

## **A42 Prevalence and associations of malnutrition, anaemia and micronutrient deficiencies among underprivileged rural primary school children in Malaysia**

**Tan PY<sup>1,2</sup>, Teng KT<sup>1</sup>, Loganathan R<sup>1</sup>, Selvaduray KR<sup>1</sup>, Lim YAL<sup>2</sup>, Lee SC<sup>2</sup>, Ngui R<sup>2</sup> and Johari SNM<sup>2</sup>**

<sup>1</sup>*Division of Product Development and Advisory Services, Malaysian Palm Oil Board, No 6, Persiaran Institusi, Bandar Baru Bangi, 43000, Kajang, Selangor, Malaysia*

<sup>2</sup>*Department of Parasitology, Faculty of Medicine, Universiti Malaya, Jalan Universiti, Kuala Lumpur, 50603, Malaysia*

Malnutrition leads to impaired growth, increased risk of infection, impaired cognitive function, and premature death among children. This study aims to determine the prevalence and associations of malnutrition, anaemia, vitamin A deficiency (VAD), iron deficiency and iron-deficiency anaemia among underprivileged rural primary school children in Malaysia. This cross-sectional study is a baseline assessment of a randomised clinical trial among primary school children from 10 primary schools in rural areas of 5 different states (Pahang, Perak, Johor, Sabah and Sarawak) in Malaysia. Fasting blood samples were collected for biochemical analysis and anthropometric indices were computed using *anthro* R-package provided by the World Health Organization (WHO). A total of 776 (379 boys and 397 girls) children aged 7 to 11 years, with complete anthropometric and biochemical data were included in this analysis. The mean age of the children was 9.10±1.39 years. Median z-score of weight-for-age (WAZ), height-for-age (HAZ), and BMI-for-age (BAZ) were -1.36 (IQR=-2.25 to -0.37), -1.59 (IQR=-2.32 to -0.85) and -0.40 (IQR=-1.03 to 0.48), respectively. Based on WHO growth standards, 414 children (53.4%) suffered from malnutrition, with the prevalence of underweight, stunting, thinness and overweight at 30.5%, 34.9%, 4.8% and 15.5%, respectively. The prevalence of anaemia, confirmed VAD, iron deficiency and iron-deficiency anaemia were 14.9%, 20.6%, 12.8% and 6.1% respectively. The present study found that anaemia, VAD, iron deficiency and iron deficiency-anaemia are positively associated with underweight and stunting status. In conclusion, malnutrition, anaemia and micronutrient deficiencies are still public health concern among underprivileged rural primary school children in Malaysia. Thus, these data highlight the urgency for multi-agencies' involvement in various nutritional intervention programs among children to work in partnership, through data sharing and consolidation of resources so that these efforts will be more impactful through inclusive initiatives.