Growth Charts for Promoting Child Nutrition:

Experiences and Reflections

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Project

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its philosophy that d a measure of de- as adopted an in- ombining agricul- y, vocational train- nes, adult educa- pment relief and health care. A d support system with the services cially trained mul- f grassroot level workers. Community participation is facilitated by the organisation of several village level decision-making groups.

Nutrition Intervention Activities

Nutrition intervention is an integral part of RUHSA's primary health care programme which gives emphasis to maternal and child health and communicable disease control through preventive services, low-cost curative care and health education. The activities in nutrition intervention are described below.

Nutrition education: Under the Special Nutrition Education Programme, a structured one month training is conducted at the village level by a nutrition team. Twenty to 30 women are enrolled in each batch with preference given to women from poor families, expectant mothers, mothers with children under two years and mothers with malnourished children. They are paid two rupees per day as part-compensation for lost wages. The training is designed to develop the knowledge, attitudes and skills of mothers in relation to child-feeding, weaning and other health practices. Various educational strategies are used with emphasis on participatory group techniques, such as role play, group discussions and demonstrations.

Animators of Adult Education Programmes were specially trained at RUHSA to undertake nutrition education of men and women. All Village Health Workers in the Project, numbering nearly 100, had been trained in nutrition education. The trainees were routinely and regularly assessed to ensure a high level of competence. Nutrition education is integrated with the Adult Education Programme of RUHSA for both men and women. In addition, individual education to mothers is given at the home levels, by health workers during home visits.

Growth monitoring: Growth monitoring was introduced as part of the Under-Two programme of RUHSA in which all children are registered soon after birth and followed up intensively for two years to ensure immunisation coverage, treatment of illnesses and maintenance of nutrition. Every child is issued a family-retained health record (VHAI 0-6 Child Health Record) with a duplicate kept at the sub-centre. A Salter hanging weighing scale is provided at the sub-centre (coverage of population of 5,000-7,000) where all weighing is done. A literate, female health aide is trained to weigh, record and interpret the information and give nutrition advice to mothers. Village level health workers motivate mothers to attend the clinics regularly for weighing.

Nutrition rehabilitation: The nutrition rehabilitation programme in RUHSA is home-based; children with "second" and "third" degree malnutrition are given free food supplements prepared from locally available ingredients. Seven packets of the food mix are given *once* every week to last for seven days in the week. This is continued for six to 12 months. These children are followed up intensively by regular monthly weighing until normal weight is reached.

Nutrition supplementation: Vitamin A concentrate and paediatric Folifer (iron with folic acid) are distributed to all children under two years once every six months.

There are several other activities of RUHSA that are expected to indirectly affect the nutritional status of children viz. immunisation against measles, tuberculosis, diphtheria, pertussis, tetanus and poliomyelitis; the kitchen-garden scheme which enables mothers to grow vegetables in their own backyards; poultry and dairy schemes that make milk and eggs easily available to mothers; vocational training and various income generating schemes that attempt to augment the income of women and the family in general; and the womens' organisations and development programmes which attempt to enhance the status of women and to facilitate their greater participation in family and community decision-making.

Evaluation of nutrition intervention: A mid-course evaluation of the RUHSA programme was conducted in 1983; it included a series of studies commissioned by a specially appointed Evaluation Sub-Committee. Data from several of these studies have been consolidated to review various aspects of nutrition intervention including growth-

monitoring (*Report of the Mid-course Evaluation of RUHSA – 1983).*

The use of growth charts was evaluated by reviewing the health records of 11,070 children born between 1977 and 1981 and registered in the Under-Two programme of RUHSA during the period 1977-1982.

Anthropometric surveys in K.V. Kuppam Block in 1978 and 1983 and in a neighbouring control block in 1982 provided data for the evaluation of the impact of the RUHSA project on the nutritional status of children.

Besides the above, a small community-based study was conducted in which 47 mothers in one village were interviewed regarding their perceptions and use of the growth charts of their children.

Use of growth charts — practical problems: The RUHSA project has been unsuccessful in implementing regular growth-monitoring of children using growth charts as revealed by the analysis of 11,070 child health records; it was found that during the first two years of life, 55 percent of children attended the clinic at the sub-centre less than five times; 35 percent between five and 10 times and only 10 percent more than 10 times. Only 48 percent of children had been weighed at least twice during their first two years of life. This failure may be due to the clinic-based strategy of growth-monitoring; factors of distance, time, cost and the traditional beliefs related to the 'evil eye' could discourage people from attending the clinics regularly for weighing.

The alternative approach of home or village-based weighing was considered by the RUHSA team to be equally impractical mainly because of the high (unaffordable) cost of providing a weighing scale for every village and replacing it every five years. Other factors to be considered were (i) the difficulty in training illiterate health workers to understand, accept and use growth charts appropriately, (ii) the drain on the limited time of health workers with consequent diversion from other (more important) activities such as education and (iii) the traditional beliefs in the community that may prevent people from allowing their children to be weighed even if facilities are made available nearby.

Do growth charts help in promoting child nutrition?: The RUHSA programme has achieved a remarkable improvement in child nutrition status in K.V. Kuppam Block in spite of children *not* being weighed and monitored regularly. Over a period of five years from 1978 to 1983, the percentage of severely malnourished children (arm circumference less than 12.5 cm.) declined from 22 percent to 7 percent and the percentage of normal children (arm circumference more than 13.5 cm.) had increased from 43 percent to 64 percent.

Table: Nutrition Profile Before and After 'Intervention'

Year	Severe undernutrition	Mild undernutrition	Normal
1978	22%	35%	43%
1982	7%	29%	64%

Using height and weight measurements, it was found that in 1983 the percentage of wasted (wasting being defined as weight less than two standard deviations below the mean weight for height) children in the two to four years age group was 17 percent in K.V. Kuppam Block and 22 percent in a neighbouring control block; the percentages of normal children were 33 percent and 23 percent respectively in K.V. Kuppam block and the control block.

Out of 41 children in the age group two to four years whose mothers had undergone the Special Nutrition Education Programme in K.V. Kuppam block, only six (14 percent) were wasted and 20 (47 percent) were normal.

We conclude that this achievement is attributable to the integrated approach to nutrition intervention with emphasis on *education of mothers*. Quite clearly, the role of growth monitoring in bringing about this improvement was minimal.

Is the growth chart an effective educational tool?: The RUHSA project has been unsuccessful in educating mothers about growth charts; in the study on mothers' perceptions it was found that only seven of 47 (15 percent) mothers who were intensively investigated specifically for their perceptions and use of growth charts were able to explain the use of growth charts, and these were literate women; only two (five percent) mothers actually used their health cards for getting their children weighed, whereas 32 (68 percent) mothers stated that they used the cards only when taking their children to the clinic for immunisation and illness care. Clearly growth-monitoring was not being perceived or used as a means of achieving nutritional improvement.

However, nutrition education of mothers with respect to aspects other than growth-monitoring, such as child-rearing and feeding, has been successful in the Special Nutrition Education Programme as indicated by the fact that mothers who had undergone this training were able to improve the nutritional status of their children to a remarkable extent.

The RUHSA experience suggests that the growth chart has limited use as an educational tool in nutrition education. Teaching the mother individually in a busy clinic using her child's growth chart is not as effective as structured group techniques of education in which a variety of participatory training methods are used in order to bring about better child-rearing or feeding or health promotion. Moreover, educating should be considered as a preventive or promotive strategy and not as a 'treatment' prescribed at the point of 'diagnosing' growth faltering. The strategy of targeting educational programmes to both men and women in the entire community and not only to mothers whose children were showing growth-faltering, appeared to be the really sound one. Apparently also, the strategy of using the scarce time available for interaction with the mothers to educate them *directly* on the appropriate practical ways of rearing and feeding their children appeared to be far more effective than the strategy of using that time to teach them the significance of weight measurements and growth charts.

Cross-section community surveys versus individual growth-monitoring in evaluation of impact of nutrition intervention: Cross-sectional anthropometric surveys of sample population were found to be the best method for collecting reliable and valid data for the purpose of evaluation of impact of nutrition intervention. These surveys, unlike individual growth-monitoring, provided results quickly, were far less expensive and standardisation of data could be achieved by intensive training of a small team of workers.

On the other hand, it is very difficult to use growth charts as the source of data for measuring the proportion of malnourished children in a community. Firstly, a sample of growth charts may not be representative of the community as a whole. Secondly, weighing may have been irregular with the result that there is no uniformity of data for a particular point of time or for a particular

age. Thirdly, the accuracy of data may vary with the capability of different workers. Finally, the cost of maintaining growth charts is very high when compared with the cost of conducting periodic sample surveys.

It is suggested that within the context of community-based nutrition programmes, community monitoring of childhood nutrition is relevant and far more important than individual growth-monitoring and that cross-sectional surveys are of greater use than growth charts for this purpose.

Concluding comments: It was clear from the evaluation study that growth-monitoring made no significant contribution to the remarkable nutritional improvement in the children achieved in the Project. Thus, as was pointed out earlier, only 10 percent of all children had their weights recorded on at least 10 occasions in the entire period of two years. Even these 10 occasions were probably not evenly spaced out, since many of these children did not come to the clinic for growth-monitoring but had been weighed when they presented themselves at the clinic for treatment of some illnesses; and for this reason the weighing would have been clustered in time and by no means regular. The substantial decline in "severe malnutrition" as judged from arm circumference data, from 22 percent to seven percent in under-five children can surely not be attributed to such infrequent weighings in such a small proportion of the child population. An overwhelming majority of children who showed substantial nutritional improvement were those who did not submit to regular growth-monitoring.

Of all the inputs provided by RUHSA, health-nutrition education was the one that presumably had the widest coverage apart from immunisation. This was also the input that was special to the project being far better structured, intensive and purposive than the "so-called" education programmes offered in the control blocks which did not register such nutritional improvement. The integrated approach of the RUHSA with predominant emphasis on health / nutrition education appears to be the key factor which determined the success of the programme. Nutritional improvement occurred not only in the "severely malnourished" group which received nutrition supplements but also in the "mildly malnourished" group which received no

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REVIEWS AND COMMENTS

Advertisement of Commercial Weaning Foods (CWF) through Media under Government Control.

It is understood that the Government's policy regarding advertisement of CWF through media under its control (especially TV and radio) is now under active consideration. This is a question of major national importance as it impinges very considerably on the health and nutrition of millions of children in the country.

CWF have a place as one of several possible supplements to breast milk in late infancy among those who have the means to buy them in the quantities needed for adequate nutrition and the facilities to use them hygienically. On the other hand, the poor who have neither the means to afford such foods in needed quantities nor the sanitary facilities essential for their use, should not be led to believe that these foods are unique, essential, and could confer benefits which other much less expensive supplements cannot. Infants and children can be reared successfully without the use of CWF.

An intensive study of the Nutrition Foundation of India (*Scientific Report 4, Nutrition Foundation of India, 1984*) had revealed that the practice of feeding infants commercial milk foods as well as commercial cereal foods (so-called weaning), is already becoming extensive.

The NFI study showed that apart from the urban centres, even their rural environs had not escaped their impact. 22 percent to 30 percent of all infants in *the villages* around the major cities were found to be already receiving these foods, showing that this was no urban elitist phenomenon; and the practice is already spreading rapidly among the poor. A good proportion of poor families were spending more than 10 percent of their meagre income on these foods. Most of the poor were also found over-diluting the foods (for the reason that they could not afford to buy the quantities needed) and were feeding them in highly unhygienic ways. These foods were introduced in the dietaries of infants well below the age of four months and thus the duration of "exclusive breast feeding" was considerably reduced. This was reflected in a higher prevalence of diarrhoea and severe grades of undernutrition in such children than in others.

Impressive scientific evidence has now served to underscore the importance of breast milk in infant nutrition and the fact that there can in fact be no true substitute for it. It is unquestionably the best food for *all* infants — not just the poor but the rich as well; and it should be our policy to do nothing which would even remotely discourage "exclusive breast feeding" for the first four to six months and continued breast feeding thereafter for as long as possible. NFI studies show that while CWF have not (as yet) totally supplanted breast milk among poor communities, they have already established for themselves a substantial "beach head" in the dietary patterns of even the poorest infants in the rural environs of the metropolitan cities. With more energetic and aggressive promotion of CWF among them, the breast feeding practice will be progressively eroded to the detriment of child health and nutrition.

The question of advertisement of CWF through TV and radio has to be considered in this context. Today TV and radio are reaching not just the poorest slum dwellers but vast sections of the rural masses as well.

It may be argued by CWF interests that the Government has already drawn up a code for the marketing of their foods and that advertisements which they propose would be such as not to violate that code. In actual practice, this will not be an adequate safeguard. The message that will finally get across is that these foods are the ideal and unique ones for the infant; the nuances of the "provisos" and "qualifications" that may be included in the advertisement ("in small print" to satisfy the 'code' regulations) will hardly be appreciated by the poor.

The rural poor may hardly be expected to distinguish between *commercial* advertisements by private industries and government sponsored health messages, like, say, those on family-planning, when they appear over T.V. side by side. Under the circumstances, such commercial advertisements could acquire a false aura of authenticity and official approval.

It is not as if CWF do not have numerous openings for advertisements other