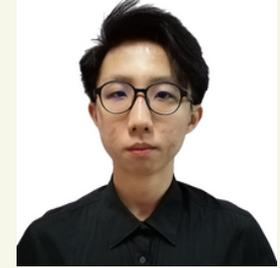# ASSOCIATION OF EATING MISALIGNMENT AND IRREGULARITY WITH WEIGHT STATUS AMONG MALAYSIAN YOUNG ADULTS

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INTRODUCTION

- Based on the **National Health Morbidity Survey 2019**, the prevalence of obesity among Malaysian adults was **19.7%** [1].
- Due to the difficulty in adhering to the lifestyle modifications which help in weight loss, there is **limited success** in weight loss interventions.
- **"When we eat"** was found to **possibly influence our body weight**, independent of the food intake and physical activity level [2].

This study aimed **to determine the association of eating misalignment and irregularity with weight status among Malaysian young adults**.

Eating misalignment occurs when **one actually eats beyond 30 minutes of his preferred first and last eating event times, morning and evening latencies, and beyond 60 mins of his preferred eating window** [3]. Eating irregularity is defined as **inconsistent timing and frequency of meals from one day to another**, as measured by the mealtime regularity score (the higher score indicates the greater regularity).

METHODOLOGY

Target population
Malaysian young adults (18-26 y/o)

Sampling method
Convenience sampling

Study design
Cross-sectional analytical study

Research instruments used:

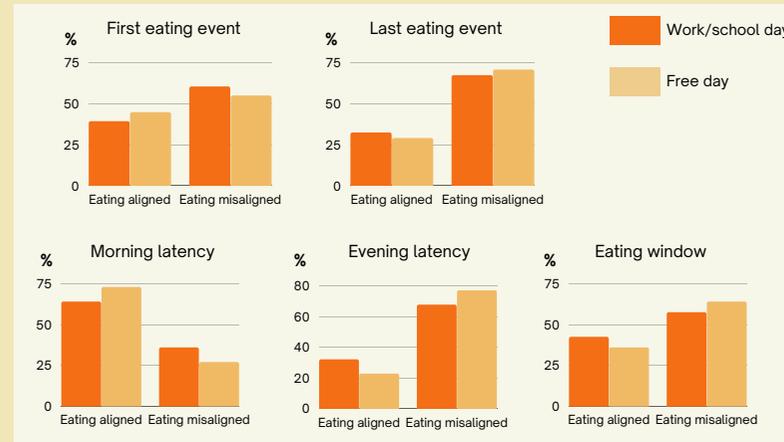|		
Self-reported weight and height	To determine weight status	
Chrono-nutrition Profile Questionnaire	To determine chrono-nutrition preferences and behaviours	
Meal timings record	For 2 weekdays and 1 weekend, to calculate mealtime regularity score	

RESULTS

Figure 1: Prevalence of eating misalignment among respondents (n = 287 to 293)

Table 1: Mean differences in body mass index between "eating aligned" and "eating misaligned groups (n = 278 to 283)

Variables	p-values
Work/school days:	
First eating event	0.675
Last eating event	0.557
Morning latency	0.862
Evening latency	0.488
Eating window	0.707
Free days:	
First eating event	0.234
Last eating event	0.407
Morning latency	0.927
Evening latency	0.443
Eating window	0.443

Table 2: Correlation between body mass index and mealtime regularity score (n = 239)

Variables	r-values	p-values
Mealtime regularity score	-0.023	0.722

Table 3: Correlation between weight gain in the past 6 months and mealtime regularity score (n = 97)

Variables	r-values	p-values
Mealtime regularity score	-0.010	0.925

Table 4: Correlation between weight loss in the past 6 months and mealtime regularity score (n = 51)

Variables	r-values	p-values
Mealtime regularity score	0.001	0.995

- **Majority of the respondents were experiencing eating misalignment**, with evening latency being the most misaligned. Eating alignment was found to be common for morning latency only.
- For all chrono-nutrition variables, there were **no significant mean differences in body mass index between "eating aligned" and "eating misaligned" groups** (p>0.05).
- **No significant association** was found between **body mass index and mealtime regularity score** (r=-0.023; p=0.722), as well as between **mealtime regularity score and weight changes** in the past 6 months (weight gain, r=-0.010, p=0.925; weight loss, r=0.001, p=0.995).

DISCUSSION

- **Eating misalignment was prevalent** among the study population, due to irregular and busy work/school schedules.
- **No prior study analysed the association of eating misalignment with weight status.** The insignificant association found in our study might be due to the **uneven distribution of the number of respondents in "eating aligned" and "eating misaligned" groups**, for most of the chrono-nutrition variables.
- There were **mixed results of the association of eating irregularity with weight status** among studies, possibly due to **different assessment methods of eating irregularity used across the studies**. This highlights the importance of standardising the method of eating regularity measurement in future studies for consistency.
- No association was found between mealtime regularity score and weight changes in the past 6 months, probably due to the **heterogeneity in respondents' intentions and efforts to change weight** which involved different levels of diet and physical activity level modifications.
- Other than mealtime regularity, future studies could include **calorie intake regularity** for each meal to assess the association of eating regularity with weight status.

CONCLUSION

- There were **no significant associations between eating misalignment and irregularity and weight status among Malaysian young adults.**
- More studies should be conducted to confirm the association of eating misalignment and irregularity with weight status.

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3. Veronda, A.C. and Irish, L.A., 2021. An examination of eating misalignment: The discrepancy between preferred and actual timing of food intake. Chronobiology International, 38(4), 557-564.