A rich country inhabited by starving people

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Dr. B.C. Guha was an illustrious son of India. I was greatly influenced by him in the 1950s when we worked closely together in the Nutrition Advisory Committee of the ICMR. Dr. Guha helped establish biochemistry as an independent discipline in our universities. His work on the bio-synthesis of ascorbic acid and its evolutionary implications was a pioneering one. He was not a narrow specialist. His interests ranged widely and he firmly believed along with Oscar Hechter in the destiny of science — as an instrument in the service of mankind. An inspiring teacher, a scholar with penetrative vision, a man of high culture, a patriot second to none, a stormy petrel of science, B.C. Guha was deeply read in Sanskrit, Bengali and English and equally at ease with Kaldasa, Tagore and Shakespeare. I consider it a great privilege to be asked to give this lecture in his memory.

I have entitled this lecture “a rich country inhabited by starving people”, a quotation from Jawaharlal Nehru. Of course, Nehru meant a country rich in human resources and potentially rich in natural resources.

The extent of malnutrition

The extent of poverty and malnutrition in India has been recounted many times and presents a very disturbing picture. It is a matter of common knowledge that malnutrition is a major health problem in our country, acting as one of the major impediments to development. Malnutrition and infectious disease interact synergistically producing deleterious life situations. Infant and child mortality rates are high. There is a high degree of prevalence of preventable illnesses and early deaths. A third of all deaths that occur in our country are among children below the age of 4 years. It is the young and the poor that
suffer most from the effects of malnutrition and underdevelopment.

Forms of human malnutrition

Of the various forms of malnutrition, protein energy malnutrition in young growing children constitutes the biggest problem as well as most intractable one. Between 2 - 4 per cent of children below the age of five living in rural areas suffer from severe forms of protein energy malnutrition. Nearly 60 per cent of children under 5 suffer from mild to moderate degrees of malnutrition as judged by growth failure. It can be stated with some degree of confidence that the genetic potential for growth of Indian children is no different from that of children in developed countries. Therefore, the bulk of growth failure in Indian children is largely due to malnutrition associated with intercurrent infections.

Nutritional anemia is widespread throughout the country. 30 - 40 per cent of pregnant women and preschool children show a significant degree of anemia. This condition contributes significantly to a high maternal mortality rate in our country, which is one of highest in the world.

Nutritional blindness in the form of keratomalacia due to deficiency of vitamin A in children below the age of 5 years is entirely preventable but continues to occur. Estimates vary between 15,000 to 40,000 fresh cases of such blindness occurring every year in the country.

India is one of the most severely endemic areas for the occurrence of goitre. It is present all along the sub-Himalayan belt and several new foci of endemic goitre have been discovered in recent years in a number of places in the country. Severe endemic goitre is associated with increased prevalence of developmental abnormalities in the form of cretinism and deaf-mutism.

Nutritional interventions

What is striking about all these nutritional disorders is that we have enough knowledge about them to be able to control them. There is a hiatus between advances in science and technology on the one hand and fulfilment of human needs on the other, so much so that what is known still cannot be applied. Endemic goitre is the easiest and cheapest of all diseases to prevent. No more new knowledge is required. The technology is available. The provision of iodated salt so as to ensure a regular intake of as small a quantity as 100 µg of iodine every day will eliminate endemic goitre. The injection of iodised oil to pregnant women will wipe out deaf-mutism and cretinism. Iodised oil can be given by mouth and is equally effective.

Likewise nutritional blindness can be controlled. Vitamin A has been synthesized long ago and is cheap. Massive dosing with vitamin A once in every six months is a useful approach for controlling nutritional blindness but progressive drop-outs with successive dosing and other factors are seriously limiting the usefulness of the programme.

The control of nutritional anemia requires the daily administration of one of the cheapest of drugs, ferrous sulphate, and yet the whole programme is not making much impact.

Undoubtedly the control of protein energy malnutrition is the most complex