

Nudging Consumers towards Healthier Carbohydrates

Department/Organisation: Health Promotion Board and Temasek Polytechnic Centre for Applied Nutrition Services (CANS)

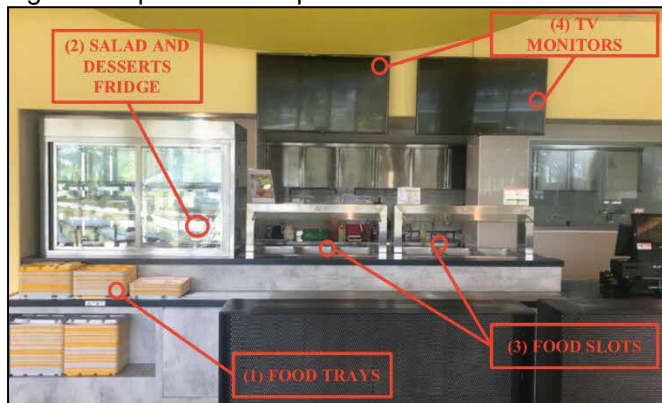
In a Nutshell

This study was a collaboration with the Health Promotion Board (HPB) and investigated factors that could nudge consumers in a school cafeteria towards choosing healthier wholegrain options. Based on Behavioural Insights (BI) principles, three different interventions were designed and implemented. These interventions were also compared to two different control groups. Customers' choice of carbohydrate was measured to determine the success of the interventions. Data analysis of the results revealed that the food service staff's script intervention significantly increased consumers' choice of wholegrain carbohydrates, while the other two interventions were not significantly better than the control groups. This suggests that active and timely recommendations by service staff might be effective in nudging consumers towards healthier food options, whereas passively displayed information might have lesser effects on consumers' choice.

Understand

Nutrition is a major determinant of one's health, and the consumption of wholegrains provides health benefits, such as a lower risk of chronic illnesses. As adolescence is a crucial period for shaping healthy dietary habits, it is crucial to investigate factors that can positively influence youths' eating habits. The current project aimed to increase the likelihood that one would choose the healthier, whole grain carbohydrates option over the unhealthier non-whole grain carbohydrates option over three weeks in Bistro Lab. Bistro Lab is a school-owned and student-operated cafeteria in Temasek Polytechnic (TP), which caters primarily to TP students (*Figure 1*).

Figure 1. Operation Setup of Bistro Lab.



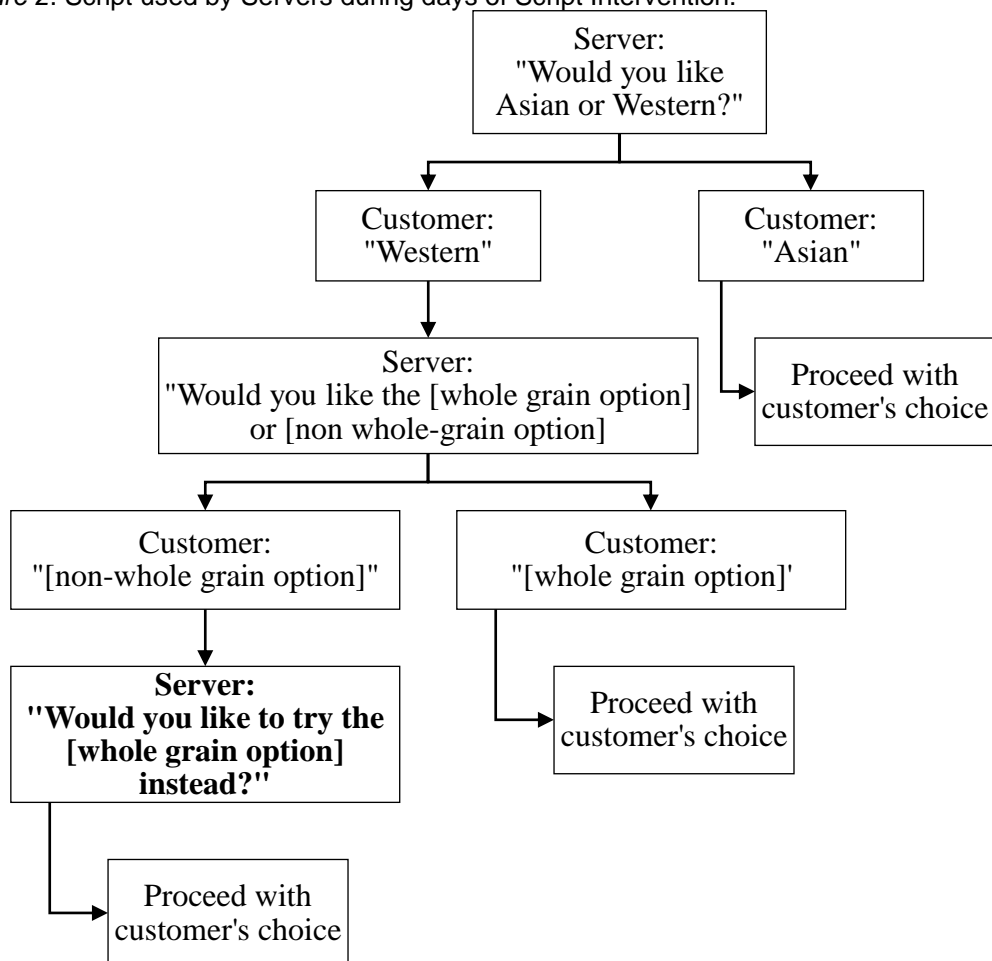
Researchers conducted a preliminary three-week naturalistic observation study to help us better-understand the factors behind adolescent students' decisions in choosing different carbohydrate types. During this period, both whole grain and a non-whole grain options were made available within Bistro Lab's menu offerings. Additionally, researchers also conducted pilot testing of interventions backed by past literature review and BI principles, and settled on three final interventions.

Solve – Ideate

There were three different BI interventions tested (Scripts, Decision Point Stickers, Posters) and 2 control groups.

Firstly, scripts were used by food service staff. The script targeted individuals who initially chose non-wholegrains. During the intervention period, researchers played the role of food service staff and posed a series of scripted questions to nudge consumers towards the wholegrain option (*Figure 2*).

Figure 2. Script used by Servers during days of Script Intervention.



Secondly, a small arrow-shaped Decision point sticker (DPS) stating "Choose Wholegrains" was pasted on the counter where patrons would typically place their orders. The arrow pointed directly to the wholegrain option, ensuring participants' awareness of the available wholegrain carbohydrate. Ideally, participants would read the sticker's recommendation right before ordering, and be primed to choose the wholegrain (*Figures 3.1 – 3.2*).

Figure 3.1. Decision Point Sticker.

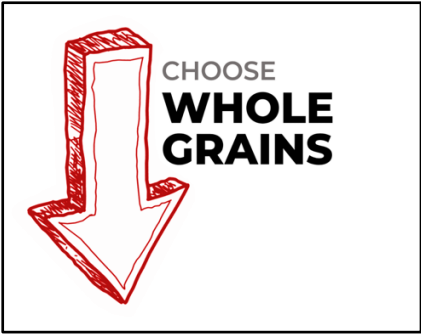


Figure 3.2. Placement of Decision Point Sticker.



Thirdly, we affixed posters at two locations – the yellow wall before the queue and the pillar beside the queue. Ideally, participants should notice the poster(s) before ordering their food, and be primed to choose the wholegrains (*Figures 4.1- 4.2*).

Figure 4.1. Poster.

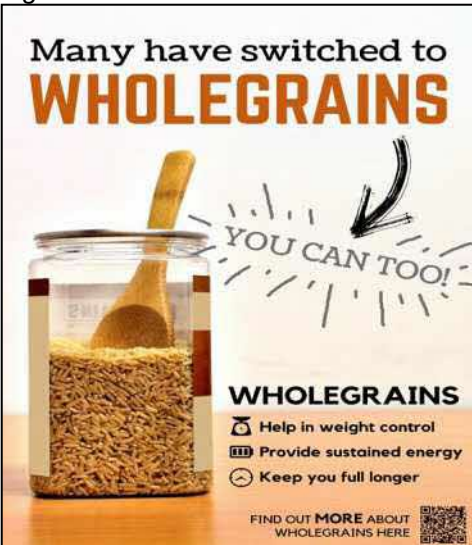
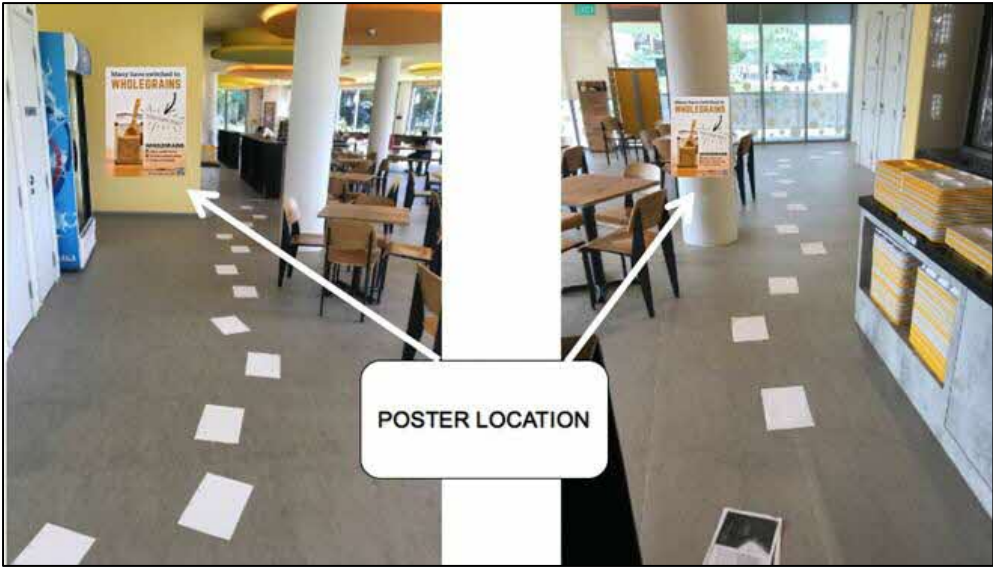


Figure 4.2. Placement of Posters.



Two controls were also implemented – Standard Control (Figure 5) and HPB’s Healthier Choice Symbol (HCS) Control (Figure 6). For Standard Control, the default menu of Bistro Lab was used, and no interventions were implemented. During the HCS Control condition, the wholegrain carbohydrate was labelled with the HCS on the onscreen menu.

Figure 5. Menu for Standard Control.



Figure 6. Menu for HCS Control.



Solve – Implement

The current study utilised an experimental design with Latin-square counterbalancing. To measure the effectiveness of the interventions, data was collected over three weeks. Aside from the three BI interventions, two controls were measured, firstly a 'null' control with no interventions in effect and secondly the HCS control wherein HPB's HCS was implemented on the menu. These control conditions provided a baseline measure of the pre-intervention rate of 'healthier' options chosen, and subsequently allowed us to study whether the desired behaviour continued without the intervention, or returned to the baseline. This study design enabled us to study the impact of the interventions upon presentation and re-presentation, and provided greater confidence in measuring intervention efficacy. *Table 1* shows the schedule for the intervention programme, incorporating the three interventions and two controls.

Table 1. *Study Design.*

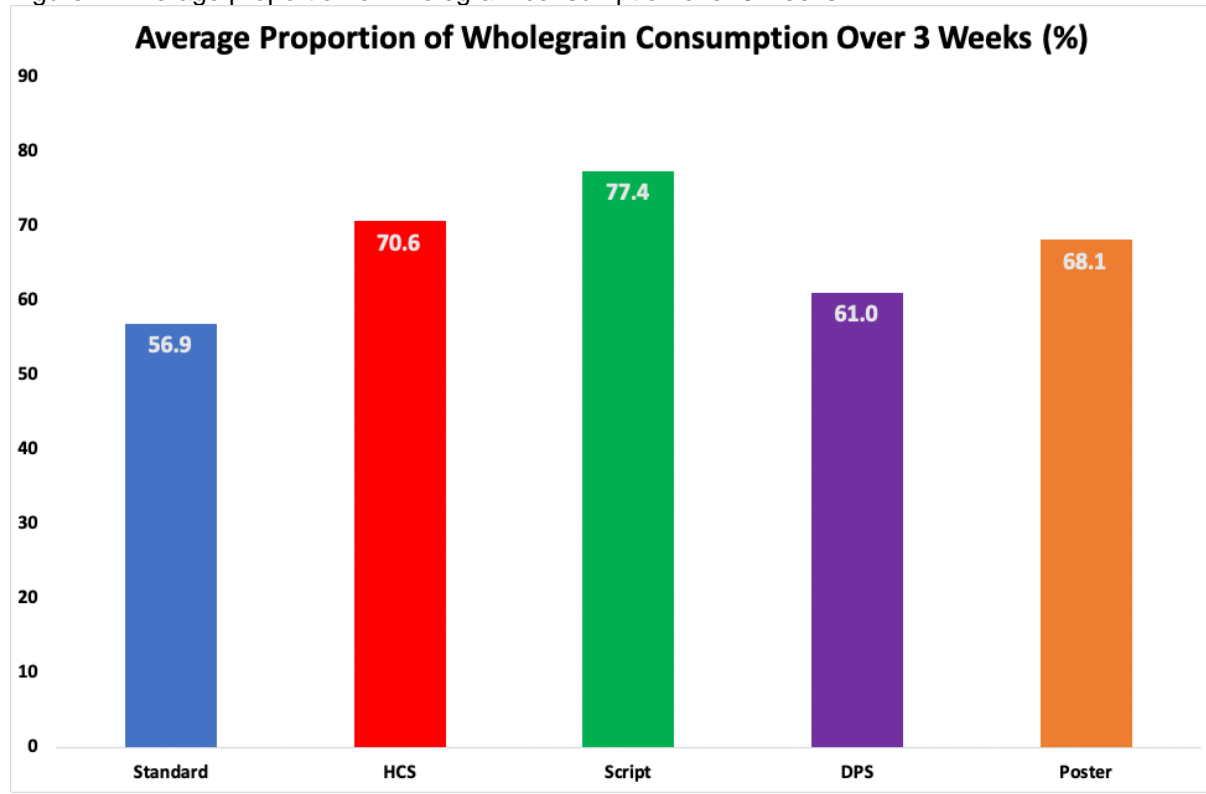
	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	Standard Control	Script	Decision Point Sticker	Poster	HCS Control
Week 2	Standard Control	Poster	Script	Decision Point Sticker	HCS Control
Week 3	HCS Control	Decision Point Sticker	Poster	Script	Standard Control

The western set meal purchases ($N = 1,791$) were recorded over the three weeks. Data was collected using Bistro Lab's Point of Sales (POS) system's End of Day report, where the total frequency count of each set meal bought as well as the whole grain and non-whole grain information at the end of the day was used for data analysis.

Evaluate

The script significantly increased purchase of wholegrains, and was thus effective at nudging carbohydrate choices in the right direction. This study also demonstrated that HPB's HCS alone was able to effectively nudge consumers towards whole grain carbohydrate choices, compared to no intervention at all. In fact, it was also better than the poster and sticker interventions in nudging carbohydrate choices, although this difference was not statistically significant (*Figure 7*). This was in contrast to previous studies, which found mixed results regarding the efficacy of such labels in influencing healthier food choices.

Figure 7. Average proportion of wholegrain consumption over 3 weeks.



Lessons Learnt

The effectiveness of the script intervention in dissuading consumers from the consumption of non-wholegrain carbohydrates, lends support to the notion that health-goal priming and the messenger effect are effective BI tools in nudging individuals towards desirable behaviours. The script's effectiveness also demonstrates how it could be targeted at youths to help shape the food preferences of adolescents. Additionally, the effectiveness of HPB's HCS in dissuading consumers from the consumption of non-wholegrains in our study supports the continuation of its extensive use in nudging the population towards healthier nutritional options.