

Abstract

Based on the island wide survey on Vitamin A deficiency status in 1995/96, a national programme of Vitamin A supplementation among school children using an oral mega dose of 100,000 IU was commenced in 2001. A cross sectional analytic study was conducted between May and August 2002 to assess the impact of the Vitamin A supplementation programme among school children attending Years 1 and 4 in the Yatiyantota MOH/DDHS area in the Kegalle district. The prevalence of symptoms and signs of Vitamin deficiency and nutritional status of children supplemented with an oral mega dose of Vitamin A were compared with non-supplemented children. The frequency of consumption of Vitamin A rich foods among school children was determined using a modified version of the Helen Keller Food Frequency Survey Questionnaire.

Children enrolled in Years 1, 2, 4 and 5 in Government schools located in the Yatiyantota MOH comprised the study population. The sample was selected using a cluster sampling technique. A total of 746 children were studied of whom 452 were supplemented with Vitamin A. A pre-coded, pre-tested, structured, interviewer administered questionnaire comprising closed ended questions was used to collect socio-demographic, health related and food frequency survey data. Trained PHMM were used as interviewers. Night blindness was assessed by history and by eliciting poor dark adaptation in a dimly lit room. Children were examined for conjunctival xerosis and bitot's spots. Heights and weights were measured according to WHO guidelines. Anthropometric data and presence of eye signs during the last SMI were abstracted from the SMI card.

The majority of children were from families having a poor socio-economic background with marked differences between families of supplemented and non-supplemented children. The socio-economic status of families of supplemented children was poorer than those of non-supplemented children.

The prevalences of night blindness by history and by evaluating dark adaptation in the whole population were 0.8% and 0.7%, respectively. The prevalences were higher among supplemented children. There was no difference in the prevalence of conjunctival xerosis between supplemented (2%) and non-supplemented (2.1%) children. The prevalence of Bitot's spots among supplemented children was higher than non-supplemented children (1.3% vs 0.3% respectively). In the last SMI, bitot's spots were detected only in supplemented children (0.8%).

The incidence of diarrhoea, and cough and cold during the past 2 weeks was higher among supplemented children. Among supplemented children, the incidence of both diarrhoea and cough and cold increased, though not significantly, with increase in duration between supplementation and the current survey. School absenteeism during the 1st term of 2001 was significantly higher among supplemented children as compared to non-supplemented children.

Thirty percent of children were underweight and the prevalences of wasting and stunting were 18% and 16%, respectively. The prevalence of adverse nutritional status was higher among supplemented children as compared to non-supplemented children, the difference being significant only for stunting ($p=0.011$).

The food frequency survey revealed that Vitamin A deficiency is not likely to be a public health problem among school children in the area although the frequency of consumption of Vitamin A rich food of animal origin is lower among children supplemented with Vitamin A.

There was no impact on morbidity (eye signs and symptoms, incidence of diarrhoea and cough and cold 2 weeks prior to the survey) and nutritional status of school children of Vitamin A supplementation with 100,000 IU in Years 1 and 4 within 18 months of supplementation. It is possible that any impact that may have been present may have been masked by the differences between the 2 groups of children in other variables. Further studies are necessary to determine if supplementation with 100,000 IU of Vitamin A is, in fact, beneficial. It is recommended that all targeted children should be provided with Vitamin A supplementation, and proper health education be provided to parents and children.