

# **School-based intervention that integrates nutrition education and supportive healthy school food environment among Malaysian primary school children: a study protocol**

## **ABSTRACT**

**Background:** Malnutrition among school children may contribute to adverse health consequences such as non-communicable diseases, poor cognitive performance, psychological distress and poor quality of life that may persist into adulthood. In order to prevent childhood malnutrition, an intervention programme that integrates nutrition education and healthy school food environment is needed to provide nutrition information and reinforce the skills on healthy eating behaviours in schools. This paper describes a study protocol of a school-based intervention programme that integrates nutrition education and healthy school food environment, namely School Nutrition Programme (SNP). The SNP is a primary prevention programme that promotes healthy lifestyle among primary school children in light of the high prevalence of malnutrition in Malaysian children. **Methods/design:** This quasi-experimental study aimed to evaluate the effectiveness of the SNP between intervention and comparison groups before and after the SNP, and after a 3-month follow-up. The SNP consisted of two main components, whereby three nutrition education sessions were implemented by trained teachers using three standardised modules, and healthy school food environment was implemented by the canteen food handlers with the provision of healthy menu to children during school recess times. Children from intervention group participated in the SNP, in addition to the standard Physical and Health Curriculum. The comparison group attended only the standardised Physical and Health Curriculum and the school canteen food handlers were reminded to follow the standard canteen guidelines from the Ministry of Education Malaysia. The assessment parameters in evaluating the effectiveness of the programme were knowledge, attitude and practice on nutrition, eating behaviours, physical activity, body composition, psychological distress, cognitive performance and health-related quality of life. Assessments were conducted at three time points: pre-intervention, post-intervention and 3-month follow-up. **Discussion:** It was hypothesised that the SNP would be effective in promoting healthy lifestyle among school children, and further contributes in preventing malnutrition problem, enhancing cognitive performance and improving health-related quality of life among school children. Findings of the present study can be expanded to other schools in future on ways to improve nutrition education and healthy school food environment.

**Keyword:** Children; Malnutrition; School-based intervention; School nutrition; Nutrition education; School food environment