VITAMIN A SWEET POTATO PROJECT

(UGANDA)

TRAINER'S MANUAL

A NUTRITION TRAINING COURSE FOR EXTENSION WORKERS

APRIL 2007

Table of Contents

Introduction

Background

The Vitamin A Sweet Potato Project is a research project that will mainly be involved in the dissemination of the vitamin A- rich orange fleshed sweet potato to farm households through extension systems of NGOs. Activities will mainly involve engaging farmers in the production of the potatoes and working with caregivers to promote the consumption of the potato. This will mainly involve training and support supervision at various stages of implementation.

To increase consumption of the potatoes, mothers and other caregivers need to appreciate the added advantage of the vitamin A sweetpotato compared to other sweetpotatoes and to know how to prepare suitable dishes for the infants and young children. In addition, the caregivers need to learn the basic storage and processing practices that conserve vitamin A in the sweetpotato. During the life of the project the caregivers will be trained in various modules to enable them acquire the knowledge and skill. This training will be done by nutrition promoters and extension workers.

This manual has been developed for the extension workers that will be involved in training nutrition promoters in various aspects of nutrition, child feeding and nutrition care for the sick child. It is a guide that takes the trainer through the different aspects with suggestions of training methods and activities that can be employed to help them pass on the knowledge and skill. It contains the basic guide and facilitation notes that the trainer can use for further reading and clarification. This manual is not a "blueprint", there is provision for input from the extension workers who will be using it.

Training objectives

At the end of training the extension workers should be know:

1. the basic functions of food and how to prepare balanced diets
2. the importance of micronutrients with specific reference to vitamin A and vitamin A rich foods;

3. the importance of appropriate feeding for infants and young children and demonstrate ways of using the vitamin A sweet potato to make appropriate dishes for them;
4. the appropriate nutrition care of sick children with specific reference to the common childhood diseases and how to prepare suitable dishes for the sick child; and
5. the importance of hygiene and sanitation in order to keep children healthy.

The Layout

The manual has a guide that shows how the lesson is to be introduced, developed and concluded. It has key messages for every topic that need to be emphasized to the caregivers and will be promoted in other activities like drama and radio. It also has training notes that the facilitator can use for further study and a better understanding of the topic. The manual will be used in conjunction with teaching aids/posters that will illustrate several aspects during the training. After each training, there should be an opportunity to evaluate the module and discuss how to re-package it for promoters.

The training can be conducted in any area so long as there is space where the demonstration/illustration materials can be displayed and used. The demonstrations at household level need to be conducted in the homes of participants so that it is done using ways that are relevant to them.

Choosing appropriate methods

In order to choose the appropriate methods you need to know your trainees;

- Are they men or women?
- What is their level of education?
- What are their tasks in the community?
- What are you going to teach? Facts? Skills? Or Both

- What do you have in terms of time, materials and facilities

What you decide will depend on these.

Organising the training

It is important to take time to organize your training session and consider the following points;

- Create a good learning atmosphere; be friendly and encourage the trainees to participate;
- Take time to learn from them e.g. begin with a question-answer session that helps you understand their level of knowledge;
- Use participatory methods like discussions, question and answers, and role playing to get them to take part in the training;
- Help them develop skills that help them put their knowledge into practice;
- Discuss how to take the knowledge and skills into the community, how to train promoters and try playing it out in the lessons;
- Have an evaluation at the end to make sure the trainees understand;
- Have a follow up to find out how the methods trained worked in the community and find ways of reinforcing the learning

Since our target population is rural we need to have manuals translated into the various languages, with sufficient illustrations, and practice. So role plays, use of posters and demonstrations will be vital throughout the training process. The guide has methods suggested but more methods can be suggested and introduced during the trainings. The table below sheds more light on the different training methods.

TRAINING METHODS AND THEIR USES

Training method	When you should use method	How you should prepare
1) Giving a talk	- Introduce an unfamiliar topic - Need to relay specific facts .that the trainees are not very familiar with	-Decide on what is relevant - Arrange in a logical way -Get visual aids to help illustrations
2) Demonstrations	- Need to show how to do something step by step - To make something easier to understand	- Get step by step notes to guide process - Prepare all materials you need - Have appropriate place
3) Role playing	- To move discussions forward - To understand what people feel - To go through a process so that you understand its complexity	-Get the important information ready - Get volunteers to take part and give them the important points
4) Discussions with (Questions and answers sessions)	- Want the trainees to learn from one another - Need to solve a complex problem using local resources	-Prepare discussion points/questions in advance -Make appropriate groups with diverse qualities

Food and its functions

Objectives

By the end of the training the trainees should be able to:

1. understand the importance of food in our bodies, the reason why meals need to be balanced
2. understand the consequences of inadequate diets
3. the ways of overcoming the challenge of preparing balanced meals in contexts of limited supply of fuel and sometimes limited time
4. try out practical ways of balancing meals using local food stuffs and the importance of nutrient dense foods
5. facilitate changes in attitudes and practices toward adequate feeding
6. conduct learning exercises that will help promoters and caregivers use this information

(5 minutes)

Methods

Discussions – Question and answer sessions, Presentation, Group activities, Role play

Materials

Chart on food groups

Demonstration materials (small quantities of food stuffs or pictures of food stuffs)

Illustrations on methods of preparing food together e.g steaming, preparing mixed dishes or having prepared ground powders that can be added directly to food (Gnut paste, Simsim paste..).

Activities

1 Introduction

- Introduce the topic, let the trainees define food and come up with a definition
- With the trainees list out the various foods available in the area and try grouping them in ways suggested by trainees
- Discuss the functions of the different food groups and try out grouping them by function using the three main functions; energy giving, body building and protective foods and carry out the grouping
- Explain about foods that have more than 1 nutrient in large proportions (nutrient dense) and include/introduce OFSP, add the others like g.nuts, ovacado.

(15 minutes)

2. Food and its role in the body

- Explain the role of the different nutrients and the importance of having a balanced diet to improve digestion and assimilation.
- Illustrate this using the concept of building a strong wall *(see poster/illustration)*
- Explain when specific nutrients are most important and what would happen if they are not available in adequate amounts as a brief explanation of some of the symptoms of under-nutrition
- Discuss with the trainees what diets are most common in the area and review their adequacy

(20 minutes)

3 Challenges of preparing balanced diets (Group activity)

- Each group should come up with two common meals in their homes
- With the trainees discuss the normal meals in most families and see if they are balanced
- Have trainees give you challenges that limit the preparation of balanced diets and have them listed
- Have them suggest ideas of overcoming them in the rural setting
- With the trainers compile a list of methods that can help mothers prepare balanced diets in their homes using locally available food stuffs
- With the charts illustrate some of these methods and discuss their suitability in the rural setting.

(20 minutes)

Group assignment: How can this lesson be taught to promoters

- In groups let the trainees discuss and come up with an outline and a set of activities on how they can teach promoters this module
- Have each of the two groups present their outlines, discuss them and make the final one for use.

Evaluation

Ask participants to evaluate what they have learnt and have the results presented.

(What went well, what did not go well, and how we can improve)- 5 minutes

Key messages

- *Each meal should have food from the three main groups to make it balanced*
- *Integrate Vitamin A Sweet potato in your child's diet whenever possible*

FACILITATOR'S NOTES

Food and its functions

What is food?

Everything that we normally eat and drink can be called food – apart from alcohol or drugs. Things consumed as food differ from one community to another and sometimes even within different families of one community. The nutrition worker should know what types of food are consumed in her area, what items of food people like, and what foods people do not eat even though they are cheap and abundant; the nutrition worker should also know why people do not eat certain types of food. This information should be got at the beginning of the session.

Why do we eat?

We eat whenever we are hungry. Satisfying hunger is just one function of foods, but there are other important functions of food for the human body: to provide energy, to sustain growth, to give protection from disease.

Functions of foods:

· To give energy for all types of activities including body processes;

· To help the body to grow in size, for development and repair; and

· To help the body function properly and protect the body from diseases.

Different foods have different functions

Foods contain chemical substances known as nutrients. These can be divided into three categories according to their function: energy-giving nutrients, body-building nutrients, and protective nutrients. Most foods contain a mixture of the three categories of nutrients, but usually in one type of food one of the categories is

present in a larger amount than the other two, and the function of that nutrient becomes the main function of that food.

Energy-giving foods:	Cereals like rice, maize, or millets.
	Fats and oil
	Starchy tubers like potatoes, sweet potato, cassava
	Sugar, molasses, and honey
Body building foods:	Most foods of animal origin; milk, eggs, fish, & meat
	Foods of vegetable origin; peas, beans, lentils and nuts
Protective foods:	Vegetables, especially the green leafy type, carrots, tomatoes
	Fruits especially yellow, orange and red; pawpaw, mango, melon
	Fruits with sour juice like orange, lime, lemon, tangerine

Balancing our meals

There is no such thing as an ideal diet. But to live a healthy life we must eat a mixture of foods, some that give energy, some that promote growth, and some that protect from disease. Children need adequate amounts of energy giving and body building foods because their bodies are growing rapidly.

In many communities, the main part of the diet consists of cereals such as millet, rice, or cassava, potatoes or bananas/matooke. This needs to be supplemented with other foods. Supplementary foods include pulses, beans, and peas. These are usually eaten with the cereals and tubers. They give variety to the diet and make the cereals/tubers/matooke more palatable. Similarly, vegetables are also eaten with

cereals and pulses to increase palatability and variety. This may not be possible in some homes but needs to be encouraged.

Animal foods are also consumed in lesser quantities. They are the most expensive items of the diet, and include meat, fish, eggs and milk and milk products. They are important for children and parents need to find a way of giving some to children. Small fish, insects, eggs and a little milk can be added to the children's meals to boost their protein amount.

Fats and oils, which are mostly used for cooking foods, greatly improve the taste of food and the energy value of the food. These are especially good for porridges for children who need the extra energy.

A main meal should be a mixture of:

· Cereals, tubers or matooke

· Pulses, beans or peas

· Vegetables, green leafy type and/or fruits. ***"the triple mix"***

Whenever possible an animal protein should be added, this protein found in all animal foods is of high quality, and it is present in large amounts.

However, vegetable foods like peas, beans, pulses, and nuts also contain large amounts of protein, and therefore can promote growth as well.

NOTE;

If animal foods are within the family budget and are normally consumed, then the addition of even a small quantity of animal food to a vegetable food mixture greatly improves the growth-promoting effect. This is especially important in the feeding of infants and young children So adding small fish or milk to sauce or porridge is very good.

Mothers' milk is an excellent addition to vegetable food mixture in promoting growth of infants and very young children. That is why the advice to all mothers should be to continue breast-feeding as long as possible, because even a small quantity of mother's milk can greatly improve the quality of vegetable food supplements the infant or the young child is getting. This is more important if the mother cannot afford to give other types of milk (e.g., cow's milk) to her infant or child.

When are body building foods most important?

Body building foods are most important during pregnancy, early childhood and adolescence when the body is growing rapidly. They are also important during recovery of diseases.

When are energy giving foods most important?

Energy giving foods are most important when you are very active like during growth spurts, when you are involved in a lot of physical work like crawling and playing children and those involved in heavy work like fetching water, digging..,

When are protective foods most important?

Protective foods are most important when one is recovering from disease and when one has special conditions/disorders. They are also important for the everyday functioning of the body. Usually not stored in the body, so need to be eaten every day.

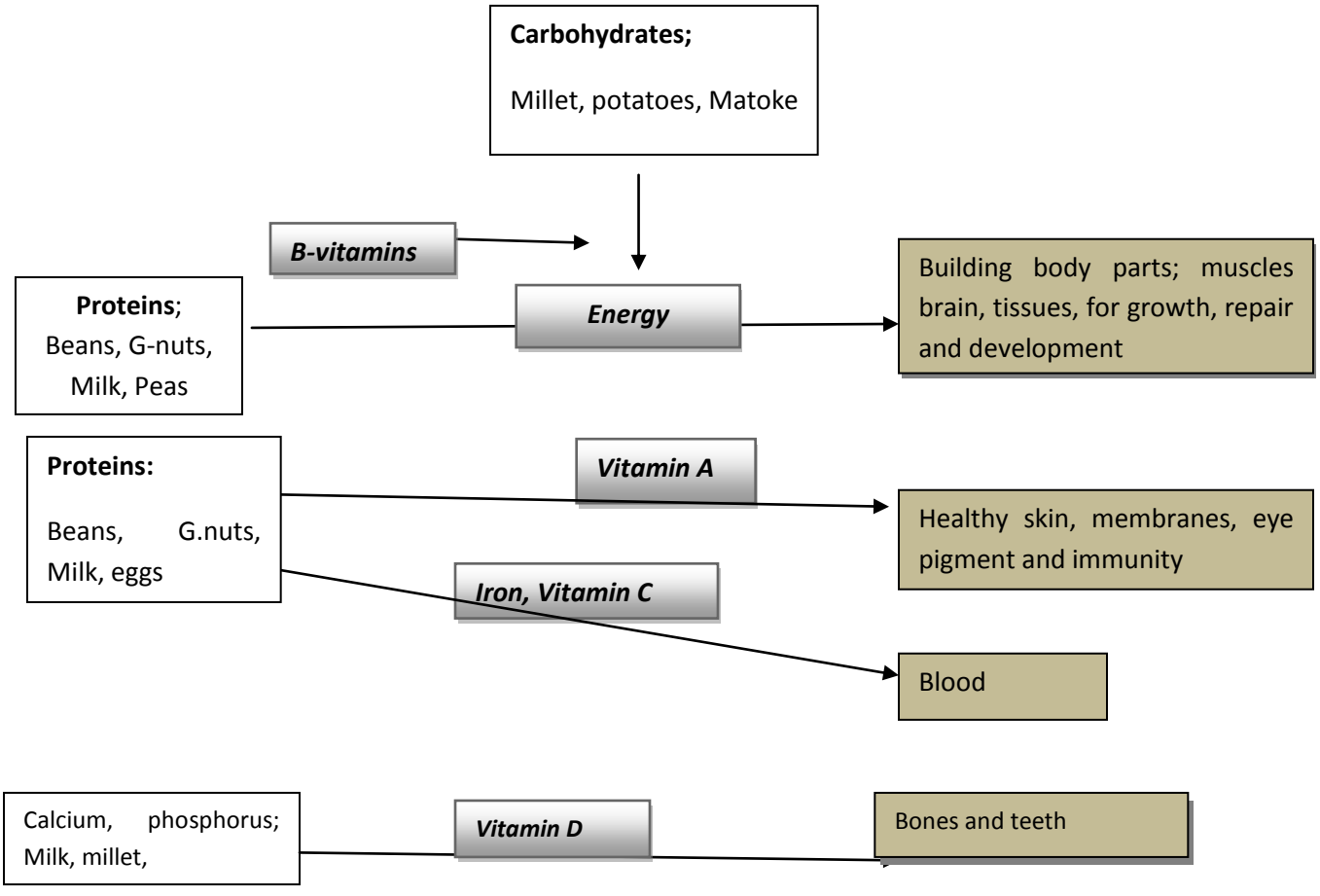
Digestion and assimilation of food

Food is eaten and then digested in the gut. The process is possible because of some small substances called enzymes.

If this process is not done properly the body may miss out on important nutrients and get a nutritional disorder;

It is possible to eat the main food but lack the protective foods this results in “hidden hunger”. Therefore eating a balanced meal is always very important.

The figure below shows how the different nutrients interact during absorption and assimilation.



Challenges involved in preparing balanced meals

- Lack of time;
- Lack of sufficient food in adequate amounts;
- Insufficient fuel;
- Lack of labour;

(Get more information during discussion)

Ways of overcoming the challenge;

- Preparing some food in advance; pounding the nuts before hand, grinding the millet in advance and keeping it ground
- Cooking food together; steaming, “ekitobero”, “katogo”
- Having pastes to add into the food like g-nut and simsim paste.

Summary of nutrients, functions and deficiency disorders:

Nutrient	Function	Deficiency/Disorder
Protein	Body building, growth and repair of the body. Needed for hormones and enzymes Thus body reactions	Growth failure, low weight for age, Breakdown or slow down of body processes, edema, kwashiorkor.
Carbohydrate	Energy for all body processes, Glucose from carbohydrates is important for brain functioning	Loss of weight, weakness, low productivity in adults, mal-functioning of the body proceses
Vitamin A	Sight in the dark, immunity – antioxidant, and proper growth and development.	Night blindness, high burden of disease, poor growth and development esp. in children
Vitamin B	Some are coenzymes of the energy reactions (B1, B2,), Some are important in cell division,	Slow down of body processes, collection of acids in the blood, malformation, Megaloblastic anaemia
Vitamin C	Health of capillary walls, immunity, antioxidant	Bleeding capillaries in gums as in scurvy, low immunity
Vitamin D	Utilization of calcium, Bone development,	Malformation of bones and teeth - Rickets,
Calcium	For bones and teeth	Malformation of bones and teeth - Rickets,
Iron	Haemoglobin, pigment that carries oxygen	Iron deficiency anaemia, breathlessness, low productivity
Iodine	Functioning of the thyroid gland and brain development	Goitre in adults and Creatinism in children
Zinc	Growth and Development	Poor growth and development especially in children

Vitamin A Rich Foods

Objectives

At the end of the training the trainees will be able to:

1. understand the role of micronutrients in the body (in general)
2. understand the role of vitamin A in the body
3. understand deficiency disorders resulting from lack of vitamin A
4. list the main sources of vitamin A
5. demonstrate recipes of vitamin A rich foods – emphasis on OFSP

Methods

Question and answer sessions, Group discussions, and group activities/demonstrations

Materials

Charts illustrating the role of vitamin A in our bodies

Charts showing Vitamin A-rich foods

Activities

<u>Recap</u>

Explain the role of micronutrients in the body, giving different examples and their critical roles. Use a chart to show the way they interact with the macronutrients to help them perform their duties

(10 minutes)

Vitamin A

Explain the role of vitamin A in the body; bringing out its specific role in the formation of healthy skin/membranes, vision, growth, development and immunity (use chart).

Explain why its deficiency results in a number of disorders; xeropthalmia (dry membranes), night blindness, development disorders, low immunity, and slow recovery from disease.

(20 minutes)

Main sources

Outline the main sources; both animal and plant and emphasize the plant sources since they are cheaper and can be grown. Emphasize the importance of OFSP since it is a staple and it is possible to consume it in large amounts thus enabling building up of body stores.

(15 minutes)

Recipes

Have the trainees divided into groups and let each group come up with at least two recipes of sweet potato used in the area.

Assess the recipes and see if they are suitable for children, if not how they can be improved.

Discuss some recipes that can be used for children especially those below 5 years of age like porridges, puree and mashes like mugoyo.

(15 minutes)

Evaluation

Ask participants to evaluate the training and give comments.

(What went well, what did not go well, and how we can improve)

(5 minutes)

Key messages

- *Integrate vitamin A sweet potato into your child's diet whenever possible*
- *Always try and include fruits and vegetables in your children's diet*

FACILITATOR'S NOTES

VITAMIN A;

What is it?

Vitamin A is a group of compounds that **play an important role in vision, bone growth**, **reproduction, cell division, and cell differentiation** (in which a cell becomes part of the brain, muscle, lungs, blood, or other specialized tissue.). **Vitamin A helps regulate the immune system, which helps prevent or fight off infections** by making white blood cells that destroy harmful bacteria and viruses . Vitamin A also may help lymphocytes (a type of white blood cell) fight infections more effectively.

Vitamin A promotes healthy surface linings of the eyes and the respiratory, urinary, and intestinal tracts [8]. When those linings break down, it becomes easier for bacteria to enter the body and cause infection. **Vitamin A also helps the skin and mucous membranes function as a barrier to bacteria and viruses**.

In general, there are two categories of vitamin A, depending on whether the food source is an animal or a plant.

Sources of vitamin A:

Vitamin A found in foods that come from animals is called preformed vitamin A. It is absorbed in the form of retinol, one of the most usable (active) forms of vitamin A. Sources include **liver, whole milk**, **eggs** and some **fortified food** products. Retinol can be made into retinal and retinoic acid (other active forms of vitamin A) in the body.

Vitamin A that is found in colorful fruits and vegetables is called **provitamin A carotenoid**. They can be made into retinol in the body. In the United States, approximately 26% of vitamin A consumed by men and 34% of vitamin A consumed by women is in the form of provitamin A carotenoids. Common provitamin A carotenoids found in foods that come from plants are beta-carotene, alpha-carotene, and beta-cryptoxanthin. Among these, beta-carotene is most efficiently made into retinol. Alpha-carotene and beta-cryptoxanthin are also converted to vitamin A, but only half

as efficiently as beta-carotene. Provitamin A carotenoids are abundant in darkly colored fruits and vegetables. Major contributors of provitamin A carotenoids are carrots, cantaloupes, sweet potatoes, pumpkin and spinach. Fruits include pawpaws, mangoes, melon, passion fruits and some jack fruits.

The Ministry of Health (Micronutrient Program) encourages consumption of all carotenoid-rich fruits and vegetables for their health-promoting benefits. Some provitamin A carotenoids have been shown to function as **antioxidants.**

Antioxidants protect cells from free radicals, which are by-products of oxygen metabolism that damage body cells and may contribute to the development of some chronic diseases and premature aging.

When can vitamin A deficiency occur?

Vitamin A deficiency is common in developing countries. Approximately 250,000 to 500,000 malnourished children in the developing world become blind each year from a deficiency of vitamin A. In the developed countries, vitamin A deficiency is most often associated with strict dietary restrictions and excess alcohol intake. Severe zinc deficiency, which is also associated with strict dietary limitations, often accompanies vitamin A deficiency. Zinc is required to make retinol binding protein (RBP) which transports vitamin A. Therefore, a deficiency in zinc limits the body's ability to move vitamin A stores from the liver to body tissues.

Night blindness is one of the first signs of vitamin A deficiency. In ancient Egypt, it was known that night blindness could be cured by eating liver, which was later found to be a rich source of the vitamin. Vitamin A deficiency contributes to blindness by making the cornea very dry and damaging the retina and cornea.

Vitamin A deficiency diminishes the ability to fight infections. In countries where such deficiency is common and immunization programs are limited, millions of children die each year from complications of infectious diseases such as measles. In vitamin A-deficient individuals, cells lining the lungs lose their ability to remove disease-causing microorganisms. This may contribute to the pneumonia associated with vitamin A deficiency.
There is increased interest in early forms of vitamin A deficiency, described as low

storage levels of vitamin A that do not cause obvious deficiency symptoms. This mild degree of vitamin A deficiency may increase children's risk of developing respiratory and diarrheal infections, decrease growth rate, slow bone development, and decrease likelihood of survival from serious illness. Children who are considered to be at increased risk for subclinical vitamin A deficiency include:

- toddlers and preschool age children;
- children living at or below the poverty level;
- children with inadequate health care or immunizations;
- children living in areas with known nutritional deficiencies;
- recent immigrants or refugees from developing countries with high incidence of vitamin A deficiency or measles; and
- children with diseases of the pancreas, liver, or intestines, or with inadequate fat digestion or absorption.

A deficiency can occur when vitamin A is lost through chronic diarrhea and through an overall inadequate intake, as is often seen with protein-energy malnutrition. Low blood retinol concentrations indicate depleted levels of vitamin A. This occurs with vitamin A deficiency but also can result from an inadequate intake of protein, calories, and zinc, since these nutrients are needed to make RBP. Iron deficiency can also affect vitamin A metabolism, and iron supplements provided to iron-deficient individuals may improve body stores of vitamin A and iron.

Excess alcohol intake depletes vitamin A stores. Also, diets high in alcohol often do not provide recommended amounts of vitamin A. It is very important for people who consume excessive amounts of alcohol to include good sources of vitamin A in their diets. Vitamin A supplements may not be recommended for individuals who abuse alcohol, however, because their livers may be more susceptible to potential toxicity from high doses of vitamin A.

Who may need extra vitamin A to prevent a deficiency?

Vitamin A deficiency rarely occurs in the United States, but the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) recommend vitamin A administration for all children diagnosed with measles in communities where vitamin A deficiency is a serious problem and where death from measles is greater than 1%.

Healthy adults usually have a reserve of vitamin A stored in their livers and should not be at risk of deficiency during periods of temporary or short-term fat malabsorption. Long-term problems absorbing fat, however, may result in deficiency. In these instances physicians may recommend additional vitamin A.

Vegetarians who do not consume eggs and dairy foods need provitamin A carotenoids to meet their need for vitamin A. They should include a minimum of five servings of fruits and vegetables in their daily diet and regularly choose dark green leafy vegetables and orange and yellow fruits to consume recommended amounts of vitamin A.

What are the health risks of too much vitamin A?

Hypervitaminosis A refers to high storage levels of vitamin A in the body that can lead to toxic symptoms. There are four major adverse effects of hypervitaminosis A: birth defects, liver abnormalities, reduced bone mineral density that may result in osteoporosis (see the previous section), and central nervous system disorders.

Maternal Nutrition and Breastfeeding

Objectives

By the end of the training the trainees should be able to:

1. understand the importance of adequate diet during pregnancy and lactation and the consequences of a poor diet on the mother and child;
2. understand why breastfeeding is best for the mother and for the baby and why the baby needs exclusive breastfeeding for 6 months and continued breastfeeding for 2 years;
3. appreciate that breastfeeding is the best source of vitamin A for a baby and the importance of her eating vitamin A rich foods (like OFSP) during this time
4. Understand the effect of unhelpful food beliefs and taboos on the nutrition of the mother and child.
5. Encourage positive attitudes and practices regarding breastfeeding and adequate nutrition for the child

Methods

Group discussions, Role playing, Question and answer sessions

Materials

Charts; Importance of maternal nutrition (conceptual framework chart),

Breastfeeding chart (MoH)

Activities

1 Maternal nutrition

- Have the trainees explain the different feeding practices encouraged during pregnancy and lactation
- Discuss the beliefs bringing out the dangers of the detrimental beliefs and encouraging positive behaviour

(10 minutes)

- Explain the effect of maternal nutrition on the health, nutrition and development of infants and the relationship between maternal nutrition and the mother's care-giving practices. Illustrate with a simple conceptual framework

(20 minutes)

Group activities

- Divide the trainees into groups and let them come up with appropriate diets for pregnant and nursing mothers

  i. Role play; Let trainees explain why the diets are considered appropriate for maternal nutrition using information given and

  ii. Let them discuss with some practical experiences in the communities where diets are not appropriate and how they can be improved (20 minutes)

2 Breastfeeding

- Have the trainees discuss the common breastfeeding practices in the community

- With the trainees list out the importance of breastfeeding and emphasize the importance of breastfeeding both to the mother and infant
- Emphasize the importance of vitamin A and breast milk as a source of vitamin A if the mothers feed on vitamin A rich food like OFSP.
- Explain the main message on breastfeeding in the infant and young child feeding guidelines
- Discuss with trainees the common problems mothers have with breastfeeding and how they can be addressed

(25 minutes)

Evaluation

Ask participants to assess the days activities and represent assessment of the day and give comments.

(What went well, what did not go well, what can we do to improve)

(5 minutes)

Key messages

- *Eat nutritious food and rest so that you can breastfeed your baby adequately, include Vitamin A Sweet potato*
- *Breastfeed your baby exclusively in the first six months*

FACILITATORS NOTES

Maternal Nutrition

What are the beliefs and practices about foods in pregnancy and lactation?

Pregnancy is the time when the baby is being formed inside the body of the mother. The unborn child is completely dependent on the health and wellbeing of the mother. If a mother has some disease, the baby may be affected. If a mother does not have enough food during pregnancy, the baby may be small and weak. Small babies are small usually because they are malnourished.

There are many beliefs and practices about pregnancy in different cultures. Some of these concern the relationship between what the mother eats and how the child will develop. The eating of certain foods is believed to affect certain characteristics of the child, in order to be able to advise mothers, it is important to understand the beliefs of mothers about various foods.

In many countries mothers believe that if they eat too much the baby will grow too big. They think that the big baby will cause a long' painful and difficult delivery. This could be a harmful belief. Mothers should be encouraged to go for ANC for close follow up. Generally, If a mother eats well, both she and her baby will be strong and healthy at the time of delivery.

There are also special beliefs and practices about diet and breast milk in different cultures. If a mother eats certain foods it is believed that her milk may be spoilt or unsuitable for her child. Other foods are believed to increase the flow of milk.

The nutrition worker needs to know about all the beliefs and practices concerning food. Inquiries should be made from grandmothers and older women in the community. Customs that favour better nutrition should be encouraged and promoted when teaching about appropriate diets. Customs that are bad have to be tactfully discouraged.

Nutrition and health during pregnancy and lactation

A woman remains pregnant for about 280 days. During this time a tiny fertilized cell grows into a fully-formed, 3-kilogram baby inside the mother's womb. The raw materials required for this growth come from the mother's diet. Therefore, during the pregnancy the mother

needs much extra food so that the baby becomes strong and healthy. The mother's diet should include all the nutrients needed for the baby to grow well. This means that a mother needs not only extra food, but also certain types of food. These will be discussed in the section below.

Mothers who do not have enough food during pregnancy have smaller babies. Such babies have a low birth-weight. They may weigh less than 2500 grams (2.5 kg) and if so are already malnourished. There are more illnesses and deaths among small babies than among larger, normal-sized babies. Low-birth weight babies are especially at risk of becoming more malnourished. Therefore, it is important for pregnant women to have enough food.

If a mother has a good diet with enough energy-giving foods during pregnancy, she becomes heavier and puts on fat. Her abdomen enlarges because her womb becomes bigger with the growing baby inside. Her breasts enlarge and get ready to produce milk. She collects a layer of fat under the skin. This is important because it is this stored fat that is used to make much of the milk in the months when she is breast-feeding. If she does not have enough food when she is pregnant, she will not store enough fat, and if she does not have enough fat she will not produce enough milk. This is particularly important for women who are initially small.

The diet of a woman when she is breast-feeding her child is also important. The food a mother eats is partly turned into breast milk. If she does not eat enough food, or does not eat foods with the right nutrients, she will have less milk. A mother makes 500 - 750 ml of milk per day. This depends on a regular supply of food. If a mother continues to breast-feed for several months without having enough food she will do so at the cost of her own body.

The amount of food a mother needs in both pregnancy and lactation also depends on the amount of work she does. If a woman has to do long hours of heavy work she must have more food than a mother who does not work. During pregnancy and lactation a mother should rest as much as possible so that her food can be used to help her baby grow.

Malnutrition in pregnant women

There is no precise way of detecting which mothers are undernourished during pregnancy. There are some women, however, among whom malnutrition in pregnancy can be suspected. They include:

- Women who are at a "high risk" according to a variety of factors;
- Women who appear malnourished; and
- Women whose previous babies have been small and malnourished.

'High risk' of malnutrition in pregnancy is found among:

- Women from very poor families;
- Widows or women who have been deserted by their husbands;
- Women who have given birth to many babies, especially over a short period of time or if the last delivery was less than a year ago;
- Women who are suffering from diseases such as tuberculosis and moderate-to-severe anaemia; and
- Women who gain very little weight during pregnancy.

The appearance of a pregnant woman can suggest whether or not she is malnourished. Observe if she is generally thin or wasted. See if there are loose folds of skin over her upper arms, chest, or abdomen, or if her arms and legs are very thin. These signs will tell you whether or not she has stores of fat under her skin. If a woman shows these signs she is probably malnourished.

All mothers suspected of being malnourished need extra help. They should be visited often. They should be encouraged to eat as much food as they can afford.

If iron and other food supplements like folic acid are available, pregnant women should receive these as a priority.

A good diet for pregnancy and lactation

During pregnancy and lactation a woman needs more food and a greater variety of food. More food is the first and most important thing. Diets based on cereals or tubers are generally good, but the woman needs more of them. She should eat one-fourth more food than she was eating before she became pregnant (25% extra).

Find out how much she was eating before. Divide that into 4 portions. Tell her, or better show her, how much one of these portions is. This is the extra food she should eat, not only in pregnancy, but right through lactation.

Pregnant and nursing mothers should eat for two persons (or at least one and a half!).

To complement the cereals a pregnant mother needs legumes or pulses especially for those who cannot afford animal foods or who do not eat them. The legumes include peas, beans, lentils, etc.

Vegetables, especially dark green leafy and coloured ones, such as tomatoes and carrots, supply special nutrients. Other vegetables and fruits are also useful.

Edible oils, butter, and sugar or molasses and their derivatives make food more tasty. They also supply energy in a concentrated form.

Animal foods are valuable but not essential. Do not emphasize meat, eggs, fish, etc. in group teaching, if such foods are beyond the means of the community.

Breastfeeding

Finding out how mothers feed their infants

It is important to know how mothers in the community feed their children. If an infant is properly fed during the first year, he or she will grow well and have a good start in life. Correct feeding and good growth in the first year mean that the risk of malnutrition in the second and third years is less. If a child is not fed well in the first year, it will be difficult to make up for this in later years. Breast milk is the most

important food in the first year and continues to be very valuable in the second year. If we know how a child is fed, we can help him better.

Tip; One can find out about feeding practices by observing and questioning. Observing means watching carefully, trying to understand, and remembering. Questioning can be done in a simple way or in a systematic way with a list of questions. Both these methods are useful and for both, the questioner's approach should be friendly and empathetic.

Some useful questions for finding: about infant feeding practices in the community.

- How soon after birth do mothers give the first breast-feed?
- What does the mother do with the colostrum-the watery milk-like fluid secreted from the breasts during the first 2 - 3 days after delivery?
- How are newborn babies fed for the first few days of life?
- Do all mothers in the community breast-feed their babies?
- For how many months does a mother breast-feed her baby in the community?
- How many times per day and night is breast milk given?
- What is the first other food or drink given to a baby? When and how is it given-by spoon, cup, bottle, or hand? At what age is it given?
- What feeding practices are forbidden (what are the food taboos)? (For example, in some areas breast-feeding during pregnancy is forbidden.)
- What foods should a mother not eat during lactation?
- Are there beliefs about certain foods or local herbs which are thought to increase the amount of milk produced by the mother?
- What food or drink is given to the baby when the mother goes out to work?
- Do any mothers have difficulties in breast-feeding their children? What are the problems?
- From whom do mothers seek advice about breast-feeding?
- If a mother is bottle-feeding her baby, why did she decide to feed the baby in that way? What mixture does she feed him?

Where breast-feeding is the normal practice in a community, little or no education is needed except for those with special problems. The traditional practice should be encouraged. In areas where traditional knowledge and practices are lost, especially in towns, education and personal support are needed. In many developing countries

breast-feeding is usual in the first year of life. Recently, certain influences have been changing this important practice. These influences include the urban way of life, women working away from their homes to earn additional incomes, increased prevalence of HIV and the advertising of infant foods. Nutrition workers should act to reduce the effect of these bad influences on breast-feeding through teaching about the advantages of breast-feeding.

Advantages of breast-feeding;

A nutrition worker must know and believe in these advantages. It is important that she and her relatives breast-feed their babies if they have any. If important and influential women in a community breast-feed their children, this will encourage others to do the same.

Breast milk is the best natural food for babies.

Breast milk contains the right mixture of fats, sugars, proteins, minerals, and most vitamins for a growing baby and is easy to digest. The nutrients in breast milk are essential for the growing body and they are in the right proportions. Cow's milk is the natural food for calves. Even if cow's milk is modified, it cannot have all the good qualities of human milk for a human baby.

Breast milk contains substances which protect the child from infection.

Breast milk contains antibodies from the mother and these help the baby get immunity. A breastfed baby will not suffer from common childhood diseases until the breastfeeding decreases.

Breast milk is suited to the growth needs of babies.

Up to 6 months of age no other food is needed. Starting from 6 months other foods should also be given, but breast-feeding should continue. Even if a small quantity of mother's milk is available to the baby, it improves the quality of other foods the baby is taking from outside.

Breast-feeding is still important for growth in the second year of life.

Because animal proteins are expensive breast feeding should continue so that it boosts the complementary foods the infant receives until 2 years of life.

Breast milk is always clean.

Mother's milk passes straight from the breast into the infant's mouth. In that way it cannot be infected by germs. Many germs grow well in milk. Other milks, such as cow's milk, are easily contaminated with germs from dirty hands, spoons, cups, bottles, or flies. These milks should be boiled before being given to babies. The utensils used in feeding infants with other milks should also be boiled before every feed. All these activities take time and the mother may not e able to do all this well.

Breast milk contains "protective" substances.

Breast milk forms lactic acid and this protects the baby against the germs that cause diarrhea.

Breast milk is available when the baby needs it - very little preparation is required

With breast milk there is a special mechanism of demand and supply. The more often a baby sucks, the more milk the mother will produce. Other types of milk need to be boiled before being fed to babies. They also need to be diluted with water when a baby is small. Any water used for dilution should also be boiled and cooled. Sugar should be added. If sugar is added to milk, it is preferable to boil the milk afterwards, as the sugar in most cases is not clean. The boiling requires fuel, and the mixing and cooling take time.

Breast milk does not cost anything.

Most foods cost money, but mothers' milk is free. An infant who is 3 months old needs 600-700 ml of milk per day. If breast milk is not given, other milk must be purchased. In an ordinary home this will mean a large part of the family's income. There will be extra cost for fuel. (A mother should have extra food when she is breast-feeding, but this costs only about a quarter or less of the price of buying milk). Illnesses are more common when you use other types of milk. Treatment of the illnesses will cost both time and money. Why waste money and invite illness by bottle-feeding?

Breast-feeding gives a feeling of security and love to the baby.

Breast-feeding permits a closeness between a baby and mother. Every human sense is involved in breast-feeding. This contact includes touching, warmth, smell, looking,

etc. If this close contact is started in the first few hours of life, the relationship is especially strong.

Breast-feeding makes a special relationship between mother and baby.

When a mother breast-feeds, her womb contracts. There are also other changes in the mother that result from breast-feeding. Mothers who breast-feed do not menstruate as soon after delivery as mothers who give artificial feeding. Mothers who breast-feed do not generally become pregnant again so soon.

Breast-feeding helps in spacing children.

In this way a mother can give full attention to a small child for a longer time before the next child is born. Of course, breast-feeding is not a certain way of avoiding pregnancy. If parents want to be sure of not having another baby too soon, they should use some other contraceptive method in addition to breast-feeding. (A contraceptive is a method which prevents a woman becoming pregnant. Most contraceptive pills should not be used by a mother who is breast-feeding; they decrease the amount of milk she produces.) Regarding other contraceptive methods, the community health worker should consult her supervisor.

Mothers in the countryside are the world's experts in breast-feeding. They learn from watching their own mothers, relations, and neighbours breast-feed their babies. They learn naturally and do not need special education. But mothers in urban areas, especially those with a first child, quite often need advice on specific matters.

The most important things the nutrition worker needs to know about breast-feeding are given below. These are in the form of answers to questions mothers may ask. Some mothers may be too shy to ask; nevertheless they need to know the answers to get the best results from breast-feeding.

<u>When should mothers start breast-feeding?</u>

A mother should put her baby to her breasts on the day he is born. It is best to start very early, within 1 or 2 hours of birth. There is little milk at that time, but it helps to establish feeding and a close relationship.

Should the first watery milk that comes before the regular milk be given to the baby?

This first milk is called colostrum. Colostrum is very good for the baby. It protects the baby from infectious diseases such as diarrhoea. The regular milk comes on the third to fifth day after the birth.

Can all mothers breast-feed their babies?

Yes almost all. There are very few conditions in which a mother cannot feed her baby like in the case of inverted nipples, HIV, but health workers have a way to deal with problems

How do you put the baby to the breast?

A mother normally knows this. Only teach her if she is having difficulty.

The mother should be comfortable. After delivery, sitting up may be painful. The mother or baby can be supported by pillows, or she may feed the baby while lying down on her side with the baby beside her.

If she touches the baby's cheek with her nipple, the baby will automatically turn his head and open his mouth. Not only the nipple, but also the areola (the dark skin around the nipple) should be in the baby's mouth. The baby's chin should be pressed up against the breast. If the breast is very full, it may press against the baby's nose and make it difficult for him to breathe. To avoid this the mother should lean towards the baby; she can also gently hold the breast away from the baby's nose with her fingers.

The baby should suck from both breasts at each feed. Feeding should start with the right breast on one occasion, and the left breast on another.

If the mother can relax, the milk will flow easily and she and the baby will enjoy the closeness and satisfaction of breast-feeding.

How often should the mother breast-feed?

The more often the baby sucks, the more breast milk will be produced by the mother. Allow the baby to breast-feed whenever he wants. During the first few days the baby

will cry when he wants milk; mother and baby usually settle into a rhythm. It is not a good thing to feed at a precise time according to a clock.

How long should a baby be fed each time?

The baby should be allowed to suck for as long as he wants. At first the time may be quite short, 5-10 minutes from each side. When the baby gets older and stronger he will suck for a longer time because he needs more milk.

Should the baby be fed at night?

Small babies need to be fed at night. In the first few weeks of life most babies wake up with hunger in the night. They need extra feeding. In many homes babies sleep next to their mothers. There is no danger of a mother crushing her child. Babies enjoy the warmth and closeness of the mother's body. Many babies feed in the night, sometimes without waking the mother.

Up to what age should a child be breast-fed?

A baby should breast-feed for as long as possible. It is good to breast-feed for at least one year. Breast milk is still important for growth in the second year of life because even a small quantity of breast milk along with other foods can improve the diet of a two-year old child.

How do you know if the baby is getting enough breast milk?

Most mothers produce enough milk for a baby to grow well for the first 4 6 months of life. Growth should be measured by weighing the baby regularly (see Module 2).

How quickly should breast-feeding be stopped?

If a mother wants to stop breast-feeding, she should do it gradually. Stopping breast-feeding should not be sudden because the baby will need some time to get used to other foods. Other foods should first be introduced and increased over a period of 2-3 months. Then the baby will suck less, and less milk will be produced.

Should breast-feeding be stopped if the mother becomes pregnant?

It is not necessary to stop breast-feeding when a mother becomes pregnant. The quality of her milk will still be good, but the quantity may decrease.

Breast-feeding for the first few months of pregnancy will cause no harm to the child in her womb. A pregnant mother who is also breast-feeding will need extra food.

It is not good for a mother to become pregnant soon after she has had a baby. She will not be able to give the first child breast milk long enough.

What can a working mother do about feeding her baby when she is away at work?

If she is going to be away for a short time, she should feed the baby just before she leaves. If she has to be away for a long time, she should try and take the baby with her. The baby can be fed anywhere. Some countries have laws to ensure that working mothers have prolonged maternity leave and time during working hours to breast-feed babies. If she must leave the baby she should make good arrangements. Another mother may give the baby a breast-feed. If the baby can take other foods, something should be carefully prepared and preserved for him. A responsible person should be shown how to feed this food to the baby when the mother is away. (Suitable foods will be discussed in Module 4.)

Should the baby be given occasional feeds from a bottle?

NO. A small baby does not need extra feeds from a bottle. If the baby cries, he should be put to the breast more often. Mother's milk provides all that a young baby needs. Boiled water may be given if a baby has diarrhoea or fever, but breast-feeding should continue. The boiled water can be given with a spoon or a special feeding cup. Bottles are often dirty, difficult to clean, and can be dangerous. Older children can drink from a cup.

Can contraceptive pills be taken while breast-feeding?

Some contraceptive pills reduce the amount of breast milk. Breast-feeding mothers should use pills which do not affect milk production or preferably use other methods of avoiding pregnancy during the period of breast-feeding. This is important because a baby should receive breast milk for as long as possible.

Overcoming problems of breast-feeding

There are a few common problems with breast-feeding, especially in the first one or two weeks. The most frequent are a mother's anxieties about her performance, and

the amount and quality of her milk. Others include flat nipples, sore nipples, and very swollen and tender breasts.

The mother should be taught to pull out the nipples, gently press out a few drops of fluid, and build up her confidence in the ability to feed successfully. This is particularly important because, for various reasons, the flow of milk during the first week after delivery may not be good

Infant and Young child feeding

Objectives

By the end of the training the trainees should be able to:

1. understand and assess the feeding patterns in the communities and the beliefs about various foods;
2. asses the different foods available in the area and determine their suitability for child feeding;
3. discuss the different food preparation procedures in preparing dishes appropriate for young children,
4. understand issues to do with quality, quantity and frequency of children's meals and the use of nutrient dense foods;
5. demonstrate appropriate cooking methods with appropriate food and using equipment available in the communities;
6. give practical feeding advice convincingly to parents encouraging positive attitudes and practices about infant and young child feeding;

Methods

Group discussions, Demonstrations, Group exercises, Role playing

Materials

A chart for feeding children

Charts showing appropriate foods for children

Charts showing multi-mix methods of preparing complementary dishes with OFSP

Cards with different foodstuffs available in the area

Activities

Introduction/Discussion

With the trainees discuss the different infant feeding beliefs and practices. Highlight the detrimental ones and discuss possible outcomes of these practices.

Discuss the importance of adequate nutrition for infant and young children taking into consideration their age and what their gut can handle; Use the chart with food groups and their functions. Does the situation change during the course of the year.

(20 minutes)

Important considerations in planning meals for children;

Discuss the important considerations for each of the groups below putting into consideration the level of development of their bodies, their small stomachs, their activity levels, the texture of the food, the idea of mixing to balance the food and how to prepare the food and how to feed the children.

Discussion should be participatory and should capture as much information on the local practices and give suggestions on how to improve them;

The groups are in 3 main categories shown below;

6-12 months, 1-2 years and 2-6 years

Discuss why they are different given the considerations mentioned above

(20 minutes)

Preparing dishes for IYC

Have the trainees list out the different foods available in the communities and write down in what form they are given to the children;

Discuss suitable ways of preparing these foods for children and the importance of using these methods to ease digestion and assimilation;

(20 minutes)

Group activity (Making a time chart)

Divide the trainees into pairs and let each one try out making a time chart for children aged 6-12 mos, 12-2 years and 2-6 years

(15 minutes)

Have them role play on how they would give a mother advice on these dishes suggested in the time chart

(15 minutes)

Demonstrations of a few selected recipes (Role play)

Let each group demonstrate one of the dishes that is suitable for the age group

(15 minutes)

Evaluation

Ask participants to assess the training and present assessment of the day and give comments.

(What went well, what did not go well and how we can improve)

(5 minutes)

Key messages:

- *After 6 months begin feeding your child on soft mashed mixed foods and continue breastfeeding until 2 years of age.*
- *Give your child three full mixed meals and healthy snacks twice a day, include Vitamin A Sweet potato.*

FACILITATORS NOTES

Infant and Young Child Feeding

Food beliefs and feeding patterns

These are passed down from one generation to the next. Religious beliefs influence feeding practices. Feeding practices may also vary among different social groups, castes, etc. Moslem communities may eat different foods from religious communities for example. Feeding patterns may also change during the year as different foods are available or scarce depending on the rains and the other activities in the household. People have different beliefs about how to feed children during when they are sick, or when they lack milk, and even the feeding itself may vary where some have children share plates while others do not. Feeding patterns may also change during the year because of the change in seasons – rainy/planting to harvest/sunshine.

Some foods are better than others for the growth and health of young children. As they grow older, children need mixtures of foods. The most important groups of food in most communities are listed below;

- Cereal grains: maize, millet, rice, sorghum, wheat,etc.
- Legumes or pulses: peas, beans, groundnuts, soyabean and lentils.
- Leafy green or coloured vegetables: spinach, carrots, tomatoes, pumpkins,

  Or fruits: pawpaws, mangoes, ovacado.
- Foods from animals, eggs, fish, milk and meat.
- Oils and sugar: vegetable oils, animal fats, sugar, molasses.

Cereals are the largest part of the diet in most areas. In some places where cereals are not easily available, people eat cassava, potatoes, or plantain. These foods are not as good as cereals for growing children. Cereals are easily digested and contain B-vitamins and some proteins that are good for the growing children. Polished cereals are not as good because they lose some of the B-vitamins during the polishing. Cereals and legumes cooked properly make an excellent food combination for infants.

All young children should gradually be given food from the first three groups listed above. If it is culturally acceptable, and if parents can afford it, small amounts of the animal foods can also be given, though these are not essential. Some oil added to food or cooked with it is especially useful because it gives much energy and also makes food soft and tasty. Remember to have as many varieties of food in the diet as possible. This increases the nutritional value of the diet.

Preparing and mixing local foods for children

Before preparing food, before eating it and before feeding children, the hands should be washed with soap and water. Germs that cannot be seen on dirty hands can be passed on to the food. These germs will be eaten with the food and may cause diarrhoea and other illnesses. Cooking kills most germs. After cooking, handle food as little as possible and keep it in a covered container.

Food for infants up to 6 months of age

A baby has no teeth and since he is only used to breast milk, the first foods given to him should be soft and should not have a strong spicy flavour (e.g., curry). If a certain cereal is the staple diet of the community, it should be used to make the first food for an infant. The cereal should be well cooked and mashed so that it is soft.

Cereal or cereal flour can be made into porridge or made very soft by adding water. In the beginning this porridge may be very thin, but as the child grows older, the porridge should be made thicker. If much water is added, the porridge will not provide much energy to the child. A thick porridge is more nourishing than a thin watery gruel.

If the cereal is cooked in oil, or if oil is added, it will increase the amount of energy the food can provide. Sugar, either white or brown, will also increase the energy in the food, but it is not as good as oil. Sweet foods are bad for the teeth. Protein-rich flours of legumes like groundnuts or soya can be added to the porridge whenever possible and enrich the porridge. In areas where composite porridges are available

encourage mothers to use these. OFSP can be used to make porridge especially the soft variety - kabode (SPK004/6/6).

Food for children 6 months to 1 year old

In the second half of the first year of life a child can take a more varied diet. Once a child is eating the cereal porridge, well-cooked leguminous and other vegetables can be mixed with cereal or given separately. New items should be added to the diet one at a time. Only small amounts should be given at first.

Gradually increase the quantity but do not force the child to eat more than he accepts. The vegetables should be very soft, without fibre, and mashed.

If a family eats animal foods and can afford to buy them, these can also be given. A lightly boiled egg or small fish can be mixed with the porridge or given by itself. Milk from animals should be boiled before it is given to children. Curd is an acceptable food for children in some areas and yoghurt is becoming increasingly available. None of these animal foods is essential for growth and health so long as adequate amounts and mixtures of vegetable foods are given.

After introducing a new food, it is good to wait for a few days before introducing another food. This helps you assess the effect of the food on the child and helps you eliminate foods the child is allergic to.

Food after the first year

After the first year, a child is usually able to eat some of the food prepared for the family. In other words, he starts sharing the family diet. It is good to separate a little food on to a separate plate for a young child in that way it is possible to see how much the child eats. It is also important to finely chop the food and even mix some other foodstuffs that can enrich the food like oil, ground nut paste or milk. Care should be taken to include foods from the three kinds of food groups. During cooking, it is necessary to remove a portion for a young child before adding strong spices to avoid giving these to the young child. As the child grows give finger foods.

The stools of a child will change when he starts eating a mixed diet. The mother should be warned about this. A healthy breast-fed child has soft yellow stools. When a child eats other foods the colour, smell, and shape of stools will change. Stools will become more like adult stools. Some mothers who breast-feed may say that their babies have diarrhoea, when actually the stools are normal-soft in consistency. It is better to demonstrate to them the difference between a breast-fed baby's soft stools and the adult type of stools of babies fed on other foods (including formula milk).

Feeding young children: how, when, and how often

To feed a young baby a mother should have patience and simple knowledge about the foods that are available and can help her baby grow to be healthy and well. Most mothers have the love and patience, but they may need to learn how to use available foods for their babies.

<u>At what age should food (other than breast milk) first be given to an infant?</u>

IYCF Guidelines recommend 6 months but many families start giving solid food at about 4 or 5 months of age. Until then breast milk of most mothers supplies all the nourishment a young child needs. Mothers need to be prepared to breast feed for a long time because it takes discipline and commitment ad requires good nutrition status. Many mothers complain of not having sufficient milk.

Frequency of complementary feeding

At first, when the baby is still being breastfed, give cereal porridge, 1-2 small spoonfuls twice a day. The amount of food and the number of feeds per day should be increased gradually. By 6-9 months of age a child should be fed 3-4 times a day in addition to breast-feeds (refer to chart).

How should the meals be timed in relation to the breast-feeds?

At first, when a child is learning to take new foods, give the food when the child is hungry before breast-feeds. When the child is taking the porridge or mixtures well, give the breast-feed first, or between other meals. In this way the baby will suck the breast hard because he will be hungry. This will encourage a continued supply of breast milk. Remember, breast-feeding should continue for 2 full years .

How much food should a child take at one meal?

If he is just starting to eat, or if a new food is being introduced, 2 small spoonfuls may be enough. Once he is used to the new food and flavour, he should be given at least 3 large spoonfuls (tablespoons) of food for each meal. If he can take more, more should be given. If he is unwilling to take this amount it may be necessary to divide the amount into 2 smaller meals. If this is done, the amount kept for the second small meal should be carefully protected from flies and dust in a covered container. It should be kept in as cool a place as possible for not more than 4 hours. AVOID this whenever possible fresh food is better and safer.

By the time the child is 1 year old, he or she should be sharing the family diet, with four or five varieties of food.

Feeding small children should be a priority within the family

Feed the young child first because he eats slowly and cannot compete with older children and adults for the limited amount of food prepared for a meal. Feed the girls as much and as frequently as the boys. By the time a child is 2 years old he or she should eat half as much as an adult.

It is good for a small child to have his own plate and portion of food.

When a child is ill, he still needs nourishment. He may lose his appetite and often refuses to eat, but he needs strength to get better from the illness. Time and care must be taken to help an ill child eat enough food. Even if small amounts of foods are eaten, this will help, if such feeding is repeated as often as possible.

Teaching and convincing mothers about correct feeding

In order to teach effectively, a nutrition worker must not only know about the correct methods of infant feeding, she must also really believe in them. A friendly relationship with people is important in teaching about feeding. Some mothers may feel insulted or threatened if another person starts teaching them about feeding their children. Make friends with mothers before teaching them. Show a loving concern for mothers and their families in other ways also. The best way to learn is from a friend.

Example of time chart for a baby 6-12 months

Early morning	Breast milk
Breakfast	Fruit juice/mashed fruit or cereal porridge with milk/gnuts/oil
Mid morning	Mashed fruit or juice or milk /yoghurt
Lunch	Cereal/potato + legume/fish/york + avocado/greens (mashed)
Afternoon	Fruit juice or mashed or milk/yoghurt
Evening	Cereal/potato + legume/fish/york + avocado/greens (mashed)
Bedtime/Night	Breast milk

Example of time chart for a child 1-2 years

Breakfast	Fruit juice/mashed + cereal porridge with milk/gnuts/sugar/oil
Midmorning	Fruit snack and /or cereal/nuts/potato
Lunch	Cereal/potato + legumes + greens/avocado
Afternoon	Milk drink or fruit
Evening	Cereal/potato + legume/fish + greens/avocado
Bedtime/Night	Breast milk

Nutrition Care for the Sick Child

Objectives

By the end of the training the trainees should be able to

1. understand the effect of common childhood illnesses on nutrition and health
2. understand the role of adequate nutrition in sick and recovering children
3. demonstrate some dishes appropriate for sick children using locally available materials
4. facilitate changes in attitudes and practices that are not helpful/detrimental in the communities
5. Encourage appropriate feeding practices for sick children

Methods

Group discussions, Demonstrations, Role play

Materials

Flip chart, markers,

Charts/posters for illustrations

Activities

Introduction

Have the trainees list down the common childhood illness in their communities. Rank them in order of decreasing prevalence and decreasing effect on health

Discuss the effect of the diseases on infants and human beings as a whole. Look at the consequences both short and long term, and the role of nutrition in these circumstances.

(20 minutes)

Nutrition care for the sick

Have the trainees list the different kind of meals or dishes that are given to children when they are ill?

Discuss their adequacy and highlight the importance nutrients /foodstuffs that are suitable for sick and recovering children

(15 minutes)

Group activity

Have the trainees come up with different dishes that are suitable for sick children using locally available materials and let them explain the methods of preparation.

(20 minutes)

Challenges

Discuss challenges that are experienced when feeding sick young children and how these can be overcome

Discuss the role of hygiene and sanitation in disease control

(20 minutes)

Evaluations

Ask participants to assess the training and give comments.

Key messages;

- *Feed your child on soft food and plenty of fluids during and after illness – include Vitamin A sweetpotato*
- *Always prepare your children's food in clean surroundings, use clean utensils and clean hands*

FACILITATORS NOTES

Nutrition Care for the sick child

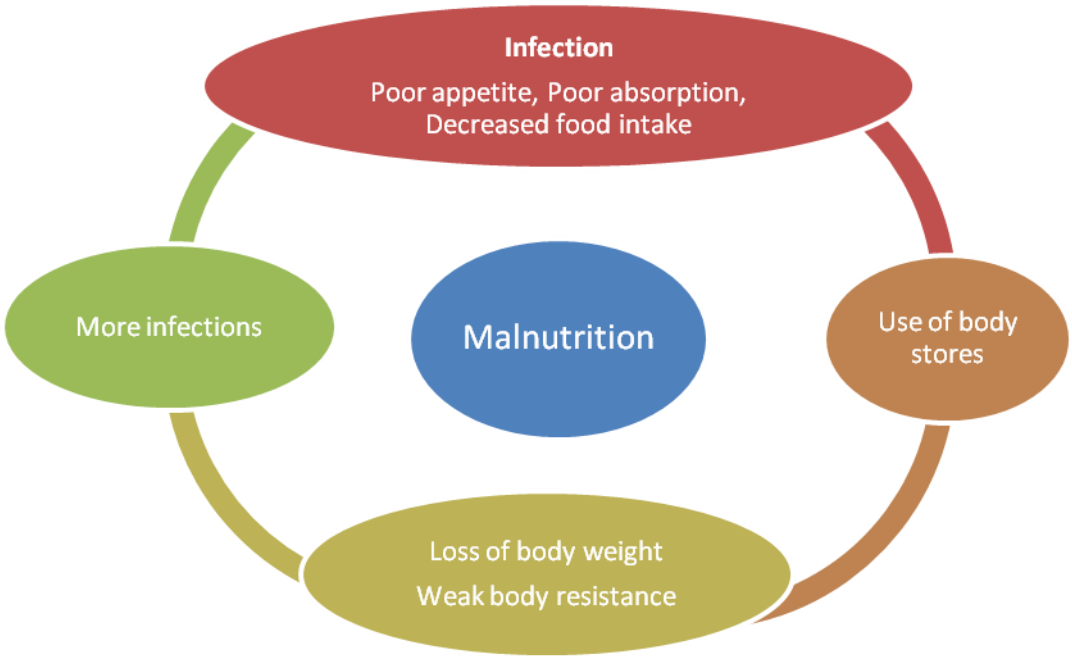
It is important to provide adequate nutrition care for a sick child so that the child does not deteriorate a lot during illness and be able to recover quickly.

Common childhood illnesses/infections

Malaria, Stomach infections, Acute respiratory infections, Pneumonia, Measles, Worm infestations

Many of the above illnesses have symptoms of fever/high tempreture, diarrhea, vomiting and aches (headache, stomachache…) and these affect the feeding and digestion of food and the healing process. Appropriate feeding during illness and recovery is important to quicken the healing process. Otherwise the child will deteriorate and malnutrition will set in.

How infectious diseases affect nutrition: Cycle of infection and malnutrition



Measles, for example, is an infectious disease that attacks children mainly when they are between 9 months and 5 years of age. In Uganda it is an important cause of death among young children. Measles germs travel through the air from a child who has the disease to another child who is not protected against measles. Some children become very ill with fever, rash, sore mouths, bad cough, fast and difficult breathing, diarrhoea, and sometimes unconsciousness. Usually the fever becomes less some days after the rash appears, and the child gradually recovers. During recovery the rash disappears. Sometimes the top layer of the skin peels off in small flakes.

Measles is a common cause of malnutrition. The fever and illness make the child lose his appetite, and he also refuses food because his mouth is sore. During fever the child uses more energy than normal, but because little food is being taken in, the body has to use up its own tissue (food stores) for energy. High tempreture also results in loss of fluids through sweating as the body tries to keep the tempreture down. A number of children with measles also develop diarrhoea. In some communities people believe that it is harmful and wrong to feed a child who has measles and so children may be starved for days or weeks. Others associate it with a social problem and seek very different counsel. It is not surprising, therefore, that many children with measles lose a lot of weight and become malnourished. This can be clearly seen on the growth charts of children who have had measles. Many children die because of the combined effects of measles and malnutrition.

The body needs more energy and fluids in fever.

The illustration above shows how infection increases malnutrition at the same time as the malnutrition makes the infection worse. To deal with the infection and malnutrition it is important to have both a good diet and medicine.

Malaria, respiratory infections and stomach infections also have similar symptoms; high temperature, diarrhoea, vomiting and so there is poor digestion, loss of fluids in the body and this can easily lead to dehydration especially in very young children. These symptoms result in loss of weight as the body uses its body stores and weakening of the immune system which exposes the child to even more infections.

Malnourished children get more infections which are more severe and last longer.

Dietary management in infectious diseases

A good diet is essential for restoring the health of the child. Most often, a sick child is starved, because the parents think that foods will make the condition worse.

Proper diet is the best general measure in all infectious diseases

In most infectious diseases, proper diet is the best treatment. It may not be easy to feed the child at first, because the child may have a sore mouth and no appetite. The parents and other relatives taking care of the child will also need to be gently persuaded to help feed the child.

- Cooked cereals of soft consistency, peas and beans cooked well, potatoes, carrots and non-fibrous vegetables well cooked, oils or butter, and milk if possible, are suitable foods.
- As a rule a small quantity of food should be given often. Firm persuasion and much patience may be needed to feed the child. However, this is very worthwhile, because correct feeding is the best way to help him overcome the disease.
- Give plenty to drink. Apart from food, an adequate fluid intake is important. This is particularly necessary for a child with fever who sweats a lot or has diarrhoea and /or vomiting.
- Other general treatments attempt to relieve discomfort and bring down fever. Half a tablet of aspirin or paracetamol given with food and fluid four times a day is helpful in bringing down fever in small children.
  *Appetite returns with the lowering of body temperature.

The treatment of any infection is not complete until the patient begins to eat normally. The best measure of nutrition during and after an illness is the weight of the child. Nutritional improvement is shown if the child regains lost weight and begins to put on more weight.

Until there are these signs of nutritional recovery, the child should receive extra food. This food can be an extra meal each day or an extra helping at each meal or small feeds in between meals. This is an essential part of the treatment. Proper feeding is as important as gilding any medicine, and it is more important than giving any health tonic.

Food needs to be soft, easily digestible, with the essential nutrients for recovery; proteins, vitamins minerals and energy, and given in small frequent quantities

Prevention of infectious diseases

Most common and serious infectious diseases can be prevented. There are two main ways of doing so:

- By decreasing the chances of individuals or the community coming into contact with the germs or parasites through appropriate hygiene and sanitation practices (Discussed later)

• By improving the defences of individuals so that, if they are infected, the germs cannot cause disease or they recover quickly. Adequate nutrition especially through eating foods rich in vitamins like Vitamin A.

Vitamin A improves the body's immunity!!

An improvement of the defences against specific infections can be achieved by immunization. Children should be immunized by the end of the first year.

Breast milk contains protective substances against the germs that cause diarrhoea and some other infections. So young children (below 2 years of age) should be breastfed especially when they are ill.

Breast milk increases the body's defence against infections.

Hygiene and Sanitation

Objectives

1. Discuss the meaning of hygiene and sanitation
2. Discuss the importance of hygiene and sanitation in our households
3. Describe the different hygiene and sanitation problems in the communities
4. Suggest ways of dealing with these problems
5. Outline the recommended practices of food, kitchen and environmental hygiene

Methods

Question and Answer, Group discussions, Role playing,

Activities

1. Hygiene and Sanitation
   With the trainees discuss what each one understands by the terms "hygiene" and "sanitation". Come up with a general description of the two terms
2. Importance of hygiene and sanitation
   With the trainees outline the importance of good hygiene and sanitation practices e.g keeping our homes clean and managing our refuse disposal adequately, and what benefits we get from doing these activities the right way.
3. Problems associated with poor hygiene and sanitation
   Diseases, Smell, Contamination, Pollution, Floods, Stress, Malnutrition …….
4. Dealing with hygiene and sanitation problems
   Discuss what can be done to deal with the hygiene and sanitation problems both at household level and community level
5. Recommended practices
   With the trainees discuss the recommended hygiene and sanitation practices in

two categories:
Food and Kitchen hygiene practices:
Environmental hygiene practices:

6. <u>Group assignment</u>
   How can this be taught to promoters? Divide trainees into two groups and let them come up with an outline on how they will conduct this training with promoters. Discuss the different outlines and agree on the best way to do it.

Key messages

- Boil drinking water and store in a clean covered container
- Wash hands with soap and before handling and serving food and after visiting the toilet

FACILITATOR'S NOTES

Hygiene and Sanitation

What is hygiene?

Hygiene usually refers to the cleanliness or cleaning procedures one should apply to clean something. It can be used at a personal level, food and environmental level. It looks at the recommended standards and the procedure to achieve and maintain them, including what to use and how to use it. It's very important in areas of food manufacturing even more so in medicine, where standards are international.

What is sanitation?

Sanitation is very similar to hygiene because it also refers to the cleanliness standards and procedures. However, it refers more to the environment. It includes procedures for refuse disposal, both liquid and solid, clearing bushes, pest and rodent control etc. It pays particular attention to areas that are likely to affect life both human, plants and animals. It is important both at household, community and national level.

We shall concentrate more at the household and community level.

Importance of proper hygiene and sanitation practices:

- Remove dirt /germs off our bodies; keep them off our foods; out of our kitchens; off food containers; so as to decrease the possibility of the germs affecting our health.
- Deal with refuse disposal to avoid smell;
- Control the breeding of rodents and flies;
- Avoid pollution especially in the case of liquid refuse and in some cases solid refuse:
- Enjoy a clean home, compound or surrounding.

Problems associated with poor hygiene and sanitation:

- High incidence of disease especially those spread by flies, insects or rodents or contaminated water, like diarrhea, typhoid fever and malaria,
- High population of rodents and pests,
- Loss of food because of the destruction by rodents and pests
- Blockages of pipes, drainages resulting in floods and pollution
- Contamination of water sources,

Dealing with hygiene and sanitation problems in the environment

- Disposing refuse in an adequate manner both at household level and community level,
- Take particular care to keep bathrooms, toilets and kitchens clean to avoid contamination and spread of germs
- Keep water sources clean
- Boil all drinking water and store in a clean container
- Have a latrine and place it away from kitchen, Keep it clean and have water for washing hands easily available
- Clear bushes, sweep your compounds, keep away litter and all empty tins and food remains that can result in breeding or pests and germs

Recommended practices

Food hygiene and proper handling of food

- Children's and caregiver's hands should be washed before handling food
- Cook food thoroughly
- Serve hot things hot and cold things cold and serve food immediately after preparation
- Avoid contact between raw and cooked foodstuffs
- Wash fruits and vegetables before eating
- Use safe water (Boiled or treated with chemical) for drinking

Kitchen hygiene

- Keep all food preparation surfaces clean,
- Use clean utensils to prepare and serve food
- Protect food from insects, rodents and other animals
- Store non perishable food stuffs in a safe place, separate from pesticides, disinfectants, and other toxic chemicals
- Cover cooked food and keep in a clean container
- Use kitchen racks to store food
- Use dish racks to dry plates and cups

Environmental hygiene

- Dispose all rubbish properly in compost pits or by burning
- Spray your home and destroy all pests and rodents
- Drain all water to soak pits or rain catchment tanks to avoid water collecting in the compound
- Clear bushes and keep your homes clean and tidy

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