



Assessment of the Distribution of the Energy Intake among Children Aged 6-12 Years Old across Socio-Economic Status in Siem Reap Province, Cambodia.

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Key words: Assessment, energy intake, Socio-economic, Cambodia

Introduction

Nutrition is essential for growth and development, health and wellbeing. Globally, there are more than 300 million under 5 years of age undernourished. CDHS 2014 confirmed the high prevalence of stunting (32%), wasting (10%) and underweight (24%) among children under 5 years old. School aged children are one of the groups severely affected by malnutrition. However, limited data about malnutrition among the group has been observed. There are certain evidences of inequalities in energy intake across socio-economic groups; Our study is to assess the distribution of energy intake across different socioeconomic strata among children aged 6-12 years old in Siem Reap province.

Methods

This cross-sectional study was conducted at Peaksneng commune, Angkor Thom district in Siem Reap province. Six villages randomly selected, were under the coverage of Peaksneng health centre with about 6,000 habitants including 700 children. About 160 mothers/caregivers completed the nutritional information with 24-hour recall questionnaires. Then, nutritional information was entered and calculated in FIDR Nutrient software to calculate energy intake, macronutrients and micronutrients. The data were exported to Stata V 12 for the analysis. Descriptive analysis and bivariate with chi-square were used to describe the data and to test the association between wealth index, age group, child's sex with nutrients and energy intakes.

Results

Average daily calories intake for children was 1325 Kcal (Median = 1260 Kcal). About 83% of children did not consume enough energy recommended by RDA (≤ 2110 Kcal/per day). The main macronutrients sources were from carbohydrate (81%) followed by protein (14%) and fat (5%). Most micronutrients were under recommended level including calcium, iron and zinc, while there was over consumption of salty diet among children.

High wealth index children had significant lower energy intakes than lower wealth index children (15.0% vs. 31.2%, p value = 0.04). When children grew older, the consumption of protein sources was significant decreasing: Children aged 6 years had enough protein sources (45.1%), 7-9 years old (30.7%) and 10-12 years (17.8%) with p value < 0.01 . However, there was no association between, children's sex and age group with estimated energy intakes.

Conclusion

Overall, only 17% of children of the samples had consumed enough energy at least 2110 Kcal daily recommended by South East RDA. There are disproportionate nutrients intakes among children aged 6- 12 years old in the study samples for both boys and girls. Micronutrients that are crucially important for overall healthy growth and development including mineral and vitamin are unevenly distributed. Calcium, iron and zinc were found to be lower than the RDA while there are exceeding of sodium and potassium in their food.

Protein source becomes lacking when children grew older due to their higher calories needed while consumption remains the same because their body need physical and mental to grow up according to their ages. Surprisingly children from high wealth index families had lower consumption of energy than children from the low wealth index families. This may be due to the recall bias from the 24-hour questionnaire or due to study samples were selected from the poor of the poor community. Therefore, more protein sources should be increased according to child growth. Also, children should get better balance of RDA macronutrients and micronutrients with enriched fruit and vegetables and less salty diet.