Nutrition Education to the Community

by

SOEMILAH SASTROAMIDJOJO

Abstract

The improvement of the nutritional status of the Indonesian children requires an increase in food production, per capita income, level of education, better environmental hygiene, immunization and health services and nutrition education.

Nutrition education is as important as an adequate food supply (by the government) and purchasing power as long as long as ignorance and superstitions concerning food are present.

The importance of nutrition education is realized by the Indonesian government and is reflected in its Five Years Development Plans.

Nutrition education will be emphasized and included in the program of health improvement.

There should be "educators" (in nutrition) available to make this program a success.

The medical doctor, even more the pediatrician, is potentially, the right person as nutrition educator. However, the clue is that each doctor realizes the importance of nutrition education and does nutrition education, making the best use of his/her potentials.

Received 18th. Sept. 1974.

TABLE 2: Diet A : Rice-Soy-Fat-Fish

<table>
<thead>
<tr>
<th>Components</th>
<th>Qty gm</th>
<th>Energy Cals</th>
<th>Protein gm</th>
<th>Fat gm</th>
<th>Cost Analysis Rp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice, halfmilled</td>
<td>300</td>
<td>1080</td>
<td>22.5</td>
<td>2.3</td>
<td>27</td>
</tr>
<tr>
<td>Soybeans (as fresh tempe) 65 grams</td>
<td>20</td>
<td>96</td>
<td>10.3</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>F a t</td>
<td>7</td>
<td>61</td>
<td>--</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Fish, small, dried</td>
<td>15</td>
<td>30</td>
<td>6.8</td>
<td>--</td>
<td>9</td>
</tr>
<tr>
<td>Vegetables &amp; fruits</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>T o t a l</td>
<td>352</td>
<td>1267</td>
<td>40.6</td>
<td>14.3</td>
<td>51</td>
</tr>
</tbody>
</table>

Diet B : Rice-Peanut-Fat-Fish

<table>
<thead>
<tr>
<th>Components</th>
<th>Qty gm</th>
<th>Energy Cals</th>
<th>Protein gm</th>
<th>Fat gm</th>
<th>Cost Analysis Rp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice, halfmilled</td>
<td>300</td>
<td>1080</td>
<td>22.5</td>
<td>2.3</td>
<td>27</td>
</tr>
<tr>
<td>P e a n u t (or: fresh &quot;oncom&quot; 80 gm + extra fat 9 gm)</td>
<td>30</td>
<td>160</td>
<td>7.8</td>
<td>13</td>
<td>9</td>
</tr>
</tbody>
</table>
| F a t | -- | -- | -- | -- | (13)@
| Fish, small, dried | 15 | 30 | 6.8 | -- | 9 |
| Vegetables & fruits | + | + | + | + | + |
| T o t a l | 345 | 1270 | 37.1 | 15 | 45 |

@) "Oncom" Rp. 9.— + extra fat Rp. 4.— = Rp. 13.—
between the aforementioned values of 5 and 8. As no conclusive figure is as yet existent, we have set this value arbitrarily at 6.5 as the minimum. This means that a suitable diet for preschool children must have for example, a protein calories % of 12 and a NPU-op value of at least 55, which will give a NDpCal % value of 6.6. The requirements for such a diet can be met from a judicious combination of foods from the groupings as mentioned previously. An example is given in Table 1, indicating the quantity in grams, the cost in Rupiahs, and the NDpCal % value (see Table 1). This total quantity must be consumed as food in one day by the child, will his requirement for energy and protein be met.

V. Basic Components of Various Diets

(Amounts in grams & Cost analysis in Rupiahs)

<table>
<thead>
<tr>
<th>Foodstuffs</th>
<th>Foodgroups</th>
<th>Qty gm</th>
<th>Energy Cals</th>
<th>Protein gm</th>
<th>Fat gm</th>
<th>Cost (Jakarta) Rp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Staple</td>
<td>Rice, halfmilled</td>
<td>300</td>
<td>1080</td>
<td>22.5</td>
<td>2.3</td>
<td>27</td>
</tr>
<tr>
<td>IIa Legume</td>
<td>Soybean, dried</td>
<td>30</td>
<td>96</td>
<td>10.3</td>
<td>5</td>
<td>13@</td>
</tr>
<tr>
<td>IIb Animal product</td>
<td>Fish, small dried</td>
<td>15</td>
<td>30</td>
<td>6.5</td>
<td>-</td>
<td>9</td>
</tr>
<tr>
<td>III Edible Fat</td>
<td>Coconut oil</td>
<td>7</td>
<td>61</td>
<td>-</td>
<td>-</td>
<td>7</td>
</tr>
<tr>
<td>IV Vegetables</td>
<td>(&quot;bayam&quot; etc.)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>V Fruits</td>
<td>(&quot;banana&quot; etc.)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>

| T o t a l: | 352 | 1267 | 40.6 | 14 | 51 |
| Percentage of Total Calories: 100% 12.8% 10.1% |

NPU-op : 55. Protein calories % : 12.8 NDpCal % : 7.4
@ Retail price of 65 grams of fresh "tempeh".

The simplified diet above, used for the determination of the NPU-op value, can also serve as a useful guide for the selection of substitute foodstuffs the mother can use for preparing the food for her children and the whole family as well. It serves also as a basis for the computation of cost. The cost of this simplified diet is approx. Rp. 51. — It

The improvement of the nutritional status of the Indonesian children requires an increase in food production, increase of per capita income, level of education, better environmental hygiene, better immunisation & health services and nutrition education.

It is no exaggeration to state that nutrition education is as important as an adequate food supply and purchasing power. Enough food available and a high income do not ensure a nutritionally adequate diet/menu, especially in the case of small children, as long as superstition and taboos concerning food are present. (Tan et al., 1970).

The government realizes the importance of nutrition education which is reflected in its Five Years Development Plan. In the First Plan nutrition education was included as a means to improve the nutritional status and health of the population. Before and during the First Five Years Development Plan, nutrition education was a.o. implemented in the Applied Nutrition Program, carried out at Mother and Child Health Centers, School Health Services and Health Centers.

In the Second Five Years Development Plan, nutrition education will be emphasized and included in the program of health improvement/development. As much attention will be paid to nutrition education as to food production and the distribution of food.

Nutrition education will be focused towards the development of a nutritionally well balanced menu for the population.

Mely Tan et al. have shown through surveys done in the islands of Java, Bali and South Sumatra in 1970, that the menu pattern in these areas consisted of a staple food (rice, corn, cassava, sweet potato), side dishes consisting of a protein source (mostly fish, peanut presscake, fermented soya bean, soya bean curd, legumes, nuts) and vegetables. Such a menu pattern if consumed in adequate amounts would make a nutritionally balanced diet, also for children.

Unfortunately, children in the areas investigated were not given the animal protein sources such as fish or meat, due to food taboos.

Based on these facts and within the context of the Indonesian Five Years Development Plan, to improve the nutritional status and health of the Indonesian children, it would be appropriate to direct the nutrition education program to a change of attitude towards the menu pattern of children so that children will be given the animal sources available in the family diet and next to an adequate amount of the staple, also locally available legumes and green leafy vegetables.
Planning a nutrition education program includes the determination of the learner (communicant), the teaching material, the educator (communicant), the method of teaching, teaching aids and consideration of the local environment/conditions (see framework attached). In our case, the most appropriate teaching target/learner/communicant would be the "mother", because she is the person who selects the food stuffs, cooks, distributes and feeds the smaller members of the family. The teaching material, needless to say, should be "to set up a nutritionally adequate diet" using locally available foodstuffs which are within the reach of the family budget.

Then the questions arises as how to make the mothers interested in our teaching material, understand it and change their attitude and behaviour towards food taboos. To achieve this, the teaching material should be easily understood by the learner and there should be a motive strong enough to make the learner ready to change her/his attitude. The educator must be aware/know the felt need of the learner, because the (hope for) fulfillment of one's felt need is a very strong motivation to change one's behaviour or attitude. Generally, everybody has at one time or another the felt need of getting a certain prestige, social status, or to earn more money or acquire good health. For this last reason, the role of educator could be played by anybody with the following characteristics: a key person who is aware of health and nutrition problems to be solved, has an adequate knowledge of the teaching material and knows the characteristics of the learner.

A medical doctor, even more a paediatrician, is potentially the educator in our case, because a doctor has all the characteristics mentioned previously. Moreover, a doctor surpasses the other key persons on 2 points, i.e. a doctor knows the health and nutrition problems best, and a doctor is considered the most ideal person to meet the learners need for good health. A doctor has a wide opportunity to do nutrition education, for instance as a private practitioner, through the hospital, as a member of parents, and teachers' association, through meetings of housewives organized by the "Rukun Tewangga" and "Rukun Warga", at the Mother and Child Health Centers, Health Centers and "Taman Giria" (Nutrition Education and Rehabilitation Center) "Karang Balita", (Under five clinic) as a regular writer in magazines or newspapers, or through radio or TV programs, etc.

For each occasion, the educator should choose/select the proper method of teaching, language and teaching aid, because the success of a teaching depends also on these factors.

known in Indonesia as "4 Sehat — 5 Sempurna" ("4 means healthy, 5 is perfect"). The RRDA for a preschool child of 2 to 3 years old, 12 kg of bodyweight, is for energy 1200 Calories, for protein 25 grams and vitamins and minerals as given (LIPI, 1968).

It is essential first to ensure an adequate level of energy intake. And this can be achieved only, if the child has a sufficient intake of food. The adequacy of energy intake must receive first consideration, otherwise part of the dietary protein will be used for the provision of energy (WHO, 1973). This is wasteful, especially for developing countries, where the protein supply is relatively marginal.

The energy need and the safe level of protein intake are usually separately expressed in terms of calories and grams of dietary protein per day. But a major advance is the recent practice of evaluating the protein value of the total daily diet as consumed in Net-Dietary protein calories % (NDpCal %).

IV. Arbitrary NDpCal % - value for diets of preschool children

What is the NDpCal % - value assigned for diets of preschool children?

The Net Dietary - protein Calories percent value of human milk is calculated to be in the range of 8.0 — 7.7% (Platt et al., 1961) that of rice is 3.5% (Lie Goan Hong et al., 1974). The significance of those values in relation to human diets, is best illustrated by quoting van Veen (1971) in full:

"With respect to the values for NDpCal percent, it may be noted that a diet that provides less than 5 percent of the calories in the form of utilizable protein is incapable of meeting the needs of the adult, even when consumed at a level that meets the calorie requirement. Furthermore, a diet supplying less than 5 percent of calories as utilizable protein is incapable of meeting the needs of the young infant (FAO 1965)."

It can reasonably be expected, that the NDpCal percent value of the diet for preschool children will be in

Note: Net Dietary-protein Calories percent (NDpCal %) = Protein Cals % x NPUtil.

Protein Cals %: The utilizable protein content of a diet in terms of calories expressed as percentage of the total metabolizable calories.

NPUtil = Net Protein Utilization value in light. This value is obtained by feeding experiments using young weanling albino rats, according to standard procedures (Miller, 1965).
I. Introduction

Protein Calorie Malnutrition in Indonesia is seen among preschool children belonging mostly to the underprivileged low-income group. From epidemiological point of view, the underlying causes of this malnutrition are well-known as:

- poverty or low purchasing power
- ignorance of the mother in regard to the nutritional needs of the children
- recurrent infections due to poor environmental sanitation (Srimshah, 1971).

The result of the interaction of these 3 factors will be that the child will not get enough food every day and the food he gets is of inferior quality also.

Of the various multidisciplinary approaches needed for the improvement of this condition, nutrition education of the mother is an absolute necessity. By improving her nutritional knowledge she will be able to select the proper kind of foodstuffs, prepare it and give it in the correct amount to her children.

II. Selecting the Kind of Foods

In the selection of the kind of foods to be used, the mother is limited however, to the foodstuffs which are within the buying power of the family and next to it, she will only select those foods which fit in the existing menu pattern of the region. Whatever the choice may be, the foods selected, must be from each of the following groups:

I. the cereal staples, such as rice and/or maize.

II. protein-rich foods
   a) from plant origin, such as legumes and its products
   b) from animal origin, such as fish or egg or meat.

III. edible fats and oils, such as coconut and peanut oil.

IV. vegetables, such as green leafy vegetables, "bayem" and "kangkung".

V. fruits, such as yellow "bananas" and "papaya".

III. Energy and Protein

The question which arises will be: In regard to the preschool child, can one reasonably estimate the correct amount and the right kind of foodstuffs, which if eaten every day will prevent malnutrition and will also have the minimum of cost?

In answering this question, it will be necessary to translate this recommended daily dietary allowances (RDDA) into the various foodstuffs, which together must form a well-balanced diet and confirm also to the existing menu pattern, so well-

There are various kinds of teaching methods and teaching aids, like speeches, lectures, discussions, demonstrations, posters, plays, "wayang", films, etc. Each method or aid has its positive and negative points. However, it can be said that the method which requires the learner to use more of his (maximally 5) senses is better than one which requires the use of less senses. There is a proverb saying "What I hear I forget, what I see I remember and what I do I know".

The best teaching method is "learning by doing". This is a method practiced in the Taman Gizi and Karang Balita (Under Five Clinic) in Indonesia and in the Nutritional Rehabilitation Centers/Mother Craft Centers abroad.

In these centers, mothers set up menus using nutritious, cheap, locally available foodstuffs, cook them, distribute and feed them to their children who are brought to the center. The mothers are guided by personnel who have an adequate knowledge of nutrition, e.g. a dietician, nutritionist, mothers, girls or women who have had some training in nutrition.

In Indonesia the so called Taman Gizi and Karang Balita are supervised by a doctor.

Thus, I would like to underline that a doctor is potentially the educator for a nutrition education program for the community.

The program to improve the nutritional status and health of the Indonesian children will be more successful if each doctor realizes the importance of nutrition education and does nutrition education.


REFERENCES

NUTRITION EDUCATION FRAMEWORK

To change attitude/behaviour/habit

To implant knowledge

Teaching material

To arouse interest

educator ↔ learner

environment

Investigation

Planning

Execution

Evaluation

Re-evaluation

Elotin-Vita
Appetite Stimulant-Multivitamins