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Strategy for combatting nutrition problems of weaning period

by Dr K. Bagchi, Nutrition unit, World Health Organization, Geneva

Introduction

Why emphasis on weaning period?

Numerous surveys conducted in the developing countries during the last 20 years have indicated very clearly that the long process of malnutrition in children starts from the weaning and the post weaning periods. Surveys carried out to assess the incidence of protein calorie malnutrition in a large number of countries have recently been analyzed by this Organization in order to have a fairly reliable estimate on the incidence of PCM These surveys also indicate that the weaning and post weaning stages in the life of children is the most vulnerable period as far as malnutrition is concerned It is no wonder that most of the efforts in nutrition intervention are directed towards this life period. It would be worthwhile to recapitulate the salient etiological factors for the vulnerability of the weaning period:

1) Increased nutritional requirements

A newborn infant grows satisfactorily on the mother's milk provided the milk secretion is adequate. From the age of about 4 to 5 months, a healthy infant's nutritional requirements rise very rapidly, especially with reference to Calories and protein, and, as is known commonly, the nutritional needs are not satisfied by mothers milk beyond 5 or 6 months, however adequate the secretion might be. On the background of the prolonged breast feeding commonly practised in many developing countries, the importance of supplementing the mothers' milk with other food assumes great importance. In case this additional requirement is not met, as is commonly the case for various reasons to be enumerated later, the child starts sliding down the nutritional scale.

2) Increased risk of infection

With the introduction of foods from outside, the chances of infections rise rapidly. The alarming decline of breast feeding and its substitution with bottle feeding with cheap and unsatisfactory milk substitutes in the most unhygienic environment not only initiates malnutrition but also increases

the risk of gastrointestinal infections, which in the long run accentuates malnutrition process and thereby establishing a vicious cycle. In addition to this risk of aquiring infection through outside food, a growing child is prone to increased risks of infection as a result of its increased exposure to environment. With the start of his mobility - crawling and toddling - the child living in hazardous environment picks up infections of all different types. This starts the pernicious inter-action between malnutrition and infection - each accentuating the action of the other. This happens in the post-weaning period of the child usually between 1½ to 3 years of its life.

3) Superstition and ignorance related to weaning foods

The third important consideration in this connection is the impact of superstition, taboos and ignorance regarding infant and child feeding practices especially related to weaning, and prevalent in almost all parts of the developing world. The important beliefs associated with the weaning period and which are definitely detrimental, are the following:

a) Thin starchy gruel is a substitute of mothers milk

b) Solid food should be introduced in the children's diet as late as possible, preferably between 1½ to 2 years of age.

c) Vegetable foods rich in protein, like legumes, are very hard for digestion by the delicate intestine of young children and their introduction should be postponed to a very late stage.

d) With the slighest advent of any infection in the child, especially those related to gastro-intestinal tract, all foods, even the mother's milk, should be stopped and the infant or the child should be kept on thin watery gruel e.g. rice, barley or cassava gruel.

What has been done so far?

With these problems in the background, a review of the efforts made in the past will be useful before consideration of the future strategy. In view of the two basic aspects of the problem - the timing and the food - all efforts in the past were directed towards the following approaches.

a) Highlighting the importance of weaning period as the most crucial and nutritionally vulnerable period of human life.

b) Formulation and introduction of suitable weaning foods.

Importance of the weaning period has been highlighted through a number of meetings, conferences, seminars and workshops, all with the objective of emphasizing the importance of this period and justifying it as a target for intervention. As one of the outcomes of the meeting, the vital role of breast feeding in infant nutrition

received due emphasis. Most of these meetings were more of an exploratory nature for the identification of underlying factors and enumerating the possible approaches.

In the field of weaning foods, initial efforts were directed mostly towards the technological aspects of the production of weaning foods from non-conventional sources of protein like cotton seed and pearut flour. This was quite natural in view of the excellent progress made in the earlier years in production of such foods as Incaparina, Faffa and some others. In fact, in two seminars held in this region in the past, adequate emphasis was given in the production, popularisation and marketing of such processed weaning foods.

During the course of this Seminar, the participants will have the opportunity to discuss all aspects of such processed protein rich foods with Superamine as the central example.

However, in recent years, there is a growing realisation that processed weaning food production might not be very realistic in many developing countries for various reasons. Even if they are brought from outside, there will be logistic difficulties in the distribution system due to relative inaccessibility of the peripheral regions and the absence of suitable infrastructures for distribution. Commercial marketing of such products are not foreseeable in most developing countries for economic reasons. These considerations have prompted health administrators and nutritionists to focus attention on the formulation of suitable weaning foods by the combination of two or more locally available foods in order to get a suitable nutritionally rich mixture. The excellent document "Manual on Feeding of Infants and Young Children" by Y. Hofvander and M. Cameron, published by the PAG of the United Nations, gives a thorough treatment of this important area with numerous examples of weaning food mixtures. The formulation of such mixtures to be used as weaning food from locally available foods does not pose any difficulty in most areas of the developing countries, except in any extreme situations of food scarcity. With a little orientation training, all health personnel can undertake the task of educating the rural mothers in this respect.

Analysis of the existing situation

The critical food and nutrition situations in the world to-day and their dangerous repercussion on nutritional status of infants and children, mostly in the developing world, have under-scored the very great importance of weaning periods. There are evidences already in the reversal of the trend towards nutritional improvement in the developing countries. There is urgent need for having a fresh look at the total picture of the weaning problem - not in an isolated manner but with due consideration of the complex inter-play of other related factors.

A careful analysis of the present problem and the existing efforts for

its control indicate that possibly most of the past measures were directed to the problem through a single narrow approach without simultaneous consideration of other related and inter-linked factors. To cite an example, in many developing countries, weaning problem is being tackled by implementing supplementary feeding programmes. Incidentaly, most of these areas where such programmes are implemented, infections and infestations in infants and children are also widespread. What is not generally appreciated is that without simultaneous programmes for the control of infections, feeding programmes can never produce the desired results. To supply additional nutrient to a child having infection and infestation is comparable to pouring water in a leaky pot.

A little consideration would indicate that the three basic reasons for the nutritional problems during the weaning period are the following:

1) Widespread infections and infestations during this period

2) Beliefs, superstitions, taboos and ingorance regarding infant and child feeding preventing the utilisation of suitable foods even when these are available.

3) Inability of the parents to provide adequate quantity and quality of food due to poverty or non-availability of foods. This is usually aggravated by the large number of children in a family - a common characteristic in most developing countries of Asia and Latin America.

Each of the three areas has very close link with the other two with strong interaction. Direct nutrition intervention programmes can only cover a small area of the problem - even within the health sector. A total comprehensive approach would require actions in the following areas:

- Immunisation
- Maternal and child health services
- Health education and nutrition education
- Provision of cheap weaning foods
- Family Planning.

In order to evolve a simple strategy, the following points are to be taken into consideration:

1) Nutrition promotion is an objective and in most developing countries is not supported by a service with the necessary personnel.

2) Promotion of nutritional status depends not only on nutrition intervention, but also on measures which have to be simultaneously adopted through MCH services, health education activities and family planning education and services.

3) Nutrition intervention programmes, in order to be fully effective, must be delivered in the form of "package" of these allied activities and integrated with the basic health services.

4) In the present fastly deteriorating global food and nutrition situation where the developing countries are to meet the greatly inflated food import, fuel and fertiliser bills, the financial resources to be given for the health services in future will remain at the same level if not reduced. In most of these countries, the peripheral areas are dependent for health services on rather rudimentary infrastructures manned by health personnel with very limited education and training. The strategy, in most cases, should consist of relatively simple activities which can be carried out by these workers.

Health infrastructures in the developing countries are not all of the same type or level and are run by personnel of different levels of training and expertise.

Recently, the Joint WHO/UNICEF study of alternative approaches for meeting basic health needs of developing countries, identified three broad categories of health infrastructures in most developing countries. These are.

A. Health outpost with "primary health workers"

B. Health stations with professional paramedical personnel

C. Health infrastructures of the pattern of primary health center with the facilities of medically trained personnel.

Primary health worker has been described by the Joint Study Group as the most peripheral health worker with two or three years of formal school education followed by health orientation training for about three months. Experiences in several countries have shown that such workers can carry successfully most preventive work and also some simple curative work.

It is obvious that the nutrition programmes to be designed for implementation through the basic health services will vary according to the type of health infrastructures.

In making a catalogue of such activities - priority wise - not only in the field of nutrition but in other areas within the same "package", one should realise that the basic workers in the periphery, being so few in number and naturally over-loaded with preventive and curative work - can only handle a few activities and therefore very serious considerations are to be given for their selection. However, the nature and intensity of the problem will influence the selection of activities.

Recently, WHO, on the request of UNICEF, made an analysis of the existing situation and came out with a guideline for a joint WHO/UNICEF strategy for nutrition activities in the local health services. As mentioned earlier, the nutrition activities proposed, as a part of "MCH-Health Education-Family Planning" package, are considered under three stages of development of health infrastructures and the health personnel employed in such infrastructures. A brief description of the strategy is given below.

Simplest type of Health Services

In this category will belong those countries and geographical areas having the following characteristics:

a) High infant and child mortality
b) High prevalence of malnutrition and infection.
c) Poor sanitary environment.
d) Absence of organized health network and trained personnel.
e) High incidence of low birth-weight of infants.
f) High birth rates.

The following activities are proposed for this type of health services to be undertaken by the most elementary type of health personnel with a limited school education followed by a few months of health training.

Nutrition surveillance

Individual surveillance of infants and children under five years is to be done with the help of a simple growth chart on the basis of weight for age. Primary health workers with even a very low level of training will be able to undertake this responsibility and identify those children at high risk for whom suitable measures are necessary - either through education of the mother or referring for medical attention. The growth chart prepared by WHO is now being tested in several countries and would be available in 1975. Nutritional surveillance of pregnant and lactating women should also be an essential component of such work.

Reference to higher levels of health services

The primary health workers should be able to identify the following categories of cases for referring them for appropriate treatment:

a) Any child having less than 70% of body weight related to age. This can be easily done by referring to the growth chart during nutrition surveillance.

b) Any child with oedema. Usually this is a manifestation of PCM but in a small percentage of cases can be due to severe anaemia (e.g. caused by heavy hookworm infestations) or disorders of kidney. Identification of marked oedema in the dependant parts or on the face is a relatively simple task which can be picked up by any health worker.

c) Any child with eye-lesions suggestive of early xerophthalmia. This will only apply in geographical areas which have been declared by the government as high risk areas for xerophthalmia, e.g. Bangladesh, India, Indonesia, etc.

d) Identify cases of severe anaemia in mother and children by simple examination of ocular conjunctiva. This will also apply to geographical areas noted for high incidence of anaemia in mothers and children. Here also, a little training and demonstration can enable any health worker to reasonably detect marked cases for appropriate measures.

e) All cases of acute and severe diarrhea with marked dehydration.

f) Noticably under-nourished pregnant women.

g) Pregnant women with oedema or haemorrhage.

Distribution of nutrient supplements

a) Distribution of iron tablets to all pregnant women. In some geographical areas and according to policy decisions of the government, folic acid is also to be added to the iron tablet.

b) In case of severe anaemia, cases with heavy hookworm infestations and suspicious eye-lesions, the health workers should distribute tablets of iron with or without folic acid and capsules of high dosage of vitamin A (e.g 200 000 I.U.)

Nutrition and health education

Only a few topics should be selected for nutrition education of women and the primary health workers should be told clearly and in precise terms what exactly she/he has to talk on these. In general, the following four items should be subject of nutrition education:

a) Promotion and maintenance of breast feeding

b) Use of supplementary and home-made weaning foods

c) Use of locally available cheap foods to complement the cereal based adult diet.

d) Education on the relationship between the child's diet and the progress on growth charts.

In addition, the health worker should emphasize the importance of hygienic food handling, use of boiled water for infant feeding, food protection and the dangers of fly-borne diseases. These are not only of importance as nutrition promotion measures but also for the control of infectious diseases in children.

Immunisation

Immunisation against the common infectious diseases of the children (smallpox, tuberculosis, polio, measles, whooping cough and diphtheria) is of paramount importance also for MCH services and in the communicable diseases control programme. Use of vaccination calender by the primary health worker for all infants and children to be encouraged.

Since gastro-intestinal infections are the common cause of morbidity in most developing countries, the primary health workers should also be taught simple methods of oral rehydration in cases of children with chronic diarrhea and severe dehydration. Preparation of oral rehydration fluid from packed powdered electrolytes is a simple task which can be picked up by any intelligent person. In many cases, such simple measures can be a life-saver.

Family planning

Advice on the importance of birth spacing for the health of the mother and indirectly for the offspring has to be imparted to all mothers.

Activities through more advanced type of health services

Health workers of the type of medical assistants, health visitors, midwives, etc., are expected to work in such health infrastructure. With a higher level of training of the health personnel, the activities described in the previous category could be performed with a greater degree of skill with fuller comprehension of the more complex type of health problems but with the same degree of maximum coverage. For this to be achieved, the training courses, which are formal, regular courses for this type of personnel, will have to be realistic and practical in nature.

In addition to the above, the following responsibilities are also to be undertaken at these levels

1) Community surveillance

In the previous stage, nutrition surveillance consisted of individual surveillance of children through growth chart. Such monitoring of child nutrition can be improved in quality by the use of better trained personnel and as a result, early cases of malnutrition can be detected for appropriate measures. In addition, the surveillance has to be extended to community by using simple indicators which need not be only health parameters.

For example, the scarcity of staple foods in the local market over appreciable periods or their steep rise in price can be regarded as a reliable indicator for action. The use of such indicators by the health workers can serve three main purposes:

a) assess the condition in emergency situation to organize relief operation,

b) provide early weaning system for suitable advance measures,

c) to detect slow or "creeping' deterioration for organizing preventive services.

2) Identification of severe cases

In many developing countries, the outpatient clinics in the hospitals and in the health centres are run by the health workers like medical assistants, etc. Through suitable training and the use of a carefully prepared simple guideline, these personnel can easily identify severe, moderate and even early cases of malnutrition. While the severe cases will be referred for medical attention, the early and moderate cases can be managed by the following approaches·

a) nutrition education
b) supplementary feeding under supervision
c) distributing nutrients as a corrective measure
d) in certain circumstances, through nutrition rehabilitation centres.

More elaborate health services

The type of local health services, visualized under this will be of the pattern of rural health centres with the assistance of medical personnel and facilities for indoor treatment.

The activities suggested in the earlier two stages will have to be continued at this level with further improvement of quality. In addition, the following responsibilities distinctly belong to this level.

1. Management of severe cases of malnutrition referred by the previous two levels. With the facilities for indoor beds, treatment of severe cases will have to be undertaken at this level. Similarly, a full rehydration centre has to be organized at this level, which can also serve as a demonstration-cum-training centre for health workers at the lower two levels.

Experiences in different countries have indicated that there is an urgent need to orient medical and health personnel in simple and practical methods of management of severe cases of malnutrition. It is not rare to see even severe cases of PCM being mis-diagnosed in the hospitals and their treatment and management done in an irrational manner. Clear-cut guidelines or the diagnosis and management of PCM for use of medical personnel is an urgent necessity and in which UNICFF with the technical collaboration of WHO can be of great assistance.

2. Supervision. The activities at the two lower levels are to be supervised periodically by the more senior grade personnel at this level. There should also be a direct line of communication between these three levels especially in the field of surveillance. The information monitored on the individual and the community basis should be collated and analysed at this stage.

3. Nutrition Rehabilitation Centres or Units

Organization of such centres can be of great help in reducing the severity of incidence of malnutrition in the community and at the same time reducing substantially the load on hospital beds. Such centres can also be a successful method of imparting nutrition education to the mothers - especially in the management of weaning problems, preparation of cheap home-made foods.

4. Coordination

In most developing countries, the different sectors of the government administration have some form of set-up at this level under the control of officers with responsibilities. Effective coordination can be made at this level to supplement and complement the activities of different sectors relating to nutrition. The decisions taken at this level will also influence collaborative actions in the lower two levels. The desirability of a local inter-sectoral committee with representatives of all sectors and the community leaders needs no emphasis.

Supporting Activities

There are some activities which are to be carried out either at the level of health centre with the assistance of medical personnel or even at a higher level, in order to give a continuous support to the three levels of health services. The following two are important·

1. Training. this should be a continuous process so that there is no dearth of personnel at any of the levels. The training content for workers at each level would necessarily vary. There is another area where urgent action is needed to prepare simple manuals to assist such training. Most of the manuals available are too elaborate, give too much of theoretical bias and lack precise instructions of practical nature. UNICEF with the technical collaboration of WHO can undertake this important responsibility.

2. Experimental and demonstration kitchens

Such set-up can be of very great help in·

a) studying the combinations of locally available foods to be used as weaning foods,

b) training the health workers at lower levels.