CHAPTER IV

SUMMARY

CHAPTER IV

SUMMARY

The present investigations were concerned with an assessment of the physical, clinical, biochemical status of boys aged 7-12 years belonging to different socio-economic groups and the extent to which the nutritional status of the undernourished children can be improved by a school lunch. The groups studied for comparative purposes included 60 subjects in Raipura, a very backward village, 30 subjects in Bhaili, a semiurbanized and more prosperous village and 21 subjects belonging to upper class in Baroda. 44 of the boys in Raipura were given a balanced school lunch for a period of five months and studies were made of the effects of the same on their physical, clinical, biochemical and psychological status. The school lunch was designed to correct the basic deficiencies in the home diet of protein, vitamin, calcium and riboflavine by increasing pulse intake, by including leafy vegetables regularly and by using procedures such as sprouting and fermentation.

The diets of the subjects in Raipura did not include enough of other foods of animal origin such as milk, eggs, fish and meat or cheaply available food such as leafy

vegetables. Their diets were therefore deficient in nutrients such as protein, calcium, riboflavine and vitamin A. On the basis of recommended allowances the diet of the upper class boys seemed reasonably adequate. The diets of the subjects in Bhaili were found to be better than those of boys in Raipura but not as good as those of the upper class boys in Baroda.

The difference in dietary intake was reflected in physical stature as measured by height, weight and weight per unit height.

The boys in the former two groups were found to show widespread incidence of clinical deficiency with regard to protein, riboflavine, vitamin A and calories. The incidence was somewhat less in Bhaili. Most of the upper class subjects were free from deficiency symptoms.

Most of the boys in Raipura (85%) were found to suffer from severe hookworm infestation. The proportion was less in Bhaili (23%). No hookworm infestation was found in the upper class subjects but roundworms were found in a few subjects(15%). Better sanitary conditions in Baroda combined with better nutritional status may be responsible for the freedom of the Baroda group.

The composition of blood, serum and urine also showed superior biochemical status of the upper class boys as compared to those in Raipura and Bhaili.

The poor dietary intake resulting partly from poverty and partly from ignorance combined with poor environmental sanitation was found to affect the nutritional status of boys belonging to the low income group.

Supplementation with a school lunch for a period of five months did not show any appreciable improvement in height or weight in the fed children as compared to the controls, but there was a significant improvement in clinical and biochemical status. Symptoms of vitamin A and riboflavine deficiencies had cleared in most of the subjects, but their continued presence in some suggests the need for increasing leafy vegetable intake to about 50-60 g. No differences were found between those who were dewormed at start and those not treated, probably because of reinfection in most cases. Similarly, the improvement was the same whether the ratio of cereals and pulses in the lunch was 8:1 or 4:1 in contrast to animal studies which do show a difference between the two.

The results underscore the wide gap between the lower and upper classes with regard to physical, clinical and biochemical status and suggest that the former can catch up with the latter if given a balanced school lunch which need not be expensive and which can be based on the locally available resources.