

Association between Dietary Inflammatory Index and overweight among the Aboriginal primary school children in Negeri Sembilan.

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1. INTRODUCTION

- The Dietary Inflammatory Index (DII) is used as a new dietary tool to assess the inflammatory potential of an individual's diet¹.
- Numerous epidemiological studies had been conducted and consistently showed positive association between DII and overweight in adults^{2,3,4} but few studies had been conducted among the children.

2. OBJECTIVE

To investigate the association between DII and prevalence of overweight (BAZ>1SD) among the aboriginal children in Negeri Sembilan.

3. METHODOLOGY

- Study design:** Analytical cross-sectional study
- Study location:** 3 Aboriginal primary schools in Negeri Sembilan (SK Sungai Sempoo, SK Tekir, SK Putra)
- Sample size:** 193 Aboriginal primary school children
- Instruments:** Interviewer-administered questionnaires [Malaysian Adapted Nutrition Survey (MANS) food-frequency questionnaire, Sociodemographic backgrounds]
- Anthropometry measurements [Height (SECA mobile stadiometer), Weight (OMRON body fat analyzer model HBF-375)]
- Data analysis:** SPSS V20
- Descriptive analysis, Independent T-test, one-way ANOVA test, Pearson's chi-square test.

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4. RESULTS

Gender of student

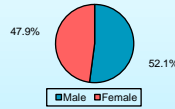


Fig 1 Percentage of students based on gender

Age category (yrs old)

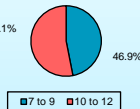


Fig 2 Percentage of students based on age category

Weight status

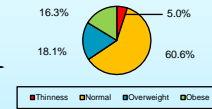


Fig 3 Percentage of students based on weight status

Table 1 DII tertile (TDII) and weight status (BAZ) according to age category

Age category	7 to 9	10 to 12	X ²	p-value
	% of student by age group			
T1	20.0	39.8	9.36*	0.01*
T2	32.7	34.3		
T3	47.3	25.9		
Not overweight	72.9	57.0	7.60*	0.01*
Overweight	27.1	43.0		

*Based on Pearson's Chi Square test; * statistically significant at p-value<0.05 Not overweight: BAZ ≤ 1SD; Overweight: BAZ > 1SD

Table 2 Association between DII tertile and weight status

DII tertile	T1	T2	T3	X ²	p-value
	% of student tertile				
Not overweight	55.3	64.3	66.7	1.43 ^a	0.50
Overweight	44.7	35.7	33.3		

5. Discussion

- Previous study had found a positive correlation between DII score and less healthy food and nutrients such as sugar-sweetened beverages, saturated and trans fat⁵.
- This indicate the younger children in this study may consume more foods that are high in fats, and other less healthy nutrients that are more pro-inflammatory.
- Similar with other studies^{6,7}, there was no significant relationship between DII and overweight were found in this study (X²= 1.438, p=0.49).
- This may be due to the diet-induced inflammation between normal and overweight subjects were not significantly different.
- The other reason may be due to failure to obtain the inflammatory biomarker as some study had shown that there is no correlation between the biomarkers and anthropometry measurements among the adolescents (TNF-α and hsCRP with BMI and WHR)⁸.
- Another possible factor may contribute to the insignificant association between DII and overweight in this study is that fewer food parameters were being included in the calculation of DII.

6. CONCLUSION

Although a higher inflammatory diet score (pro-inflammatory diet) was associated with obesity, but it does not predict overweight in the aborigine children.

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