The Madurai Experience in Preventing Nutritional Blindness

At the beginning of this century the most common cause of blindness of children in the neonatal period was ophthalmia neonatorum. This was prevented by use of silver nitrate drops in the early years and later by the use of antibiotic drops. The next important cause of blindness in children under 5 years is keratomalacia. The National Institute of Nutrition at Hyderabad studied the extent of vitamin A deficiency. Almost 5 to 10% of children belonging to poor income groups suffered from vitamin A deficiency. Specific epidemiological studies have not been made to find out the number of children going blind every year due to keratomalacia. The ICMR study made in 1973-75 for estimating the number of blind in India revealed that 2% of the 9 million blind were caused by keratomalacia. Subsequently, Dr. P.M. Shah made an estimate that nearly 45,000 children go totally blind each year in India. To prevent blindness in children due to keratomalacia, the Government of India has started a programme to give vitamin A once in 6 months to children under the age of 5 years in the southern and eastern states of India.

In several hospitals keratomalacia was diagnosed as bacterial ulcers and treated without realising its relationship with malnutrition. Now with the increase in awareness of the problem it is diagnosed in most parts of India and in most of the urban slums.

The child suffering from keratomalacia comes from a family with poor socio-economic status from rural or urban slums. Mortality among these children is very high. Nearly 50% of them die. Many children are seen at the hospital at a stage when the eye has become phthisical or staphylomatous. Most of the children joining the blind schools in different parts of the country are commonly found to be blinded by keratomalacia. So today keratomalacia is the top cause of blindness of children under five in India.

Doctors know the cause of malnutrition and the ways of correcting it. They are also familiar with the problem of diarrhea or prevention of respiratory infections. But to prevent these in the community, especially in rural areas and tribal parts of the country, it is essential to teach the illiterate mothers methods of preventing malnutrition and disease. For this, the Nutrition Rehabilitation Centre was started in 1971 inside the campus of the Government Rajaji Hospital, Madurai. This is a teaching hospital and it has a fairly big department of Pediatrics and Ophthalmology. Children with keratomalacia or corneal xerosis are referred to the Nutrition Rehabilitation Centre from these departments. The quarters used by the lowest grade servants of the hospital were given to this Nutrition Rehabilitation Centre, and it looked like a village or urban slum area. Running water, clean toilets and clean environment were provided.

In the Nutrition Rehabilitation Centre
there were nutrition workers, medical officers, health educators etc. The whole stress was on demonstrating how simple selected foodstuffs could improve the nutritional status of the children. The mothers were involved in the kitchen work and feeding. The children were fed five times a day with cheap locally available nutritious foods. The children began to put on weight. The kwashiorkor children lost water and the edema decreases. There was active communication between mothers, health workers and nutritionists. All of them lived in the same place and there was useful exchange between mothers who had come earlier and those who joined the programme later.

The children were taken to the respective outpatient clinics (pediatric and ophthalmology) to treat medical problems like diarrhea, fever, respiratory infections, ulcer of cornea, etc. Children who had no corneal xerosis or keratomalacia were not given concentrated vitamin A but given only green leafy vegetables and papaya. Children who had corneal lesions were given vitamin A 200,000 IU to start with and repeated on the third day. A kitchen garden was established and the mothers took great interest in growing green leafy vegetables. Papaya and drumstick trees were grown in the same area. Though the Centre was inside the campus of the hospital, it had its own enclosure and there were no patients of the hospital coming inside this compound. If there was any emergency, the child would be taken to the ward adjoining the centre. The stress was on giving foods commonly available and cheap. It was all vegetarian food. No milk or eggs were given to these children. The whole idea was to train the mothers to learn better methods of feeding the child and taking care of the child when discharged from the Centre. The mothers were advised to bring the children after discharge regularly once a month. Most of the mothers had learnt to use the nutritious green leafy vegetables, rice, dhal and other foods. In some cases there was an objection from the mother-in-law or other family members. A good follow-up was maintained by the staff visiting these children regularly for 6 months or a year. As the Centre was inside the hospital it was easy for house-surgeons, pediatric post-graduates and nurses to be trained in proper feeding of the children suffering from malnutrition. This Centre was recognized as the apex centre for training different health workers involved in the nutrition programmes earlier, and later in programmes like ICDS or Tamilnadu Integrated Nutrition Programme.

With the experience gained in the Nutrition Rehabilitation Centre with the support of associations such as the Royal Commonwealth Society for the Blind and the State Government, child care centres were started in villages in three community blocks. Child care workers were trained from the educated women in that area. The training was given mainly at the Nutrition Rehabilitation Centre, in the skills of identifying malnutrition and common children's diseases and managing both of them. These child care workers were regularly guided and supervised by community health nurses and doctors.

The assistance of the mothers in the village was sought from the beginning. They were asked to help in cooking and feeding these children. Community participation was an essential part of this programme. All the children in the villages were screened and weighed. The children in grade III or IV malnutrition were given one meal and one snack in the child care