

## CASE STUDY RESPONSES

### An extremely cynical study

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The post-independence years of the 1950s and 60s were crucial for nutrition scientists in India. A hundred questions required answers and scientists had to resolve them in the shortest time possible, especially after the death toll in the Bengal famine during the second world war.

The capability or neutrality of the scientists was not in any doubt as many in the nation looked up to them for answers to the questions of massive hunger and under nutrition, and for help to steer a newly independent and impoverished country. Led by Jawaharlal Nehru, a liberal India was eager to modernise. In such a milieu, scientists had moral authority and did not have to worry about ethics. Their apparent scientific rigour erased class and caste affiliations and hierarchies. The country was indebted to them and waited for a vision of the future India to unfold. Nobody questioned their sincerity as they searched for "cost effective" solutions for the masses.

Underlying this was a belief that the poor could not lay claims to a quality of life that was similar to the one enjoyed by the elite. The right to food for the starving and undernourished was not obvious or taken for granted. Interventions even in the core areas of food and health had to be researched (sanitised) and solutions had to be cost effective. How else does one explain the important agenda of finding vegetarian substitutes for milk for undernourished children? In a country where milk is valued and desired as the ideal food for children, studies were initiated to find vegetarian substitutes for milk for undernourished children (1, 2). Seeking least cost solutions in fact is said to have enhanced scientific rigour. It is therefore not surprising that the theme of cost effectiveness underlines the planning of all national nutrition programmes like the Integrated Child Development Scheme, iron folate, salt iodisation debates and multinational profit, etc.

The study in question is one such attempt, where scientists needed to research the role of ill health, nutrition and health care separately, and the interaction of these components. It is a different matter that the poor were never consulted nor did the scientists have a tool to measure well being after the intervention. The objective of the study was to examine the synergism between malnutrition and infection and its usefulness for practical policy and programmes for improving children's health. In short, this was one of the many experiments

to discover a cost effective means to nutritional rehabilitation.

The role of nutrition in the rehabilitation of kwashiorkor and marasmus (severe forms of malnutrition) had been established as far back as 1956 (1, 3). It had also been recognised that "...Indeed the growth failure observed in these cases may actually be a means of adaptation of the organism (sic) to protein inadequacy" and that "the superimposition of an acute infective episode is probably necessary to tip the children into the florid state of kwashiorkor, etc." The authors further state that "...severe malnutrition decreases often after the ages of 3-5 because children develop greater immunity to infections of the lung and the gastrointestinal tract." This clearly explains the impact of infection on undernutrition.

By the 1960s the relationship between nutrition and infection was well established. In a review by Srikantia (2), the false negative Mantoux reaction in undernourished children reported by Jayalakshmi and Gopalan (4) in children with radiological evidence of TB was discussed. The fact that the test became positive following successful feeding was a pointer to the role of food. It is known that a Mantoux test in undernourished children can be negative because the production of antibodies is suppressed. (Poor nutrition obviously suppressed immunity.) The study conclusively showed the relationship of protein calorie malnutrition and depressed antibody production (effect of nutrition on infection).

The rehabilitation and treatment of children with severe under nutrition at the hospital and the community level, and their response to feeding had been extensively reviewed (5, 2). The refrain was that under nutrition increased susceptibility to infections and the onset of infection precipitated severe under nutrition. By this time the relationship of under nutrition and blindness due to vitamin A deficiency had also been established. The role of good food in preventing disease and illness was also well known (6).

So to study a community that had a high prevalence of malnutrition and common infections and place one of the clusters in a "placebo" group displays extreme cynicism. It may be argued that food distribution in every study is not feasible as it amounted to charity. Here it is important to state that if hunger was being investigated as a medical problem, the rules of medical care had to be applied. If malnutrition was a medical category, it was important to offer the best-known treatment to anyone diagnosed as malnourished.

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And if malnutrition was recognised as hunger then everyone should have been fed without any attempts at studying them. Therefore, the placebo group was not justified.

The impact of health care could have been investigated if necessary. Instead of the four clusters, nutrition supplementation in a cluster of villages with and without a functioning primary health centre (PHC) could have been studied. The results would have shown the role of both nutrition and health care. The functioning PHC would indicate the role of nutrition and health care and the non-functioning PHC would have provided results for only nutrition. In addition, the results could have been compared to published data in the country. Such a study would have the added advantage of allowing the knowledge of nutrition to travel instead of segregating it to clusters. The ethical problem of deciding the experimental design could thus have been overcome.

There are other ways to do the study:

**Health intervention:** Investigating the morbidity pattern or nutritional status of children around a functioning PHC and identifying the deterioration of the parameter as you go farther away from a PHC. It is known that a health facility caters to a population living within a radius of five kilometres. Control for private practitioners and local healers would have to be made. This one-point study would help in understanding the role of health care.

**Nutritional intervention:** Studying the immune function

parameters in relation to the nutritional status of children from the same socio-economic group. For example, study the levels of immunoglobulin, or cell-mediated immunity, in children with different grades of malnutrition and compare them with controls from the same community.

**Public health intervention:** Studying the morbidity patterns or nutritional status of children in an area where new drainage lines and water pipes are being laid and comparing this with data before the arrival of the facilities.

**Nutrition and health intervention:** One could take up a study area and introduce these two factors, then compare the nutritional status/morbidity levels with published data or baseline data.

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