NUTRITION AND HEALTH EDUCATION

The first health survey of Nepal which was done in 1965/66 tried to get information on the diet and nutritional status of the Nepalese people (1). A total of 6,321 people from 957 households from nineteen different sites within the country were covered. It was found that the diet as a whole is lacking in protein, calcium, Vit. A, riboflavin and ascorbic acid. It’s conclusion was that marginal malnutrition was prevalent in view of the high under five mortality rate (U5MR). On the whole however, the clinical nutritional status of the population was pronounced as satisfactory by the investigation team from the University of Hawaii.

In 1974 Pourbaix conducted a survey to assess the Nutritional status of Nepalese children. The survey was limited to 1042 children between 6 to 72 months from 17 areas of the country. Clinical criteria including weight for age and weight for height were used to grade the status (2).

Nepal National Nutrition Status Survey, 1975

Subsequent to this a Nepal National Nutrition Status Survey was done in 1975 by HMG/N with the aid of the Centre for Disease Control, Atlanta with the financial support of USAID. In this survey some 6,578 children under 6 years of age were surveyed in 221 sites. Of the total child population there were 52.5% boys and 47.5% girls. The feeling is that the boys were over represented in this study as this is not the usual male to female child ratio in the population.

In 1975 with the aid of WHO and UNICEF, recommendations for malnutrition and goitre control were made part and parcel of Country Health Programme exercise.

In 1978/77 a survey of 749 children, between one to five years of age, was done using UNICEF provided Sakir tapes. The findings of this survey in Bara and Parsa districts were as follows (3):
Table 10.1 Status of Nutrition

<table>
<thead>
<tr>
<th>Degree of Malnutrition</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe malnutrition</td>
<td>11.8</td>
</tr>
<tr>
<td>Mild malnutrition</td>
<td>36.4</td>
</tr>
<tr>
<td>Good nutrition</td>
<td>51.6</td>
</tr>
</tbody>
</table>

In 1976 HMG/N established a National Nutrition Policy Co-ordination Committee (NNPCC) with a member of the Planning Commission in charge of health and social welfare as the Chairman.

In 1978 the NNPCC in collaboration with WHO and UNICEF organised a workshop on food and nutrition planning. The prevailing state of malnutrition was identified, strategies decided and measures which could be undertaken to combat malnutrition stated at the National Nutrition Strategy Workshop at Pokhara (4). As a prime example of good intentions, it drew up a multisectoral strategy for improving nutrition. All this culminated in the so called Pokhara Declaration. This resulted too in the formation of nutrition focal points in 4 ministries viz. Health, Agriculture, Education and Panchayat. It led to the establishment of Nutrition section under Department of Health Services in the MOH. The Joint Nutrition Support Programme (JNSP) was then put into function to implement the major activities of the four ministries. That nothing much was achieved in the years that followed is borne by the fact that the JNSP was finally dismantled as a result of donor dissatisfaction.

Amongst the decision makers there was the awareness that malnutrition per se was not primarily a clinical disease but a social one with multiple causes. The health sector realised that for interventions for the eradication of malnutrition to be successful it was essential to have the necessary political commitment (5).

Rana et al working at Bhaktapur in the early eighties showed that children under 12 months old were maintaining their nutritional status, but after 1 year there was chronic under-nutrition in more than 80% of the children. Diarrhoea and respiratory infections played a major role in protein energy malnutrition (6).

Work by personnel of the United Mission to Nepal with a community oriented approach has been reported in local journals. Such workers believed
that whilst nutrition education is an essential component, others factors such as anthropological, psychological and social have to be taken into consideration to bring about any change (7).

**SCF (UK) Work in the Rural Areas**

SCF (UK) started working in Nepal initially with an agreement with the Bal Sangathan. The initial work was done at Dhankuta where it was noted that most of the cases seen in children between 12 to 23 months presented during the monsoon season when stocks of food was low. Most suffered from infectious diseases such as diarrhoea and respiratory infection (8). Valuable work on malnutrition in children of Nepal has been reported from time to time as a result of the work in this and three other rural districts of Nepal, viz. Surkhet, Baglung and Sindhupalchowk (9). A work in Chuliban village in east Nepal shows that growth faltering starts at 3 months of age, and that prevalence of wasting and stunting also varies with ethnic group. This work has also suggested that the combination of influences associated with seasonal reduction in children’s growth rates is not the same as the combination which precipitates wasting malnutrition (10). More recently SCF(UK), has been involved in the short term disaster relief work with the Bhutanese refugees in various camps in Eastern Nepal.

In 1987 an unpublished study by Sullivan at the SCF clinic in Surkhet compared the nutritional status findings with those found ten years earlier at the time of the initial survey. There was an overall improvement with marked reduction in levels of acute and chronic malnutrition.

A 1991 study at the SCF(UK) clinics at the four sites other than at the refugee camp, showed that about two-thirds of the children attending such clinics came from within 30 minutes walking distance. This study also suggested a preference of parents for the well being of boys in matters of health care and nutrition (11).

**Investigations and Research**

As much as 54% of the crude birth rate of the country is due to the U5MR, the major cause of which is malnutrition. Work in the community showed that mortality and morbidity rates could be reduced by educating mothers in the proper use of locally available foods, breast milk included (12). Action on these lines will in turn reduce the chronic protein-calorie malnutrition prevalent in Nepalese children.
A study of 4,600 singleton babies at Patan Hospital showed that the birth weight in Nepal in this series was 3010 grams for males and 2900 for females. It must be noted that these are figures for relatively well off population. This study also showed a lack of haemoconcentration during the last eight weeks of pregnancy, indicating that the iron stores in the mother had been depleted (13).

A recent study regarding Vitamin A was one done by West and his co-workers (14). This randomised, double blind trial has shown that overall children taking Vitamin A supplements have lower mortality rates in age specific groups in both most malnourished and well nourished children.

In 1986, the NNPCC conducted a second National Nutrition Strategy workshop. A major recommendation was to establish a National Nutrition Institute.

Other Activities on Nutrition

It is surprising that no nutritional assessment of the population has been done since 1975. Even as late as 1990 the figures of 1975 were being quoted as “the latest ones”. It was in view of this that UNICEF managed to get Dr. Ramesh Adhikari to review the various smaller studies done since then and to compile a working document which would give a composite picture of the state of nutrition in Nepal (15).

Table. 10.2 Some Investigations in the Nutrition Field over various years

<table>
<thead>
<tr>
<th>Field of Investigation</th>
<th>No. of Studies done in period 1975-79</th>
<th>1980-84</th>
<th>1985-90</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEM</td>
<td>9</td>
<td>26</td>
<td>22</td>
<td>57</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>0</td>
<td>5</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>Iodine</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Iron</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Health</td>
<td>2</td>
<td>7</td>
<td>10</td>
<td>19</td>
</tr>
</tbody>
</table>
A total of 111 materials had been generated as a result of various investigations done in the nutrition field during the course of the period 1975-90. The various fields they are in is shown in the table 10.2.

On the basis of the various reports the general impression was:

1. The nutritional status of children in Nepal is showing a worsening trend. Suggestion is made to assess the nutritional status regularly with the objective of seeing the impact of child health and nutritional programmes.

2. Vitamin A deficiency is a public health problem in Nepal and needs to be addressed.

3. Iodine deficiency disorders (IDD) have also public health importance. There is now a declining trend of these, because of salt iodation and iodised oil injections.

4. Not much work has been done in Nepal regarding micronutrient deficiencies. Anaemia is very common in women of reproductive age and is a major public health problem that needs to be tackled.

National Seminar on Nutrition, Kathmandu, 1991

It has been stated that the state of malnutrition in a country is reflected in the state of nutrition of the children. Thus the fact that 44% of the population is under the age of 14 years means that the nutrition of the Nepali child is of prime importance. The recent realisation is that we have been having wrong assumptions viz. malnutrition can be tackled by economic growth and that feeding programmes are the mainstays of treatment (16). It has now been realised that proper treatment of childhood diseases, overall child care and child feeding practices will bring about major reduction of malnutrition in our part of the world. It is perhaps with this in mind that the 1991 National Health Policy has drawn attention to breast feeding, weight measurement of children, control of Vitamin A deficiency and nutritional education (17). This same document has stated that the four forms of malnutrition existing in the country are:

- Protein Energy Malnutrition
- Xerophthalmia due to Vit. A deficiency
- Iron deficiency anaemia
- Iodine deficiency disorders
The Family Health Survey of 1996 (18) showed that on the basis of height-for-age there is considerable chronic malnutrition among Nepali children - overall 48% of children under 3 years are stunted and 20% severely stunted. Female children were more likely to be stunted (50%) or severely stunted (22%) than male children (47% and 19% respectively). Stunting was seen more often among children of higher birth order or with a short birth interval.

However much stress has been laid in the last decade on the important role of Vitamin A in the development of children as well as on the preventive role in bringing down the high mortality and morbidity rates. Vitamin A, besides preventing night blindness is now credited with bringing down the morbidity of communicable diseases plus also diarrhoea. A survey, combined with the distribution of Vitamin A capsules twice a year to children between 6 months and five years has been done in 27 districts of the Terai and Far Western region of Nepal.

Dr. V. Ramalingaswami had carried out a country wide goitre prevalence survey in 1965-66. The survey in the three geographical regions showed that 55% of the population had goitre (19). Another survey in 1969 found rates of goitre prevalence to be between 74 and 100% in Jumla and Trishuli. Delange et al confirmed high rates of goitre and cretinism in the general population at Trishuli.

The Goitre Control Project set up in 1973 became subsequently the Goitre and Cretinism Eradication Project. Mass iodised oil injections were given in the remote mountainous and hilly areas where cretinism was widespread. During the course of the programme a substantial number of females in the child bearing age, in 40 such districts had been given injections some twice or even three times. HMG/N also launched a salt iodation programme as early as 1972. Whilst record keeping and reporting is not in an ideal state, the apparent impression is that the number of cretins born has decreased. Contrary to these impressions, a report in 1985 stated that two surveys done in mountainous areas of Northern Nepal showed cretinism to have disappeared before the start of the Goitre Control Project of HMG/N (20). The reason suggested for this is that the population increase caused a food deficit in the area and that to deal with the problem food with higher iodine content was imported from the lowland areas. The author however stressed the necessity of continuing the Goitre Control Project and the iodation programme. Currently the MoH is giving iodine capsules in only eight districts of the country and stress is being laid on the provision of iodised salt (18).
An overall study supported by UNICEF (21) in 1984 had made the following suggestions regarding salt iodation in Nepal:

- The level of iodation should be 30 ppm of potassium iodate.
- Iodation plants should be established in Nepal.
- Salt should be packed in wire woven bags to minimise wastage.
- There should be quality control.
- The prevalence of goitre and cretinism should be monitored.
- The iodine oil injection programme should be repeated.
- Financial support should be extended.
- Salt Trading Corporation should continue to be responsible for the salt iodation programme.

Regarding the problem of the IDD the MoH’s plan of action has five components:

- policy formulation
- universal salt iodisation
- targeted iodine supplementation
- monitoring and evaluation
- and the IEC component.

The situation as regards iodation is that there are currently three such plants established at Birgunj, Biratnagar and Bhairawa. There is a mobile unit at Nepalgunj. Thus whilst we talk of tertiary care and high technology, the fact remains that for whatever may be the reason, we have not been able to provide iodised salt to all the Nepalese. Besides the Salt Trading Ltd. private parties are also being allowed to import iodised salt. Hopefully, iodised salt will then be available in manageable 1 kilo packing all over the country. Presently there is one urinary iodine monitoring laboratory and four salt iodine monitoring laboratories in Nepal.

Legislation has been enacted making it mandatory to have only iodised salt made available in the country.

**Transmission of Health Messages**

In the effort to tackle the problem of malnutrition a preventive and curative approach to the health of a child is necessary. In this context, a study at
Santang near Dhankuta showed that the causes of malnutrition and ill health which could be tackled were lack of knowledge related to health and nutrition and economic constraints (22).

It is a known fact that social-cultural factors influence many nutrition programmes in the rural areas. Many of the feeding practices may be of negative nature. To counter these, as well as to give nutrition education, much work needs to be done. A study of this in the PHC setting (23) showed that the low impact was due to:

a. Too many unrealistic messages.

b. Messages conflicting with cultural and traditional practices.

c. Western oriented content of message.

**New Nutrition Survey**

Plans are underway to do a new national nutrition survey after a gap of twenty-four years. The objective as it currently exists is to focus on:

- Vitamin A deficiency
- Iodine deficiency
- Iron deficiency
- Micronutrient Survey

**References**


