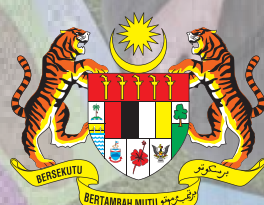


Risk Factors For Underweight Children Under Five Years Old

Evidence From A Case-Control Study In Putrajaya, Malaysia



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Introduction

- Undernutrition remains to be the underlying cause to the mortality and morbidity of children globally despite being preventable¹
- Underweight, also known as low weight for age, is one of the indicators of malnutrition.
- Approximately, 10.9 million children under five died in developing countries each year and 60% of the deaths directly or indirectly due to malnutrition²
- This study aimed to determine the risk factors for underweight among children under five years old in Putrajaya.

Methodology

- A case-control study with a one-to-one ratio between underweight and normal weight children.
- A total of 364 children with underweight and 364 children with normal weight were successfully recruited in this study.
- The sample was recruited from all government health clinics and preschools in Putrajaya.
- Data collection was performed by four approaches, face to face interview, anthropometric measurements, finger prick for assessment of hemoglobin level and self-administered 3-days food diary.
- WHO Anthro software was used to determine the nutritional status of children in this study³.
- Descriptive statistical analysis and logistic regression were performed to determine risk factors that contributed to underweight.

Results

Underweight children based on screening in Putrajaya

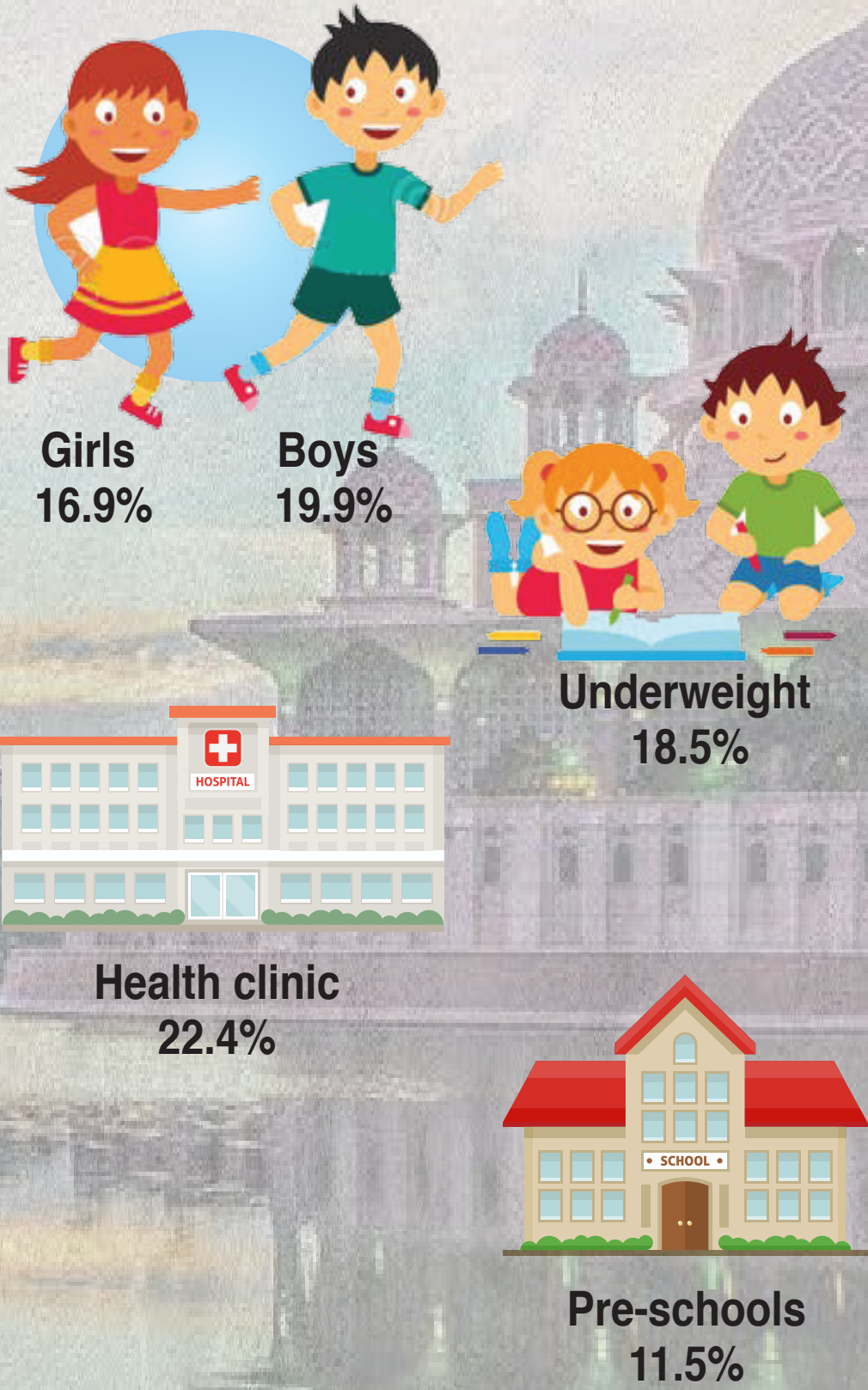


Table 1: Factors associate to underweight among children

Variables		Final model aOR (95% CI) p-value	
Birth weight status	Normal	I	
	Low	3.25 (1.89 - 5.60)	0.001
Mid-parental height (cm)	<150.0	3.03 (1.38 - 6.62)	0.006
	150.0-159.9	1.01 (0.73 - 1.40)	0.950
	≥160.0	I	
Place of care	Kindergarten	I	
	Babysitter	2.33 (1.52 - 3.59)	0.001
	Relative	1.30 (0.74 - 2.26)	0.357
Household income (monthly)	B40	2.17 (1.01 - 4.66)	0.048
	M40	1.59 (0.73 - 3.48)	0.243
	T20	I	
Pre-pregnancy BMI	Normal	I	
	Underweight	1.89 (1.10 - 3.26)	0.022
	Overweight or obese	0.72 (0.51- 1.102)	0.062
Monthly expenditure for childcare	<RM1,000	1.77 (1.01 - 3.101)	0.046
	RM1,000 - RM1,999	1.49 (0.85 - 2.61)	0.112
	≥RM2,000	I	
Use of pacifier	Yes	1.75 (1.21 - 2.73)	0.014
	No	I	
Father's occupation	Gov. servant	I	
	Non. Gov.	1.45 (1.04 - 2.02)	0.050
	Not working	0.37 (0.04 – 3.63)	0.392
Children Hb status	Normal	I	
	Anaemic	1.57 (1.15 - 2.16)	0.005

Discussion & Conclusion

- Low birth-weight is the strongest risk factor of underweight. Children with short stature parent three times more likely to become underweight compared to the children with parents height more than 160cm.
- This indicated that there was a significant association between the care of babysitters and underweight children.
- Low household income and monthly expenditure for childcare less than RM1000 was associated with underweight children.
- Anaemia was one of the significant factors related to underweight among children in Putrajaya.
- This study suggests early pregnancy intervention among mothers to improve foetus nutrition and health status during pregnancy.

Acknowledgement

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