



UNDERGRADUATE

INTRODUCTION

Rapid weight gain:

- A z-score change greater than 0.67 in weight-for-age between **birth and current age during data collection** in childhood¹
- Rapid weight gain as **strongest risk factor for obesity** in childhood
- A child's first two years of life are considered a **"critical window of opportunity"** for the growth and health of children
- Parental feeding practices and child eating behaviors** may play a role in the rapid weight gain and consequent obesity
- No published research** studying associations of parental feeding practices and child eating behaviors with rapid weight gain among children aged 6 to 24 months old in Malaysia.

OBJECTIVE

To determine the associations of socio-demographic characteristics, parental body weight status, feeding practices and eating behaviors with rapid weight gain among Malaysian children aged 6 to 24 months.

RESULTS & DISCUSSIONS

1) Prevalence of rapid weight gain

20.1% of children rapid weight gain

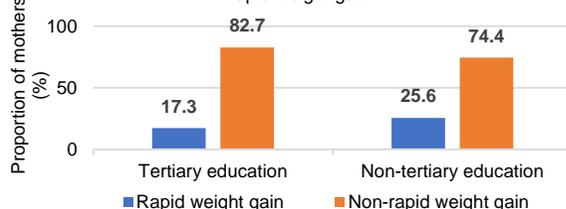
- It was reported the prevalence of rapid weight gain for 17 studies was **12.3% to 54.2%**²
- A South Korea study reported **16.3%** of children found rapid weight gain. The prevalence of rapid weight in the present study was higher compared to the previous study³

2) Socio-demographic characteristics

The **highest proportion** of mother's and father's educational level were tertiary level, **86.4%** and **76.2%**



Figure 1: Association between maternal education and rapid weight gain



- The educational level of mothers ($\chi^2 = 4.326, p = 0.038$) was significantly associated with children's rapid weight gain
- The children with mothers that have a **higher educational level** were **less likely rapid weight gain**
- The outcomes of maternal education and children's weight gain in a **high-income country cannot be directly transferred to a middle-income country**
- The mechanisms behind parental education's effects on rapid weight gain **remain uncertain**⁴
- Contrast with Western previous study** reported that children with rapid weight gain have **lower maternal educational levels**²

METHODOLOGY

STUDY DESIGN

- Cross-sectional design

STUDY LOCATION

- All over Malaysia (all states and federal territories)

SAMPLE SIZE

- 214 parents and their children

ETHICAL APPROVALS

- Ethics Committee for Research Involving Human Subjects Universiti Putra Malaysia (JKEUPM) (Reference number: JKEUPM-2021-137)

SAMPLING DESIGN

- Convenience sampling (COVID-19 Pandemic)

DURATION OF DATA COLLECTION

- March 2021 – June 2021

DATA COLLECTION

- Parents read and signed informed consent
- Parents answered questionnaire:
 - Father: Section A father
 - Mother: Section A mother, Section B & C

PARENTS-ADMINISTERED QUESTIONNAIRE

- A) Socio-demographic characteristics → Self-developed
- B) Feeding practices → Infant and Young Child Feeding (IYCF) Questionnaire⁵
- C) Eating behaviors → Children Eating Behavior Questionnaire (CEBQ)⁴

PARENTS BMI AND CHILDREN WEIGHT

- A) Parents reported their weight (kg), height (cm) and children's weight at birth (kg) and current age during data collection (kg)

DATA ANALYSIS

- Descriptive data: Continuous: Mean, Standard deviation
Categorical: Frequencies, Percentage
- Hypothesis testing: Chi-square test, Pearson correlation test
- A significance level set at $p < 0.05$

3) Parental body weight status

- The proportion of overweight and obesity was **higher among mother (56.5%)** than father (**32.7%**)
- No significant associations** between body weight status of mothers ($\chi^2 = 1.558, p = 0.669$), fathers ($\chi^2 = 6.542, p = 0.088$) and rapid weight gain

4) Parental feeding practices

- No significant associations between feeding practices and rapid weight gain.
- The high proportion of breastfeeding practices may led to most children were non-rapid weight gain.

CONCLUSION

- 1 in 5 of the Malaysian children had rapid weight gain aged 6 to 24 months**
- Mother educational level and slowness in eating behavior** were associated with rapid weight gain
- Future studies are suggested to include other factors such as **energy intake and bottle-feeding frequency** that may linked with rapid weight gain among children

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5) Child eating behaviors

Variables	Weight-for-age z score changes	
	r-value	p-value
Food approach		
Food responsiveness	0.012	0.864
Enjoyment of food subscale	0.121	0.077
Desire to drink subscale	0.068	0.321
Emotional over eating	-0.011	0.874
Food avoidant		
Satiety responsiveness	-0.043	0.533
Slowness in eating	-0.175	0.010*

- There was a correlation between slowness in eating and weight-for-age z score changes ($r = -0.175, p = 0.010$)
- Children who have **lower slowness in eating behavior** would have **higher weight-for-age z-score changes**.
- Faster eaters** consumed **more energy** and **larger bites** than slower eaters, resulting in a greater weight gain³