

The following .pdf file contains a poster displayed at the 2003 INACG Symposium: Integrating Programs to Move Iron Deficiency and Anemia Control Forward, Marrakech, Morocco, 6 February 2003.

The 2003 INACG Symposium was co-hosted by INACG and the Local Organizing Committee of the Moroccan Ministry of Health and representatives of the United Nations technical Agencies, the private sector, multilateral agencies, and nongovernmental organizations in Morocco.

Funding was provided from the Micronutrient Global Leadership project of the Office of Health, Infectious Disease and Nutrition Bureau for Global Health, U.S. Agency for International Development. The International Life Sciences Institute Research Foundation's Human Nutrition Institute serves as the INACG Secretariat.

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Home-Based Diversified Complementary Foods as a Means to Address Anemia and Growth Faltering in a Developing Country



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ABSTRACT

An intervention trial was conducted to test the hypothesis that infants receiving home-based complementary food do not have a higher incidence of anemia and infection (primary outcome) and growth failure (secondary outcome) than infants put on culture dependant traditional complementary feeding practices.

This study was conducted in a rural setting to evaluate the acceptance of different (8 varieties) home based complementary foods among infants aged 4 to 6 months for a period of 180 days. They were divided into cases (n=69) and controls (n=46). The cases were placed in 3 groups, each being supervised by a community field worker and a supervisor.

On average the foods ensured 145 kcal/100ml. All the three groups initially received two basic mixes alternately for two weeks followed by two multi-mixes which were different in each group. Four recipes were found to be very well accepted by the infants. Uniform increase in weight and height was observed in all the three groups. Compared to that of controls, the percent increment in the study group for weight was 9.3 (p<0.001) and for height it was 2.1 (p<0.08). Growth faltering was not seen in infants receiving diversified food. Clinically they were found not to be anemic and there was evidence of fewer infections.

Complementary foods offer an affordable opportunity to provide a diet which is not only acceptable to the infants but also at the same time provides adequate growth and prevents anemia too if iron rich foods are included in the mixes.



Locally available complementary foods, practical demonstration and the beneficiaries.



INTRODUCTION

Current anemia surveys in Bangladesh show that the prevalence of anemia in the pre-school aged children continues to be a public health problem. Unacceptable complementary feeding practices in infants have been blamed as predisposing factors leading to concomitant infections, anemia and growth faltering.

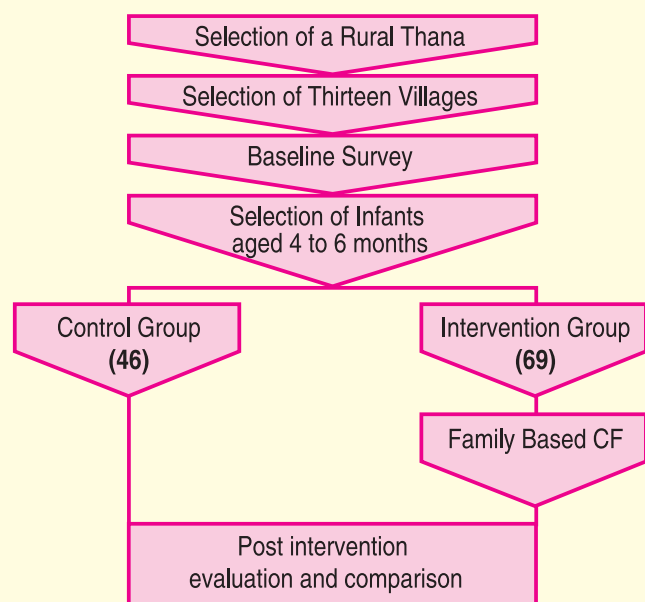
Although in a developing country like Bangladesh, the energy requirement at this age could be less than that in the developed countries, yet the issue of a balanced nutrient supply remains critical. This supply can be ensured only if one has the proper knowledge about the quality and quantity of the food that needs to be introduced. Nutrition education on complementary feeding practices for women particularly the lactating ones, creating awareness about the nutritional requirement of her child and practical demonstration of the whole process including timely introduction of safe family-based complementary foods are of utmost importance for the promotion of better feeding practices thus leading to a better health of the young infants.

OBJECTIVES

To prepare and assess the acceptance of different varieties of locally available, home based complementary foods. It was also envisaged to compare changes in growth with the introduction of appropriate complementary foods.

METHODOLOGY

Flow chart for the design of the study



Food items used in the different recipes

Basic Mix1: Rice, Lentil	Basic Mix2: Potato, Lentil
Multi mix1A: Rice, Lentil, Tomato, Oil.	Multi mix2A: Rice, Fish, Green leafy vegetable, Oil.
Multi mix1B: Rice, Green leafy vegetable, Lentil, Oil.	Multi mix2B: Rice, Green leafy vegetable, Ground nut, Sugar, Oil.
Multi mix3A: Rice powder, Egg, Potato, Green leafy vegetable, Oil.	Multi mix3B: Rice, Fish, Green leafy vegetable, Sugar, Oil.

RESULTS

Out of eight different homemade complementary food recipes prepared with locally available seasonal food items, four recipes were found to be very well accepted by the infants (1 basic mix and 3 multi mixes).

After completion of intervention, uniform increase in both weight and height were observed. Compared to that of controls, the percentage increase in the intervention group for weight was 9.3 (p<0.001) and for height it was 2.1 (p<0.08). Growth faltering was not seen in infants receiving diversified homemade complementary food. Clinically they were not found to be anemic and fewer infections were observed.

After intervention the weight gradually started to rise between the 4th and 5th month of intervention. In the 4th month, the increment was 1 kg, increasing to 1.5 kg in the 5th month.

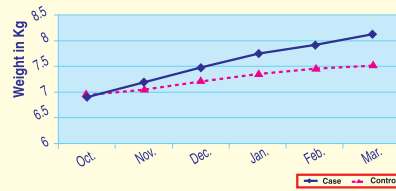
At the beginning of the study, the mean height in the cases was slightly lower than in the control. At the end of three months, there was a cross over in the height gain in the intervention group, which continued till the end of the study. There was a total increase in length of 2.5cm.

At the end of the study, when nutritional status was assessed by Z-Score (Percent), there were a larger number of infants in the control group below <-2.00 SD.

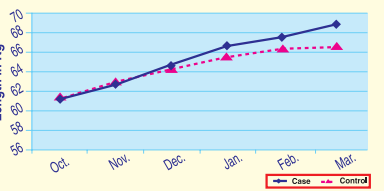
Change in Nutritional Status after Intervention with CF

Indicators	Case ≤ -2.00 SD	Control ≤ -2.00 SD
Height-for-age	13.0	43.5
Weight-for-height	1.4	4.3
Weight-for-age	15.9	30.4

Mean Monthly Increment of Weight in Cases and Controls

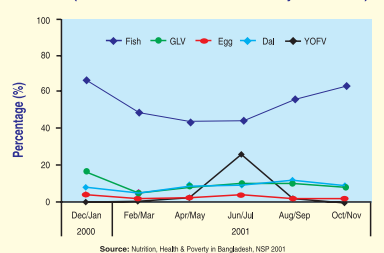


Mean Monthly Increment of Length in Cases and Controls



After intervention, 13% and 43.5% infants of cases and controls respectively were found to be stunted and 15.9% of cases and 30.4% of controls were seen to be underweight. More than 4% in the control group were wasted compared to only 1.4% amongst the cases.

Dietary diversity in rural Bangladesh, 2000-1 (% HHs that consumed food ≥4 days in last wk)



CONCLUSION

Complementary foods in the early months of life plays a crucial role for the healthy growth of a child. However, its acceptance by the infant depends on several factors including its variety, color, taste, consistency etc. On the basis of this study it can be concluded that by careful and timely introduction of complementary foods, improvement in growth is possible even where poor socio-economic and environmental conditions prevail. Even by taking advantage of cultural preferences, like fish being used in this study, it was possible to develop appropriate complementary foods which was not only home based but also cost-effective.

ACKNOWLEDGEMENT

We gratefully acknowledge World Health Organization for their financial support in conducting this project.

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