

## Abstract

- The objective of the study was to examine the influence of nutrition curriculum on dietary habits, nutrition knowledge, food security, attention, and wellness in international and domestic students.
- The participants were students enrolled in the Faculty of Health Sciences at Durham College.
- The results showed a rise in nutrition literacy and a decline in attention post nutrition courses, with no differences between the two groups of students.
- The results indicated improved wellness in international students as compared to domestic students.
- A negative correlation was observed between food insecurity and academic performance.
- Nutrition curricula can improve nutrition literacy in both international and domestic students.
- This highlights the importance of incorporating comprehensive nutrition education programs in post-secondary education to enhance food skills, knowledge, and overall wellness and the need to address food security issues among students.

## Introduction

- Education is a key social determinant of health and is a key platform for health promotion with the potential to reach many students<sup>1</sup>.
- There are rising rates of mental distress among students<sup>2</sup> and food insecurity, defined as inadequate access to enough food to sustain an active healthy lifestyle<sup>3</sup>.
- International students face unique barriers to achieving health equity and academic success including migration-related stress, social isolation, language barriers, new food pathways, reduced nutrition literacy, and food insecurity<sup>4</sup>.
- Given the changing demographics, including increased international enrollment, it is important to assess the impact of nutrition curricula on the social determinants of health.
- The objective of this study was to investigate the impact of nutrition curricula on dietary behaviour, nutrition literacy, food insecurity, attention, and wellness in international and domestic students and determine if there are any differences between these two subsets of students.

## Methods

- Students recruited from the Fitness and Health Promotion program (FHP) and the Dental Hygiene (DH) program

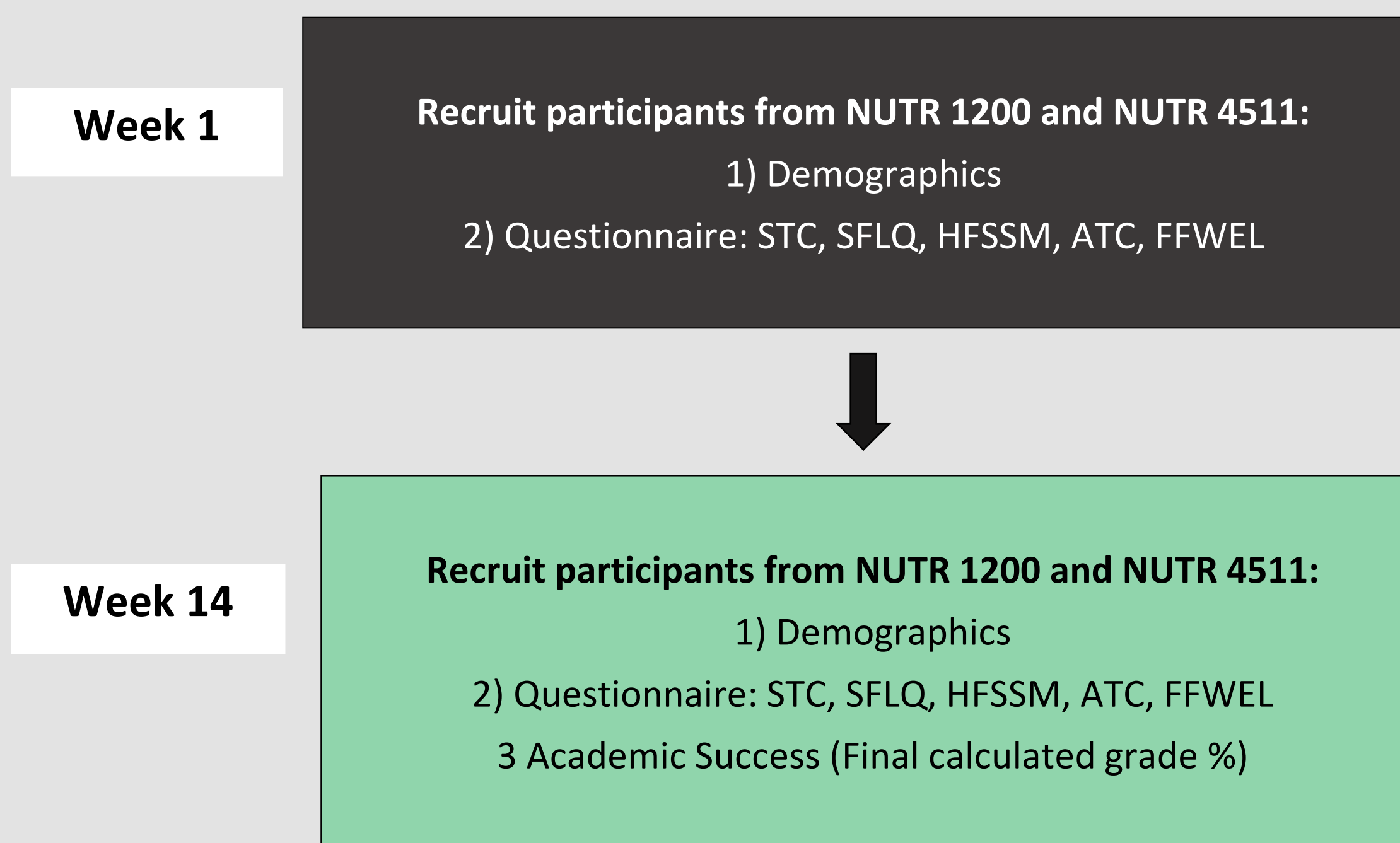
### Questionnaires:

- Administered at week 1 and week 14 in two nutrition courses (NUTR 1200 and NUTR 4511).
- Dietary behaviour (Start the Conversation (STC)), nutrition literacy (Short Food Literacy Questionnaire (SFLQ)), food security (Household Food Security Survey Module (HFSSM)), attention (Attention Control Span (ATC)), and wellness (Five Factor Wellness Inventory (FFWEL)).

### Academic success:

- Measured as final calculated grade (%).

**Figure 1:** Schematic illustrating the study protocol indicating that questionnaires are administered at week 1 and week 14.



## Analysis

- Two-way repeated measures ANOVAs were used to test the difference in mean measures (STC, SFLQ, HFSSM, ATC, FFWEL) at the different timepoints (week 1 and 14) and between groups (student category).
- Correlations between these measures and final academic grade were determined.

## Results

### Participants

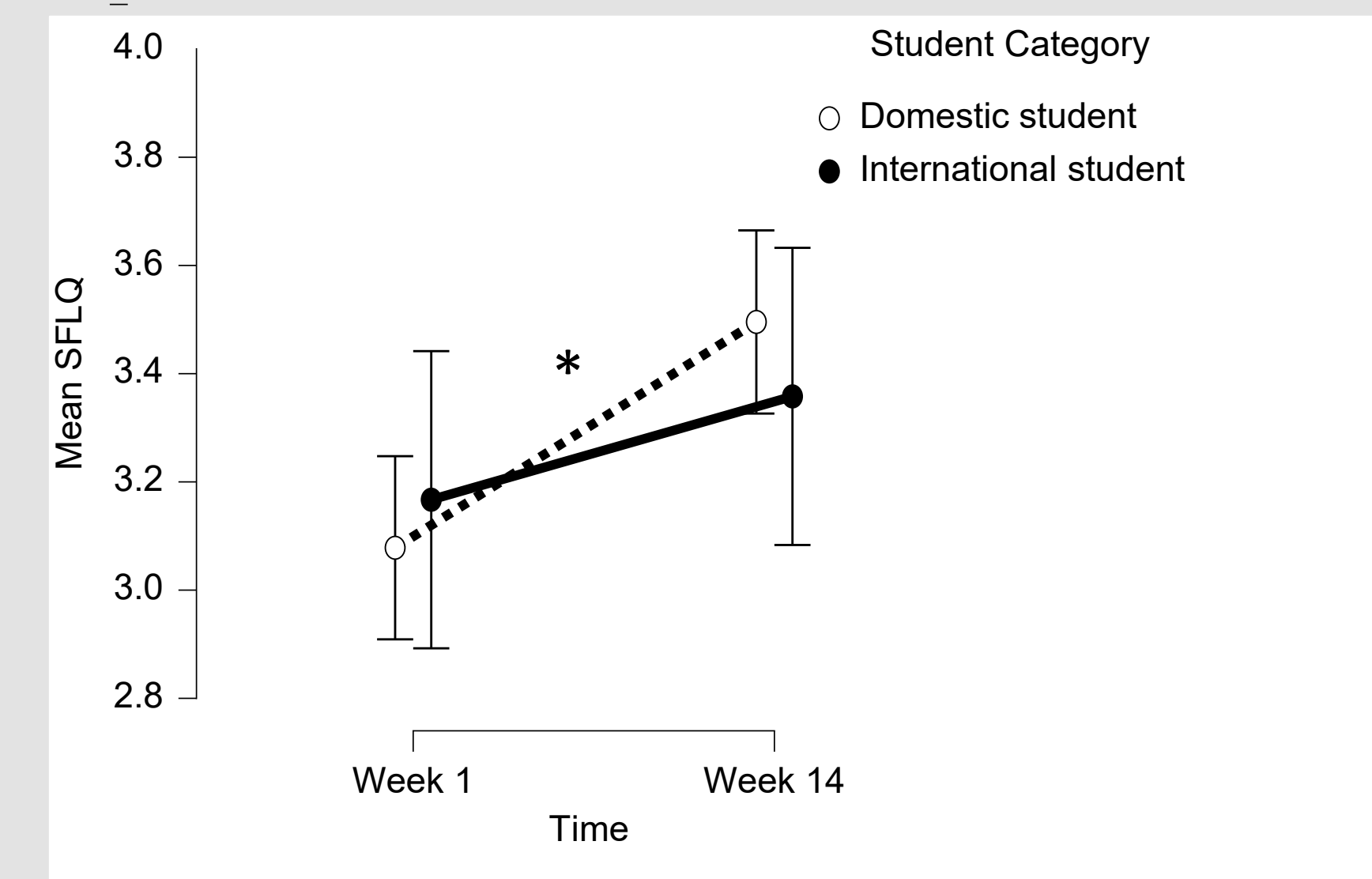
- A total of 73 students were asked to participate. Participants who completed questionnaires at baseline and following completion of the program were included in data analysis. The group consisted of n = 25 students [18 females, 7 males, mean age = 23.4 (SD = 4.9)].

### Graphs

- Note. Significant differences are indicated by an asterisk (p < 0.05). Error bars represent the standard deviation.

## NUTRITION LITERACY

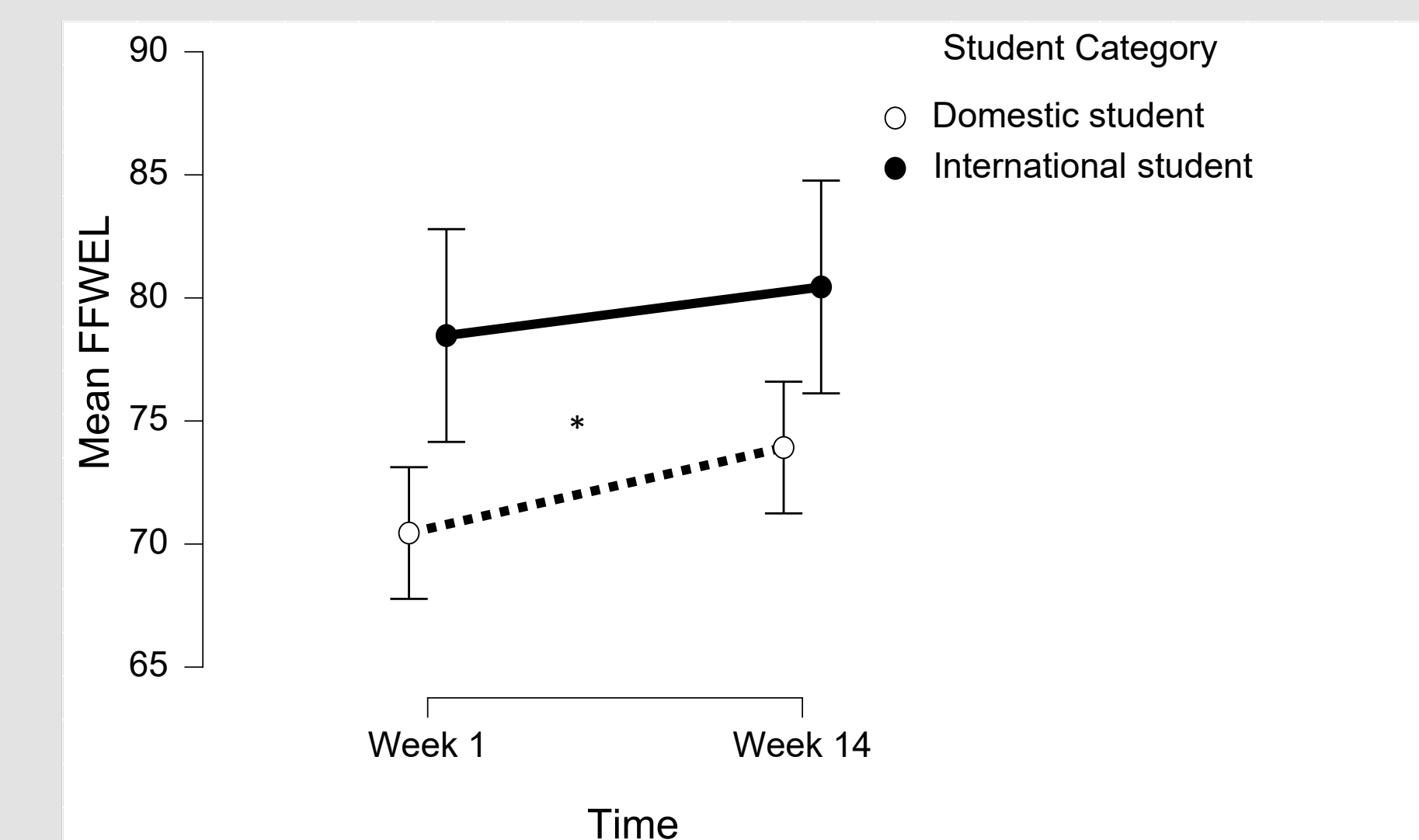
**Figure 2:** Line graph depicting the mean SFLQ measure at both timepoints.



- There was a significant effect of Time (F (1, 23) = 9.40, p = 0.005,  $\omega^2 = 0.094$ ). The average SFLQ measure increased for international students to 3.36 (SD = 0.56) and for domestic students to 3.50 (SD = 0.37)

## WELLNESS

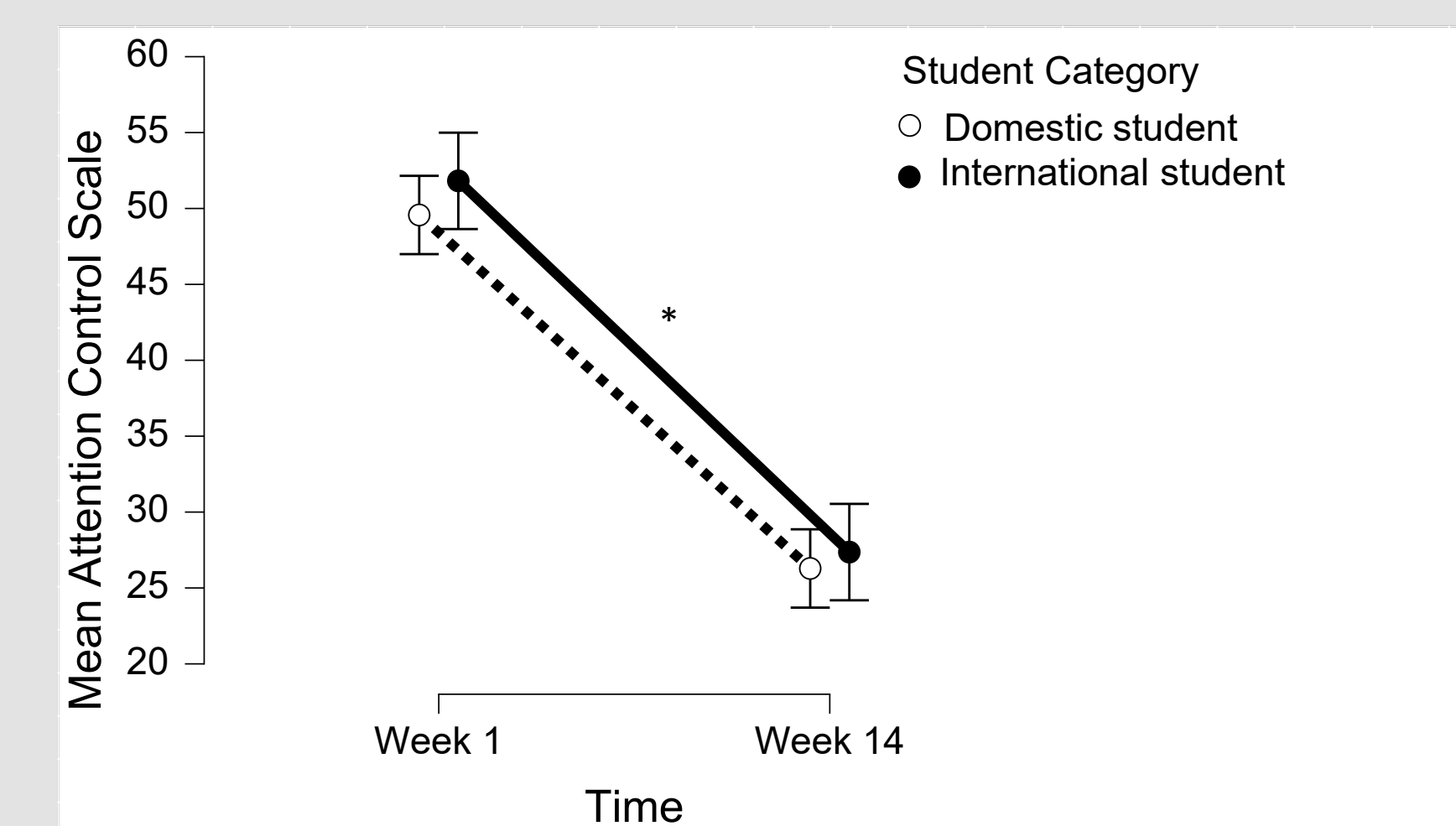
**Figure 3:** Line graph illustrating the overall mean FFWEL measure at both timepoints.



- There was a significant effect of Student Category (1, 23) = 4.91, p = 0.037,  $\omega^2 = 0.075$ ). There was no significant effect of Time or Time x Student Category.

## ATTENTION

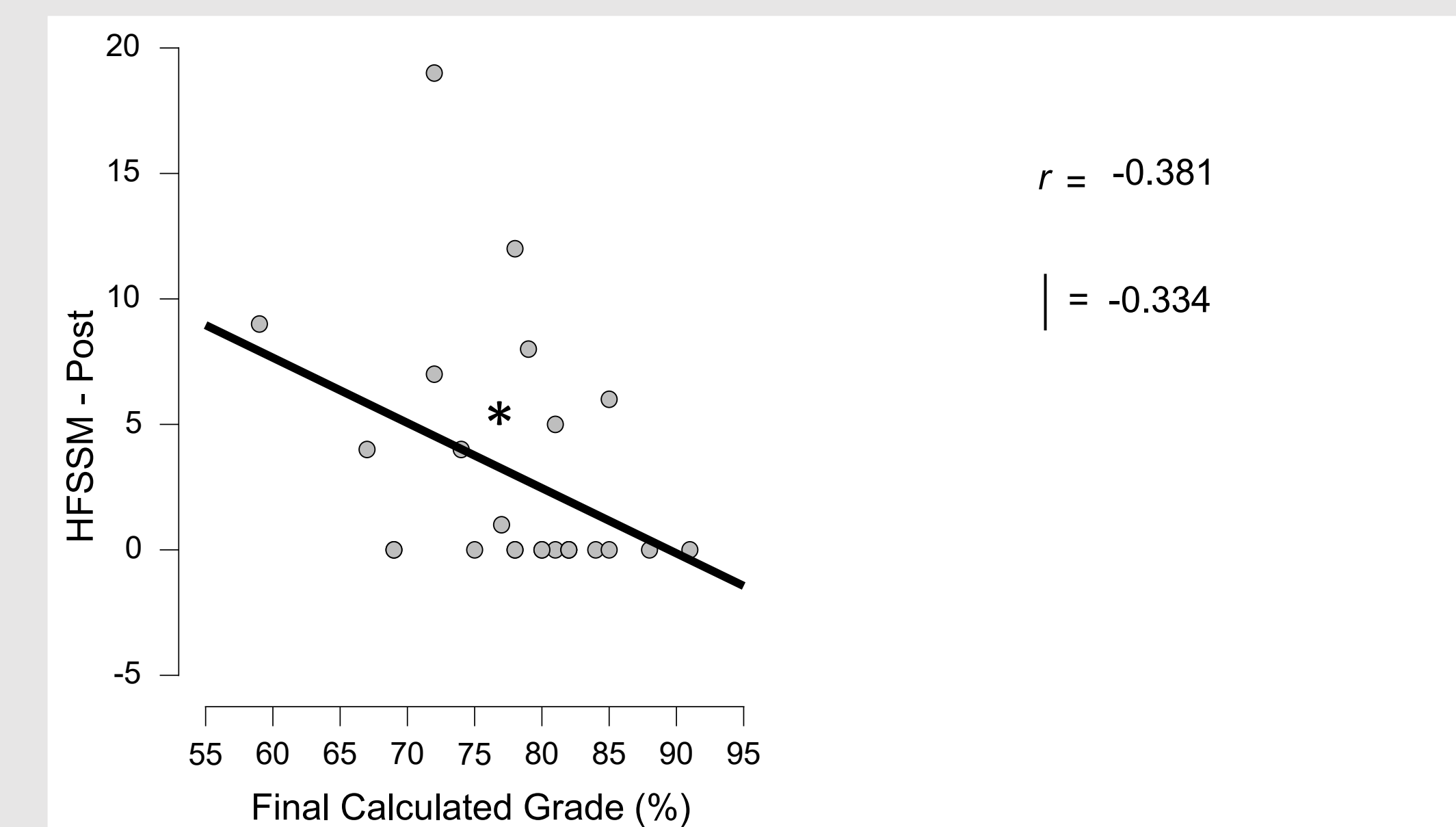
**Figure 4:** Line graph illustrating the overall mean ATC measure at both timepoints.



- There was a significant effect of Time (F (1, 23) = 334.4, p < 0.001,  $\omega^2 = 0.792$ ) and no significant effect of Time x Student Category.

## FOOD INSECURITY

**Figure 5:** Line graph illustrating the correlation between HFSSM (post) and Final calculated grade (%).



- Significant correlation between HFSSM (post) and academic success (tau = -0.33, p = 0.036)

## Discussion

- Nutrition curricula can improve nutrition literacy in both international and domestic students.
- Importance of incorporating comprehensive nutrition education programs in post-secondary education to enhance food skills, knowledge, and overall wellness.
- Significant negative correlation between food insecurity and academic performance, emphasizing the need to address food security issues among students.
- Food insecurity can act as a barrier to academic success, affecting class attendance and performance<sup>5</sup>.
- The reduction in attention could be addressed by enhancing the curriculum and increasing engagement using active learning tasks in the classroom or a flipped class approach.
- Further research is needed to understand the impact of nutrition curricula on actual dietary behaviors<sup>7</sup>.
- Post-secondary institutions should enhance their outreach efforts to vulnerable students, including international students, by increasing access to food resources (college food pantries, food aid programs) and financial counselling.

## References

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