



INTRODUCTION

BREAKFAST INTAKE

First meal intake after an overnight sleep until 10.00 am during weekdays while 11.00 am during weekends [1]

IMPORTANCE OF BREAKFAST INTAKE

- Provides energy for the brain; enhance learning
- Brings positive health behaviour, improves stress management, helps us to be more energetic [2]

CONS OF SKIPPING BREAKFAST

- Overweight and obesity [3]
- Dysmenorrhea [4]
- Increased mortality risk due to circulatory system diseases [5]

STUDY OBJECTIVE

To investigate the factors associated with breakfast consumption among Malaysian undergraduate students during COVID-19 pandemic.

DURING THE COVID-19 PANDEMIC

- Most of the works and studies were conducted at home, in which eating behaviours are believed to be affected [6].
- The frequency of skipping meal especially breakfast increased among university students during the lockdown due to COVID-19 pandemic [7].
- The time for the first and last meal intake of the day for the university students was also shown to be later significantly compared to that before the lockdown period of COVID-19 pandemic [6].
- Understanding the factors associated with breakfast consumption is required to better inform public health strategies and dietary interventions.

METHODOLOGY

STUDY DESIGN & RESPONDENTS

- Cross-sectional study
- Public and private universities

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none"> Malaysian undergraduates 18 to 25 years old Residing in Malaysia during the data collection 	<ul style="list-style-type: none"> Self-reported to have chronic diseases such as cardiovascular diseases, hypertension and diabetes Pregnant or lactating women

SAMPLING DESIGN

Convenience sampling



SELF-ADMINISTERED QUESTIONNAIRES (GOOGLE FORM)

- Sociodemographic background**
- Age
 - Sex
 - Ethnicity
 - Monthly household income level
 - Residential status
 - Field of study

Breakfast consumption habit questionnaire

- Frequency
 - Those who answers <5 days/week = breakfast skippers
 - Those who answers 5 or more days/week = breakfast eaters [1]
- Type of foods
- Time & location
- Reasons of skipping breakfast

International physical activity questionnaire (short form) (IPAQ-SF)

Internet addiction test (IAT)

Contour drawing rating scale (CDRS)

Depression, anxiety and stress scale (DASS-21)

Pittsburgh sleep quality index (PSQI)

Home-Ostberg morningness-eveningness questionnaire (MEQ)

RESULTS & DISCUSSION

Mean age: 21.85±1.59 years

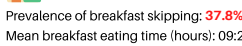
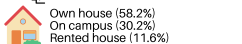
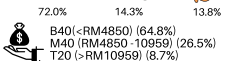
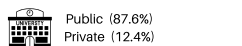
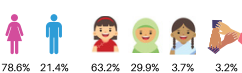


Figure 1: Distribution of respondents by types of foods consumed as breakfast (n=378)

The three most chosen reasons of skipping breakfast were "wake up late" (54.8%), "busy schedule" (32.8%), "not feeling hungry" (29.9%).

Figure 2: Distribution of breakfast eaters and skippers by ethnicity (n=378)

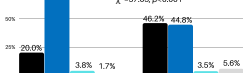
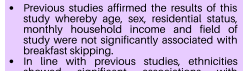


Figure 3: Distribution of breakfast eaters and skippers by body image satisfaction level (n=378)



Previous studies supported the findings of this study that physical activity, internet addiction level and body image satisfaction level were not associated with breakfast consumption.

Figure 4: Distribution of breakfast eaters and skippers by depression level (n=378)

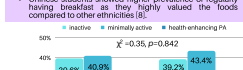


Figure 5: Distribution of breakfast eaters and skippers by internet addiction level (n=378)



Figure 6: Distribution of breakfast eaters and skippers by anxiety level (n=378)

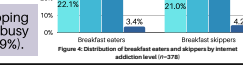


Figure 7: Distribution of breakfast eaters and skippers by stress level (n=378)

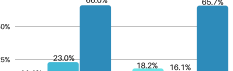


Figure 8: Distribution of breakfast eaters and skippers by depression level (n=378)

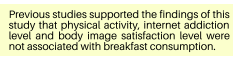


Figure 9: Distribution of breakfast eaters and skippers by anxiety level (n=378)

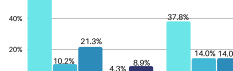


Figure 10: Distribution of breakfast eaters and skippers by stress level (n=378)

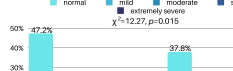


Figure 11: Distribution of breakfast eaters and skippers by stress level (n=378)



Figure 12: Distribution of breakfast eaters and skippers by depression level (n=378)

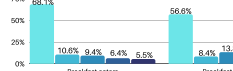


Figure 13: Distribution of breakfast eaters and skippers by anxiety level (n=378)

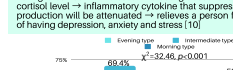


Figure 14: Distribution of breakfast eaters and skippers by stress level (n=378)



Figure 15: Distribution of breakfast eaters and skippers by stress level (n=378)

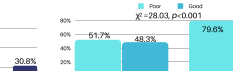
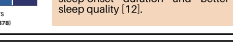


Figure 16: Distribution of breakfast eaters and skippers by stress level (n=378)



CONCLUSION

- More than one third of the undergraduate students in this study skipped breakfast.
- Those who are Malay, with high levels of depression, anxiety and stress, evening chronotype and poor sleepers were more likely to skip breakfast.
- Therefore, effective strategies and programmes are urgently needed to prevent unhealthy lifestyle behaviours and encourage regular breakfast consumption among university students in future COVID-19 lockdowns or similar pandemic.

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