

ABSTRACT

Adolescence (10-18 years) is the period between childhood and adult life. Nutrition during this age is important so that the adolescents can reach adult life with optimal nutrition and health status. Undernutrition is a persistent problem in this age group. Despite nutritious food being served to the school children under Mid Day Meal (MDM) programme, the prevalence of undernutrition is still high. Gaps in the nutrient intakes and hygiene practices can be addressed by providing Nutrition Health Education (NHE) to adolescents in school setting. It may directly contribute to their growth and nutritional status.

Present study was planned with the objective to evaluate the functioning of MDM programme and to assess the impact of NHE on the growth, hemoglobin status, morbidity profile, cognitive score, Physical Work Capacity, Practices and perceptions regarding MDM, sanitation and hygiene, dietary intake and MDM compliance of moderate and severely thin upper primary school children in Rural Industrial area of Vadodara.

The study was carried out in government primary schools of rural block of petrochemicals area of Vadodara. The study was divided into two phases. First phase consisted of looking at the implementation of MDM in the study area. Implementation of MDM at school level, functioning of centralised kitchen and quality of MDM were studied in this phase. Results of this phase revealed that prevalence of underweight, stunting, and thinness among children was 66.1%, 38.4% and 55.7% respectively. Most (93%) of the children consumed MDM with nearly one third (70.1%) consuming MDM for 5-6 days a week. Only around two third (67.2%) children reported washing hands with soap in school and only (32.8%) of the children had clean and trimmed nails. Dietary intakes were inadequate, especially for energy, iron and calcium. MDM contributed significantly to the nutrient intake of children. However, majority of the children did not consume sufficient amount of MDM to meet the nutrient norms of MDM programme. A three item based menu was provided under MDM by the centralised kitchen. It was prepared hygienically and was safe for consumption by the children.

The second phase consisted of screening for moderate and severely thin children and impact of providing NHE to selected moderate and severely thin children. A total of 993 students studying in 5th to 8th standards were enrolled for screening from the selected schools. Anthropometric screening was carried out for all the children and they were categorized in categories of undernutrition based on WHO growth standards, 2007. In phase 2 B, Nutrition Health Education (NHE) was imparted for 60 days at different intervals. Key focus areas of NHE included healthy eating habits, importance of different nutrients, balance diet, sanitation and hygiene, importance of MDM etc. NHE was imparted through power point presentation. Reinforcement of messages was done at various points using posters placed at strategic positions in the school, sanedo (Folk song), skit, game and drawings.

The results of screening showed that 43%, 31.9% and 34% of children were underweight, stunted, and thin, respectively. Majority of the thin children were underweight (88.1%) and 41% were stunted. The overall prevalence of anemia among thin undernourished children was 49.7%. The prevalence of anemia was higher in girls (63%) among girls than boys (46.1%). Dietary intake of macro and micro nutrients was inadequate among children.

Intervention phase was a randomised trial. The impact evaluation of NHE showed that there was no significant change in the prevalence of stunting among thin children. With respect to thinness, a higher shift to normal BAZ category was reported in experimental group (13.7%) than control group (5.6%) after intervention. Higher number of children in experimental group reported that they liked the food served in MDM, post Intervention. Significant increase (5.3% to 55.4%) in number of children washing hands with soap in school was reported in experimental group vs. no change in control group (35.8% to 36.2%). Mean haemoglobin levels did not show significant change post intervention, however anemia prevalence showed 17.9% reduction in experimental group vs. increased by 5.7% in control group. This was mainly because of the shift from mild to normal category. No significant change on morbidity profile, cognitive scores and physical activity was reported. Data collected after two months washout period showed that number of children with

normal BAZ slightly decreased after washout period, but it was higher in experimental group as compared to control group post washout. Improvement in perceptions and practices on MDM, sanitation and hygiene reported after interventions were not found to be sustained post washout.

Thus, the study highlights that prevalence of undernutrition among upper primary school children is high. MDM provided through the centralised kitchen was safe to consume. Inadequate dietary intakes and inappropriate hygiene practices followed by children at schools were identified as gaps that need to be addressed. Nutrition Health Education helped in addressing the issues which can further contribute to improvement in nutritional status. Thus, NHE can be utilised in combination with food-based interventions for improving the nutritional status of children. However, reduction in the improved outcomes after washout period indicated a need of continuous Nutrition Health Education intervention.