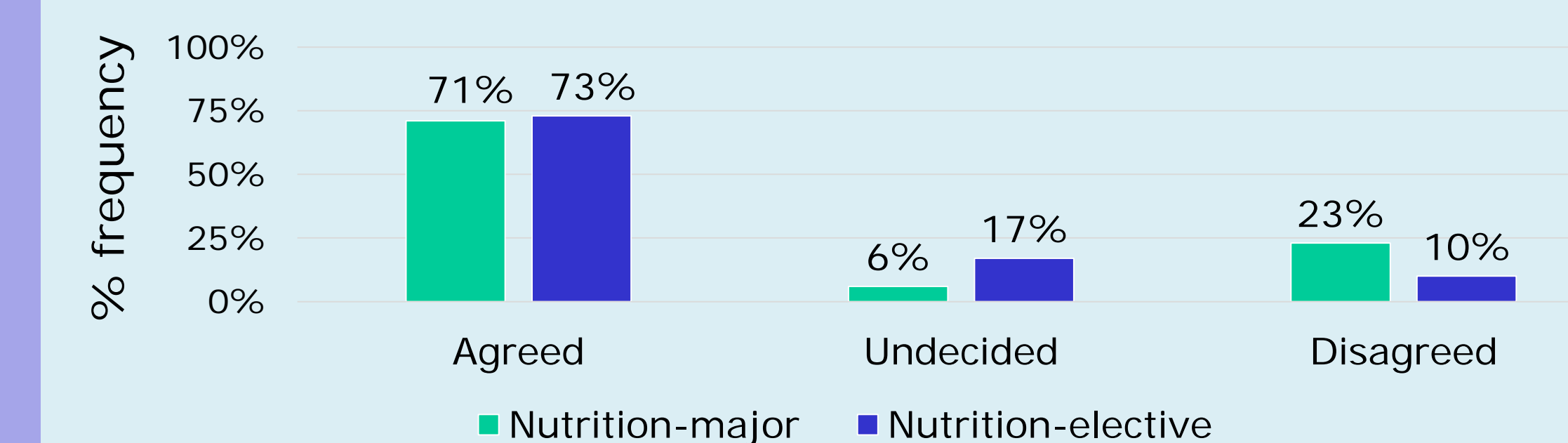
**Q: Added sugars consumption in Canada has been over the past 20 years.**



## Attitudes towards common perceptions in the media

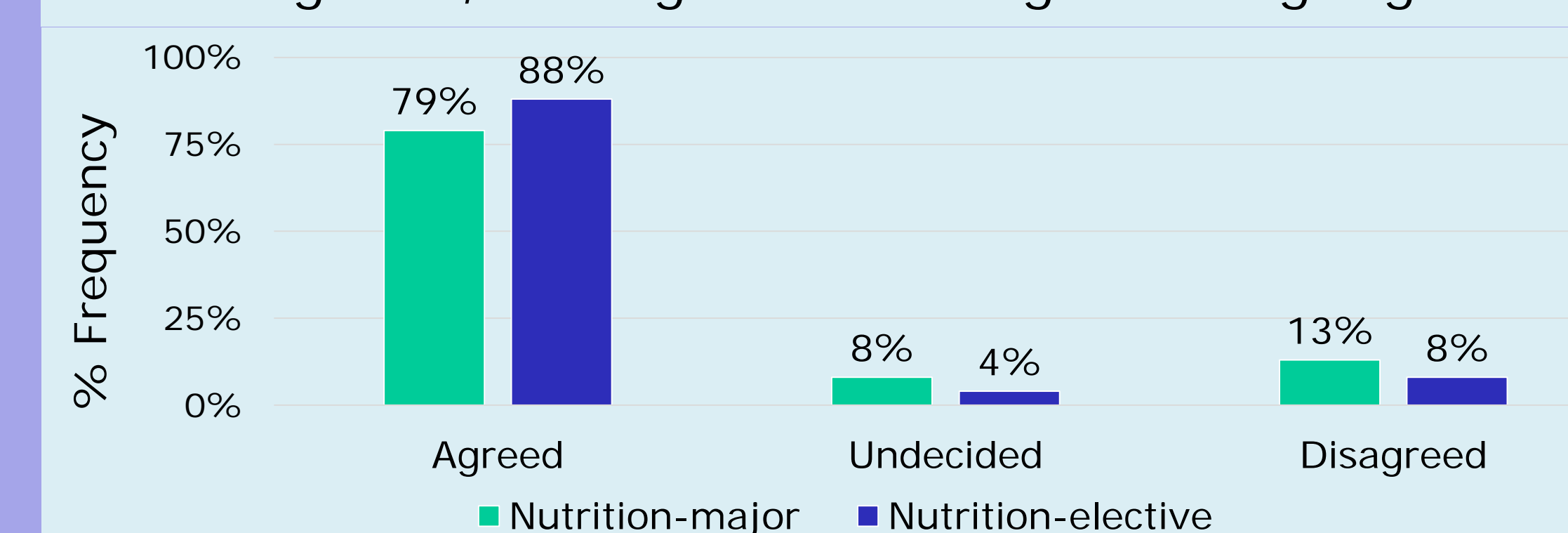
**Q: Do you agree with the following statement:**

"Added Sugars are more likely to contribute to weight gain" than other Caloric sources in the diet.



**Q: Do you agree with the following statement:**

"Sugars are addictive and make people crave more sugars containing food, leading to overeating and weight gain."



## Conclusions

- Several knowledge gaps were identified related to carbohydrates and sugars.
- Students with more nutrition training tended to have greater knowledge on carbohydrate-related issues, but not sugars.
- These results highlight the importance of students developing critical thinking skills when learning basic food chemistry and metabolism on carbohydrates and sugars to effectively identify evidence-based nutrition information from a variety of resources and opinion outlets.