

# Effect of a Nudge Intervention for Increasing Vegetable Intake among University Students in a University Cafeteria

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## Introduction

**Background:** An intake of  $\geq 350$  g of vegetables per day is recommended in Japan. However, the average intake of vegetables among young adults in their 20s is low (about 223 g) in 2019. Recently, the use of **nudge strategies** for behavioral change has been gaining attention. However, relatively few nudge trials for increasing vegetable intake have been conducted in Japan.

**Objective:** To evaluate the effectiveness of a nudge intervention for increasing vegetable intake among university students.

## Methods

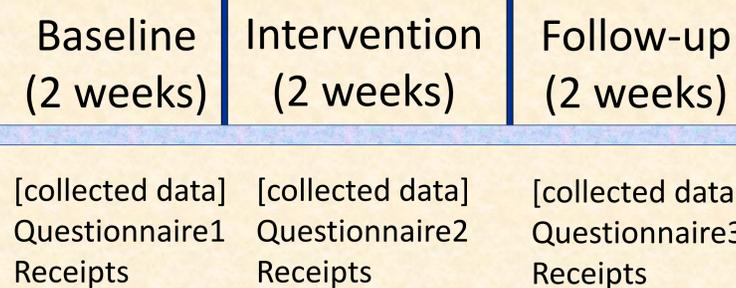
**Study Design, Settings, Participants:** The participants were university students who ate at a university cafeteria in Japan from October to November 2020. A total of 106 students participated in the baseline survey.

**Nudge:** As a nudge intervention, a tack board was set at the entrance of the cafeteria. It displayed the number of small bowls of vegetable dishes that were sold by putting magnets on the tack board on a real-time basis (**Figure 1**).

**Figure 1.** Tack board

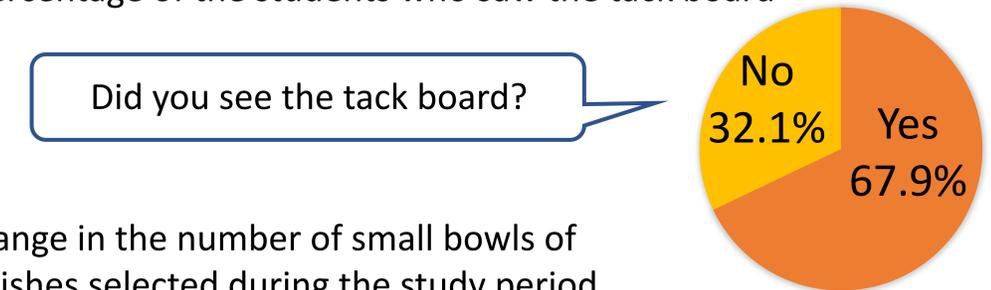


### ★Study schedule★



## Results

**Figure 2.** Percentage of the students who saw the tack board



**Table 1.** Change in the number of small bowls of vegetable dishes selected during the study period

	Median ( 25-75 percentile )	p <sup>‡</sup>
Number of small bowls of vegetables <sup>†</sup>		
Baseline	1.0 ( 0.0 - 1.0 )	0.811
Intervention	0.8 ( 0.3 - 1.0 )	
Follow-up	0.6 ( 0.3 - 1.0 )	

<sup>†</sup>Total number of small bowls of vegetable divided by the number of submitted receipt.

<sup>‡</sup>Friedman's test was used.

**Table 2.** A conscious change in vegetable intake during the study period

	Baseline	Intervention	Follow-up	p <sup>†</sup>
I am conscious of eating vegetables				
Yes	39 ( 73.6% )	40 ( 75.5% )	41 ( 77.4% )	0.794
No	14 ( 26.4% )	13 ( 24.5% )	12 ( 22.6% )	

<sup>†</sup>Cochran's Q-test was used.

A total of 53 students completed the study. Among them, 67.9% students answered they saw the tack board (**Figure 2**). However, the number of small bowls of vegetable dishes selected (p=0.811) and consciousness of vegetable intake (p=0.794) did not change significantly during the study period (**Table 1, Table 2**).

## Conclusions

Nudge intervention in this study did not change students' behavior significantly. Developing more attractive nudge tools for behavioral change might be needed.

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**Measurable Outcome:** The change in the number of small bowls of vegetable dishes selected by students during the study periods were evaluated by collecting receipts. Awareness of the tack board and a conscious change in vegetable intake were also evaluated using self-administered questionnaires.