

**Methodology:** A cross-sectional study on 220 students, selected randomly from 22 BRAC primary schools in Dhaka city, was conducted from October 1996 to February 1997 under a research programme of the JEXCA Community Hospital and was funded by the Essential National Health Research, Bangladesh. Data were collected through a pre-tested partially close-ended questionnaire. Anthropometric measurement was expressed in z-score of the NCHS standard. Biochemical analysis for urinary iodine level was done in the International Centre for Control of Iodine Deficiency Disorders (ICCIDD) Lab, Institute of Nutrition and Food Science, University of Dhaka, and the results were matched with other findings.

**Results:** Forty-two percent of the male and 58% of the female students were classified in three age groups: 6-8 years (17.7%), 8-10 years (42.3%), and 10-12 years (40%). About thirty-two percent of the children were found stunted and both wasted and stunted, and 8.19% of the children were only wasted. There was a significant relationship of anaemia with angular stomatitis ( $p=0.005$ ), illness ( $p=0.005$ ), weight/age ( $p=0.04$ ) and height/age ( $p=0.05$ ). Considering -2SD as the cut-off point, the incidence of acute malnutrition (Wt./Ht.) was the highest in the 6-8-years age group, and chronic malnutrition (Ht./age) was the highest in the 10-12-year age group. Urine iodine analysis showed only 17.7% children to be suffering from iodine deficiency disorders, while 10.85% of the household salt samples showed no iodine at all. Correlations of vitamin A deficiency with illness and nutritional status were statistically significant. The school attendance of the male students was slightly higher (92.68%) compared to that of the female students (91.48%). Of the 5 city areas, 93.3% of the students in Narayanganj used tubewell water, 90% in Moghbazar used safe latrine, 25% in Jatrabari lived in good houses, and 10% in Moghbazar were engaged in different occupations. This finding will help BRAC's Non-formal Primary Education formulate appropriate socio-health interventions for the students and their families in those areas.

**Conclusion:** The nutritional status of children in the BRAC primary school in urban Dhaka was found to be lower than the NCHS standard. Vitamin deficiency disorders of the students can be corrected through promoting the school health programme.

<sup>1</sup>JEXCA Community Hospital, Mirpur, Dhaka, Bangladesh

<sup>2</sup>Essential National Health Research, Bangladesh, Mohakhali, Dhaka 1212, Bangladesh

<sup>3</sup>The World Bank, Paribagh, Dhaka 1000, Bangladesh



## Bangladesh-Australia Child Health Project: A Child-to-Child and Child-to-Parent Approach for Nutrition and Health Education

Masuda Akhtar<sup>1</sup>, KI Selim<sup>1</sup>, K Mahfuzul Huq<sup>1</sup>, MK Majumder<sup>1</sup>, SK Roy<sup>2</sup>, and M Fazlur Rahman<sup>1</sup>

**Objective:** Evaluate the Child-to-Child and Child-to-Parent approach for message communication. This approach was used by the Bangladesh-Australia Child Health (BACH) Project to disseminate health and nutrition education, with special emphasis on growth monitoring, personal hygiene, oral rehydration therapy, and immunization through scouts and guides.

**Methodology:** The approach was implemented in 25 Bangladeshi villages over a 6-year period (1986-1992). Two hundred and thirty-nine Australian Rovers and Rangers (Scouts and Guides aged 16-26 years) worked in 16 batches with 787 Bangladeshi counterparts. A joint evaluation team, comprising the Bangladeshi and Australian members, visited each BACH village in March-April 1994. The team also included one scientist from ICDDR,B. The team visited every household of the project area to assess the nutrition and health status of children and the impact of the project activities. The parents were interviewed, and each child aged less than five years was measured and weighed.

**Results:** The growth of children as measured by height and weight showed that the vast majority of the values fell within the 2 SD (standard deviation) of the mean. In respect of measuring the nutritional status by mid-upper arm

circumference (MUAC), 8% of the male children and 13% of the female children were found to be malnourished. The infant mortality rate was found below 30/thousand livebirths. The result also showed a significant coverage in immunization (95%), the use of sanitary latrines, and other aspects of sanitation. Low-cost measures were taken for the implementation of the programme. The Australian rovers and rangers came on their own expenses. On an average, US\$ 3,000 were spent for an average of 400 families in each village. The immediate cost appeared one dollar per person.

**Conclusion:** The Child-to-Child and Child-to-Parent approach for health and nutrition education was found to be attractive and effective. The programme was found to be sustainable, cost-effective, and replicable without using any extra manpower. Behavioural changes in respect of nutrition and health are possible through scouts and guides.

<sup>1</sup>Bangladesh Scouts, 70/1 Inner Circular Road, Kakrail, Dhaka 1217, Bangladesh

<sup>2</sup>International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), GPO Box 128, Dhaka 1000, Bangladesh



## Home-gardening Approach to Reduce Micronutrient Malnutrition of the Rural Population in Bangladesh

M Eshaque Ali and MA Mannan

**Objective:** Evaluate the home-gardening approach for better intake of vegetables to reduce current micronutrient malnutrition of the rural population in Bangladesh.

**Methodology:** Two thousand two hundred five participatory farm families (PFFs) were selected from 35 rural areas of Bangladesh during the three-year project period. Every year, 735 PFF were identified and organized into a group of 21 farmers headed by a Lead Farmer (LF). A benchmark survey was conducted using a structured questionnaire. Six administrative units and six unit officers were responsible for implementation, supervision, and monitoring of the activities of the units. The PFFs were trained on production, processing and preservation of seasonal vegetables, and also on health and other nutritional aspects. The family members were about 6, and the homestead garden size was about 6m/6m. The inputs included seed, seedling, fertilizer, fencing support, spade, and others, particularly educational materials. The yearly progress of production and consumption of vegetables was recorded and analyzed using a computer software.

**Results:** The monthly PFF's average production and consumption of vegetables in three consecutive years were: 65 kg (SD 40) and 58 kg (SD 18), 73 kg (SD 66) and 62 kg (SD 16), and 63 kg (SD 19) and 61 kg (SD 23) respectively. The average daily vegetable availability at the home level was about 347 g/person (national average is about 125-150 g), and on edible portion, it was about 266 g/person. The PFF's awareness was created through imparting health and nutrition education. The training impact on vegetable processing was found to be 2.1 and 6.6 grade (of 10) respectively during pre- and post-training. The percent impact of seed and seedling production by the PFF at the pre-project ending was 5.5 (SD 2) and 23.4 (SD 11), 4.6 (SD 1.5) and 24.3 (SD 9.8), and 5.7 (SD 1) and 30.8 (SD 9) during 1st year groups, 2nd year groups, and 3rd year groups respectively. Qualitative assessment showed that some behavioural changes were found among the PFFs.

**Conclusion:** The consumption of vegetables increased among the beneficiaries, even more than that of the national level. This has an effect on deteriorating micronutrient deficiency syndrome and on the reducing micronutrient malnutrition of the rural people. This increased consumption of vegetables was due to awareness of better health and nutrition knowledge among the targeted PFFs. These activities are being sustained in most project areas, and are recommended for replication.

Bangladesh National Nutrition Council, 19/1, Rasulbagh, Mohakhali, Dhaka 1212, Bangladesh