

The Impact of COVID-19 on Eating Habits and Behaviours in Canadian Undergraduate Students: A Proposal

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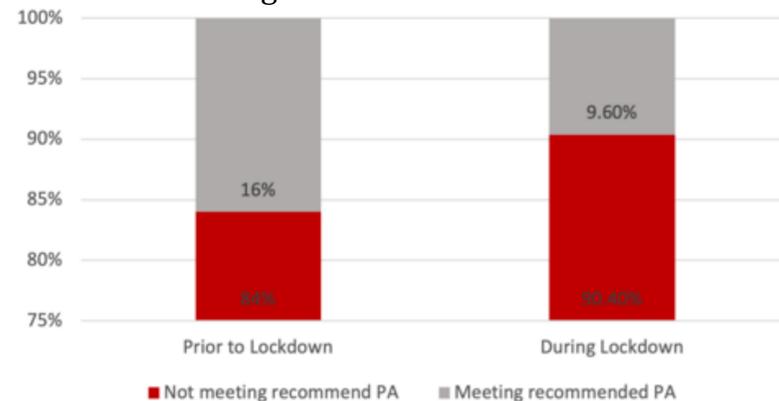
1. INTRODUCTION

- March 11, 2020, WHO declared COVID-19 a global pandemic¹.
- Most of the population was forced to live in home-confinement for weeks, ↑ the risk of ↓ their physical activity (PA) and of adopting sedentary behaviors.
- To date no nation-wide studies have examined the Canadian undergraduate student population and the impact of COVID-19 on their eating habits and behaviours.

1a. PHYSICAL ACTIVITY

- Canada's PA guidelines recommend 150 minutes of moderate to vigorous intensity
- Prior to lockdowns, the university student population was shown to already not meet PA guidelines².
- Past studies² have shown that during COVID-19 lockdowns PA ↓

Figure 1. Bertrand et al (2021), physical activity levels in Canadian undergraduate students in Saskatchewan



1b. EATING HABITS & BEHAVIOURS

- lifestyle habits adopted in university, are often carried into adulthood³
- a sudden imbalance in people's daily routines may be a stressor that could lead to poor eating behaviours
- ↑ anxiety due to COVID-19 associated with more severe eating disorder pathology³
- individuals with pre-existing eating disorders might be particularly vulnerable³

1c. ENERGY INTAKE

- Students often lack experience in meal planning/preparation
- Studies examining diet during the pandemic showed most countries ↓ diet quality & ↑ caloric intake = weight gain

Table 1. COVID-19 diet studies in student populations

Ammar et al., 2020	↑ unhealthy foods ↑ snacks between meals
Bertrand et al., 2021	↓ macro- and micronutrients ↓ diet quality (↓ grains, fruits & veg, dairy) ↑ alcohol consumption ↓ consumption of nutrient dense foods ↑ snacking
Gallè et al., 2020	↑ caloric intake ↑ snacking
Rodríguez-Pérez et al., 2020	↑ consumption of fruit, vegetables & legumes ↓ intake of red meat, and fried/sweet foods ↓ alcohol

2. HYPOTHESIS / OBJECTIVES

Purpose: examine whether there are changes in physical activity (PA), dietary intake, diet quality and dietary habits during the pandemic, and whether these changes vary based on sex or relate to changes in body mass index (BMI).

Primary Hypothesis:

- Pandemic isolation = negative Δ in PA, dietary intake, diet quality and eating behaviours/habits
- Δ different based on sex
- characterized by:
 - ↓ in overall PA
 - ↑ reliance on fast food and
 - ↓ fresh fruit & vegetable intake
 - ↑ in energy intake
 - ↓ in vitamin & mineral intake

Primary Objectives:

- Examine PA Δ due to the pandemic; sex differences
- Examine dietary intake & quality Δ in university students throughout the pandemic; Δ related to sex & PA
- Determine Δ in PA & diet to Δ in BMI; differences in males versus females

3. METHODS

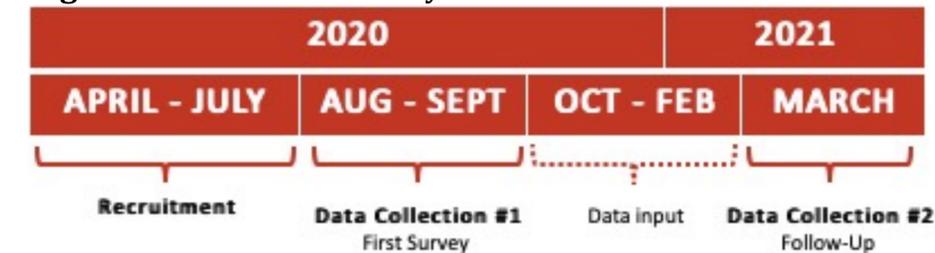
Design

- Online anonymous survey
- Nation wide distribution to Universities across Canada
- 2 collection points examining a 1-year period

Survey Components:

- Demographics & Physical Activity
 - Anthropometrics (height, weight, age, sex, etc.)
 - Living arrangements
 - Physical Activity / Energy output
- Eating Habits & Behaviours
 - Validated questionnaire
 - Good / poor eating decisions
- Food Frequency Questionnaire
 - Energy Intake (Macro & micro-nutrients)

Figure 2. Timeline of survey distribution & collection



4. FUTURE DIRECTIONS

- Longitudinal studies (5 - 10 year impact)
- Examining impact on various populations/groups

REFERENCES

1. World Health Organization, (2020)
2. Bertrand et al., (2021) doi: <https://doi.org/10.1139/apnm-2020-0990>
3. Scharmer et al., (2020) doi: <https://doi.org/10.1002/eat.23395>
4. Ammar et al., (2020) doi: <https://doi.org/10.3390/nu12061583>
5. Gallè et al., (2020) doi: <https://doi.org/10.3390/ijerph17103481>
6. Rodríguez-Pérez, (2020) doi: <https://doi.org/10.3390/nu12061730>

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