The East, Central and Southern Africa Health Community (ECSA-HC) has continued to undertake advocacy and technical assistance to enable member countries to embrace and scale up nutrition interventions as a key strategy to reduce the burden of malnutrition in the region. Among its member states, ECSA-HC promotes sharing of experiences and best practices, identifying priorities, building capacity and advocating for improved policies and programmes in the region.

Nutrition training of frontline workers is one of the key actions necessary to facilitate the implementation and scaling up of high impact nutrition interventions in the region. Specifically, trained frontline nutrition workforce will improve the service delivery to the end users at all levels.

Since malnutrition has many different causes and consequences, a multi-sectoral approach is needed to address this issue. This in-service nutrition training package aims to build the knowledge, skills and competences of frontline workers working at health facility and community settings in order to improve the nutrition practices and maximize nutritional benefits. This package has been developed to provide technical reference resources that cover nutrition specific and sensitive topics necessary for the frontline workers in all contexts.

It is my hope that the use of this training package will help to strengthen the nutrition practices in our countries in an effort to scale up effective implementation of high impact nutrition interventions in the region.

Professor Yoswa Mbulalina Dambisya

Director General, ESCA-HC

Disclaimer:

The content of this training package can be adapted to suit country specific contexts. In such a case, the content of the resulting document will be the sole responsibility of the organization adapting and will not represent the views of the authors and that of the ECSA-HC. The use of the content of this training package should be duly acknowledged.
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| UNIT 1: MATERNAL, INFANT AND CHILD NUTRITION | 6 |
| UNIT 2: NUTRITIONAL ASSESSMENT | 61 |
| UNIT 3: MANAGEMENT OF NUTRITIONAL DISORDERS | 90 |
| UNIT 4: COMMUNICATION AND COUNSELLING | 127 |
| UNIT 5: NUTRITION IN VULNERABLE CIRCUMSTANCES | 148 |
| PRACTICAL | 184 |
| ABBREVIATIONS | 210 |
UNIT 1:
MATERNAL, INFANT AND CHILD NUTRITION
UNIT 1: MATERNAL, INFANT AND CHILD NUTRITION

INTRODUCTION

This introductory unit is designed to give background on nutrition across the lifecycle, starting from infancy until adulthood. Maternal and child nutrition including the requirements and importance of infant and young child feeding is also discussed.

COMPETENCIES & UNIT OBJECTIVES

Key Professional Abilities (Competencies)

a. Nutrition Care: Provide service to meet the nutrition care needs of person/community.
b. Community Health: Promote nutrition health of groups and communities.
c. Professional practice: Demonstrates professionalism in delivery of safe, competent and ethical care.
d. Communication and Collaboration: Communicate effectively and practice collaboratively.

Unit Objectives:
By the end of this unit participants will be able to:
• Identify the forms and consequences of malnutrition
• Demonstrate knowledge of key macronutrients and micronutrients in food
• Explain the importance of nutrition in women and common nutritional deficiencies in women of reproductive age
• Describe appropriate and recommended Infant and Young Child Feeding (IYCF) practices
• Recognize the nutritional requirements in school-age children and the implications on future health
• Describe the relationship between agriculture and nutrition
• Apply WASH concepts to improve health outcomes related to nutrition

UNIT CONTENT

1. Introduction to Nutrition
   • Forms of Malnutrition
   • Macronutrients & Micronutrients
2. Nutrition in Women of Reproductive Age
   • Nutrition in Adolescent Girls
   • Recommendations
3. Nutrition in Pregnant and Lactating Women
   • Recommendations for Intake and Supplementation
4. Nutrition in Children
   • Breastfeeding
   • Complementary Feeding
   • Nutrition in School-Age Children
5. Agriculture and Nutrition
   • Food Security
   • Dietary Diversity
   • Interventions
6. Water, Sanitation and Hygiene (WASH)
SESSION 1: INTRODUCTION TO NUTRITION

SESSION OBJECTIVES

By the end of this session, participants will be able to:
• Identify the forms and consequences of undernutrition and overnutrition
• Demonstrate knowledge of key macronutrients and micronutrients in food

SESSION CONTENT

Introduction to Nutrition
• Forms of Malnutrition
• Macronutrients
• Micronutrients

PREPARATION

Review session content.
Ensure materials for activities and Job Aid Handbooks are available.

SESSION ACTIVITIES | DURATION | MATERIALS
---|---|---
A. Lecture | 55 minutes | Teaching Aid, Job Aid Handbook, Manuals, Paper, Markers
B. Knowledge Check | 5 minutes |
C. Activity 1-A | 60 minutes |
WHAT IS NUTRITION?

Nutrition is the science that studies food and how food nourishes our bodies and influences our health.

It is the intake of food and the interplay of biological, social and economic processes that influence the growth, function and repair of the body.

Malnutrition occurs when nutrient and energy intake does not meet or exceeds an individual's requirements to maintain growth, immunity and organ function. It is a general term and covers both undernutrition and overnutrition.

FORMS OF MALNUTRITION

Malnutrition includes both types - undernutrition and overnutrition.

Undernutrition is the consequence of an insufficient intake of energy, macronutrients and/or micronutrients, poor absorption or loss of nutrients due to illness or increased energy requirements. In general terms, it can be an outcome of insufficient quantity and quality of food and frequent episodes of infectious disease. Undernutrition describes a range of conditions including being underweight, short, thin and/or deficient in vitamins and minerals.

Overnutrition is the consumption of excess energy or excess intake of a specific nutrient. It can result in impaired body functions, chronic diseases, as well as, overweight and/or obesity. It results from too much nutrient intake relative to nutrient requirements based on age, gender, physical activity, height, weight, and health status of the individual.

FORMS OF UNDERNUTRITION

Undernutrition can manifest as:
- Acute malnutrition
- Chronic malnutrition

Acute Malnutrition: This is usually a result of acute or short-term insufficient food intake often combined with frequent illness. It usually manifests with an acute loss of weight as a consequence of loss of fat and muscle. The two important clinical forms are:
  - Moderate Acute Malnutrition (MAM)
  - Severe Acute Malnutrition (SAM)

Chronic Malnutrition: Inadequate nutrition over a long period of time leading to possible failure of linear growth. Maternal undernutrition can also result in stunting in children – a manifestation of chronic malnutrition.
MANIFESTATIONS OF UNDERNUTRITION

Refer to Teaching Aid.

The most commonly used indicators of undernutrition are:

- **Stunting**: Stunting refers to a height-for-age below –2 z-score from the WHO Child Growth Standards and is a consequence of chronic malnutrition or long-term insufficient energy or micronutrient intake or repeated infections (or a chronic infection).

- **Wasting**: Wasting refers to a weight-for-height below -2 z-score from the WHO Child Growth Standards or a below normal body mass index (in adults) – which is a consequence of acute malnutrition. It usually results from acute or short-term insufficient food intake often combined with frequent illness.

- **Underweight**: Underweight is a weight-for-age below - 2 z-score from the WHO Child Growth Standards. This can result from either acute or chronic malnutrition. It is an indicator assessing adequacy of weight-for-age, the causes of which can be short-term or long-term and are sometimes difficult to define.

- **Micronutrient deficiencies** are the critical lack of certain vitamins and minerals (e.g. vitamin A, vitamin D, zinc, iodine) that are essential for human survival, health and well-being. These nutrients are required in very small quantities hence they are called micronutrients. These deficiencies can result from a poor quality diet or from frequent illness which may increase requirement, utilization or loss of nutrients.

IMPACT OF UNDERNUTRITION IN CHILDHOOD

Undernutrition in children can cause several long-term consequences with detrimental effects on:

- Linear growth
- Language ability
- Psychological development in adolescence
- Ability to be employed in adulthood
THE MALNUTRITION AND INFECTION CYCLE

The cycle of undernutrition and infection is well established. Poor nutrition is both a cause and consequence of infection, and infections are both a cause and consequence of poor nutrition. Importantly, poor nutrition causes decreased immunity and increased susceptibility and recurrence of infections. Infections can further lead to poor appetite, loss of nutrients and lack of nutrient absorption. This vicious cycle is especially concerning in children as it can cause impaired growth and development.

OVERNUTRITION

Overnutrition is the consumption of excess energy or excess intake of a specific nutrient. Effects of overnutrition include increased lifetime risk of chronic diseases, including diabetes, cardiovascular disease, and cancer. Overnutrition can lead to both overweight and obesity.

The double burden of malnutrition refers to the dual burden of under- and overnutrition occurring simultaneously within a population.

BMI is a simple index of weight-for-height that is used to classify underweight, overweight and obesity in adults. It is defined as the body weight in kilograms divided by the square of the height in meters. A BMI of 18.5-24.9 is considered normal weight. A BMI of 25 -29.9 is considered overweight. A BMI of over 30 is considered obese.

CAUSES OF OVERWEIGHT & OBESITY

Overweight and obesity are caused by 2 main factors.

1. Unhealthy Diet – Increase in consumption of high-calorie, high-fat, high-sugar and nutrient-poor foods such as ready-to-eat meals, fast food and soft drinks. Generally such foods are readily available, relatively cheap and heavily promoted.
2. Sedentary Lifestyle – People have become increasingly sedentary and do not get enough physical activity which increases the risk of overweight and obesity. With urbanization, more are dependent on buying food instead of growing or harvesting themselves.
CHILDHOOD OBESITY

Several factors can contribute to childhood obesity such as:
- Poor breastfeeding practices
- Unhealthy diets
- Lack of parental awareness of healthy nutrition options
- Financial constraints
- Cultural norms
- Sedentary lifestyles

CONSEQUENCES OF OVERWEIGHT AND OBESITY

Maternal and childhood obesity can lead to an increase in the risk of non-communicable diseases such as cardiovascular disease and diabetes. Moreover, maternal obesity can also cause pregnancy complications.

UNHEALTHY DIETARY PATTERNS

Ask participants what are some unhealthy diets?

Common unhealthy dietary habits and patterns are:
- Frequent consumption of foods and drinks high in sugar and fat including fast foods and soft drinks
- Poor fruit and vegetable intake
SESSION 1: INTRODUCTION TO NUTRITION

KNOWLEDGE CHECK 1

Mark each of the following statements TRUE or FALSE:

a. Childhood obesity increases the chances of obesity in adulthood
b. Sedentary lifestyle is a contributing factor for obesity
c. High-fat and high-sugar diets in infants are not associated with future obesity
d. BMI is a measurement used to identify physical activity level

CORRECT ANSWERS:

a. TRUE – Yes, childhood obesity does increase the risk of adult obesity.
b. TRUE – Low physical activity level is a risk factor for obesity.
c. FALSE – High-fat and high-sugar diets are considered risks for adult life chronic disease including obesity. This concept relates to Developmental Origins of Health and Disease, (DoHaD), which describes how during early life (at conception, and/or during fetal life, infancy and early childhood), the environment induces changes in development that have long-term impact on later health and disease risk.
d. FALSE – Body Mass Index is an index that is commonly used to classify underweight, overweight and obesity in adults. A BMI of 25-29.99 is considered overweight and a BMI of 30 and over is considered obese.

NUTRIENTS

Refer to Teaching Aid.

Nutrients are components in foods that people need to survive and grow. There are two types of nutrients: macronutrients and micronutrients.

Macronutrients provide the bulk of energy an organism’s metabolic system needs to function, while micronutrients provide the necessary cofactors for metabolism to be carried out. Both types of nutrients can be acquired from the environment. Macronutrients can be classified as carbohydrates, proteins, fats and water whereas micronutrients are classified as vitamins and minerals.
SESSION 1: INTRODUCTION TO NUTRITION

CARBOHYDRATES

- Carbohydrates provide the body with energy to keep alive, build and repair tissues, stay warm, and move and work.
- 45-65% of daily calories should come from carbohydrates (USDA); 55-75% (WHO)
- Major food sources include: Starchy roots and tubers (cassava, yams, potatoes), fruits (mangoes, papaya, guavas), grains (rice, maize), beans, legumes, milk and yogurt. Sugar products like fizzy drinks, cookies, and candies are examples of refined carbohydrates.
- The type of carbohydrate is more important than the quantity. Foods high in fibre such as fruits, vegetables, beans, legumes and whole grains have many health benefits while more refined carbohydrate-containing foods such as those with refined sugars or grains have the least benefit (can increase the risk for diabetes).

PROTEINS

- Proteins provide the body with essential amino acids that have a range of functions: growth and development, repair or replacement of tissues, production of metabolic and digestive enzymes, and production of some hormones.
- At least 10-35% of daily calories should be from proteins.
- Major food sources include: meat, poultry, fish, cheese, milk, nuts, legumes, and in smaller quantities in starchy foods and vegetables.

FATS

- Fats are the most ‘feared’ nutrient because of their tendency to cause weight gain, as well as, the fact that they are increasingly difficult to recognize in processed foods.
- Fats are a concentrated source of energy which provide the body with essential fatty acids necessary to build cell membranes and to make hormones. They also help the body to absorb and transport a group of essential vitamins. Moreover, they are necessary for growth, reproduction, skin integrity, to maintain cells and to use body fat for energy.
- 20-35% of daily calories should come from fats.
- Major food sources include:
  - Monounsaturated and Polyunsaturated Fats: Olive oil, avocados, nuts, seeds, fish, vegetable oils, sunflower oil, canola oil
  - Saturated and Trans-Fats: Cream, lard, fried foods, snacks, baked goods

IMPORTANCE OF WATER IN NUTRITION

- Water is the body’s principal fluid. It makes up about 60 percent of the body weight and is important for many body functions importantly, removing wastes, regulating body temperature and lubricating joints.
- Water is found in many beverages and foods including fruits, vegetables, milk, juice and soup.
- Recommendations for fluid intake per day varies based on age, gender, climate and activity level. During pregnancy, drinking fluids is even more important as the body is going through many changes.
SESSION 1: INTRODUCTION TO NUTRITION

MICRONUTRIENTS

Micronutrients are vitamins and minerals that are essential for human survival, health and wellbeing. These nutrients are required in very small quantities hence the name micronutrients.

**Vitamins**
- Vitamins are a group of organic compounds that play important functions in the body. Some vitamins can be stored in the body and need to be eaten often but not every day (fat-soluble vitamins A, D, E and K), while others cannot be stored and should be eaten daily (water-soluble B vitamins, vitamin C). The body can synthesize vitamin D when exposed to sunlight.
- Vitamins play different roles in helping the body in important ways. Some examples include building protein and cells, protecting cells from damage, building bones, protecting vision, metabolizing macronutrients, and helping to heal wounds. Without essential vitamins, there are several nutritional deficiencies that can result.

**Minerals**
- Minerals are solid, inorganic group of compounds that may be thought of as essential building blocks of different types of cells.
- Essential minerals include iron, zinc, calcium, and iodine among others. For example, iron is part of red blood cells, which transport oxygen through the body. Zinc has many critical functions in the body involving growth, development and immunity.

**Hidden Hunger**
Hidden hunger is the phrase used to describe the critical lack or deficiency of these micronutrients. This is the ‘hunger’ that is usually neither obvious nor felt, but has threatening consequences for population’s physical and mental health, especially for pregnant mothers and growing children. More than 2 billion people worldwide suffer from hidden hunger. Factors that contribute to micronutrient deficiencies include a poor diet and certain life events that would increase micronutrient requirements (pregnancy and lactation, diseases or parasitic infections).

FOOD GROUPS

Refer to Teaching Aid.

Food can be categorized into various food groups, within a food pyramid or plate. Healthy eating requires a diversity of foods from each food group in order to ensure adequate intake of macronutrients and micronutrients.

Ask participants if they use food groups, a food pyramid or food plate when choosing foods for themselves or when counseling in the community.
Food groups can be used as a guide for healthy eating. The main food groups are:

- Grains (including roots and tubers)
- Vegetables & Fruits
- Meats & Alternatives (including legumes, nuts, seeds, poultry, fish and eggs)
- Milk & Alternatives
- Fats & Oils

**Grains (including roots and tubers)**

Grain products, such as porridge, breads, chapati and cereals are mainly composed of flours (maize, rice, wheat, millet, sorghum) and are sources of carbohydrates. Choosing high quality grains such as whole grains with fibre is important for slower absorption. Slow absorption helps to lower cholesterol and maintain steady blood sugar levels.

Servings Per Day:
- Adults (19-51+ years) 7-10
- Adolescents (9-18 years) 6-7
- Children (4-8 years) 4
- Children (2-3 years) 3

Serving Sizes:
- 1 slice bread (35 g)
- ½ chapati (35 g)
- 125 mL (½ cup) cooked rice
- 30 g cold cereal or 175 mL (⅔ cup) hot cereal
Vegetables & Fruits
A rich assortment of coloured vegetables and fruits is important for a healthy diet. This includes dark leafy greens, root vegetables, bright red, yellow and orange fruits and vegetables. Importantly, fruits and vegetables contain fibre that is essential for optimal digestion.

Servings Per Day:
Adults (19-51+ years) 7-10
Adolescents (9-18 years) 6-8
Children (4-8 years) 5
Children (2-3 years) 4

Serving Sizes:
• 125 mL (½ cup) fresh or canned vegetable
• 125 mL (½ cup) of 100% fruit juice
• 250 mL (1 cup) leafy raw vegetables or salad
• 1 piece of fruit

Meat & Alternatives (including legumes, nuts, seeds, poultry, fish and eggs)
Animal-sources, such as red meat, poultry, eggs and fish are excellent sources of protein. There are also plant-sources of protein such as legumes, nuts and seeds. The recommended intake is 8 grams of protein for every 20 pounds of body weight. For adult women over 19 years of age, this should equal approximately 46 grams of protein per day, and for adult men, approximately 56 grams of protein per day.

Servings Per Day:
Adults (19-51+ years) 2-3
Adolescents (9-18 years) 2-3
Children (4-8 years) 1
Children (2-3 years) 1

Serving Sizes:
• 75 g /125 mL (½ cup) cooked fish, shellfish, poultry or lean meat
• 175 mL (¾ cup) cooked beans
• 2 eggs
• 30 mL (2 tbsp) groundnut paste
**Milk & Alternatives**

Intake of products such as milk, yogurt, cheese and or alternative fortified plant-sourced products such as soy, and rice milk are necessary to supply essential vitamins and minerals such as calcium and vitamin D. Choosing lower fat milk product options is important for healthy eating.

**Servings Per Day:**
- Adults (19-51+ years) 2-3
- Adolescents (9-18 years) 3-4
- Children (4-8 years) 2
- Children (2-3 years) 2

**Serving Sizes:**
- 250 mL (1 cup) milk or fortified soy beverage
- 175 g (¾ cup) yogurt
- 50 g cheese

**Fats & Oils**

Including a small amount, (2 to 3 tablespoons/30-45 mL) of unsaturated fat each day is important for the absorption of some vitamins and minerals. Choosing healthy fats from avocados and nuts, or plant-based oils for cooking (canola, olive, soybean) is important for a healthy diet. Limit butter, margarine, lard and shortening to 1 tsp per day as they are high in saturated and trans-fats.

It is important to note that alcohol, food and drinks containing refined sugars do not fall into one of the food groups and therefore should be consumed sparingly.
SESSION 1: INTRODUCTION TO NUTRITION

FORTIFICATION AND ENRICHMENT

Facilitators may ask here: What are fortified foods? What are enriched foods? How does this contribute to food groups?

Fortification is the practice of deliberately increasing the content of an essential micronutrient, i.e. vitamins and minerals (including trace elements) in a food, so as to improve the nutritional quality of the food supply and provide a public health benefit with minimal risk to health.

Enrichment is synonymous with fortification and refers to the addition of micronutrients to a food irrespective of whether the nutrients were originally in the food before processing or not.

These labels signify that the food has met each respective countries’ food fortification standards.

MEAL PLANNING

Refer to Teaching Aid.

Like food groups, a healthy eating plate is another way patients, clients and communities can be guided on food choices and servings. As depicted in the illustration, making half of your plate vegetables and fruits, a quarter of your plate grains, a quarter of your plate with protein and healthy fats and oils in moderation is key for healthy eating. Drinking water instead of sugary drinks and alcohol (including juice) is important too. Finally, staying active is critical in maintaining a healthy body weight and preventing the development of non-communicable diseases.
Use healthy oils (like olive and canola oil) for cooking, on salad, and at the table. Limit butter. Avoid trans fat.

The more veggies—and the greater the variety—the better. Potatoes and French fries don’t count.

Eat plenty of fruits of all colors.

Drink water, tea, or coffee (with little or no sugar). Limit milk/dairy (1-2 servings/day) and juice (1 small glass/day). Avoid sugary drinks.

Eat a variety of whole grains (like whole-wheat bread, whole-grain pasta, and brown rice). Limit refined grains (like white rice and white bread).

Choose fish, poultry, beans, and nuts; limit red meat and cheese; avoid bacon, cold cuts, and other processed meats.

PHYSICAL ACTIVITY RECOMMENDATIONS

Children and adolescents (5-17 years): 60 minutes of moderate to vigorous intensity physical activity daily; activities that strengthen muscle and bones should be done at least 3 times per week.

Adults (18-64 years): 150 minutes of moderate intensity physical activity during the week or 75 minutes of vigorous activity during the week; muscle strengthening activities should be done 2 or more days per week. For additional health benefits, moderate intensity physical activity can be increased to 300 minutes per week.

Adults (65 years+): 150 minutes of moderate intensity physical activity during the week or 75 minutes of vigorous activity during the week; muscle strengthening activities should be done 2 or more days per week. For those with poor mobility, physical activity to enhance balance and prevent falls, 3 or more days a week.

Moderate Intensity – Walking, cycling, gardening, housework and domestic chores, building tasks, sports, lifting moderate loads (<20 kg)

Vigorous Intensity – Running, climbing hills, fast cycling, aerobics, fast swimming, heavy digging, lifting heavy loads (>20 kg)

FOOD SOURCE ACTIVITY

SESSION 2: NUTRITION IN WOMEN OF REPRODUCTIVE AGE

SESSION OBJECTIVES

By the end of this session, participants will be able to:
• Identify the importance of nutrition in women and common nutritional deficiencies in women of reproductive age
• Discuss associated risk factors that affect adolescents’ health
• Explain the detrimental effects of an unhealthy diet on adolescent health

SESSION CONTENT

Nutrition in Women of Reproductive Age
• Nutrition in Adolescent Girls
• Nutritional Recommendations

PREPARATION

Review session content.
Ensure Job Aid Handbook is available.

SESSION ACTIVITIES   DURATION   MATERIALS

A: Lecture          15 minutes  Job Aid Handbook
B: Knowledge Check  5 minutes
WOMEN’S NUTRITION

Women’s nutrition is critical throughout their entire life especially in the reproductive age (15-44 years of age). Maternal nutrition is important for optimal fetal and infant growth and development, as well as child survival.

Maternal undernutrition is associated with short stature, iron deficiency anemia and delivery complications. Moreover, it can lead to poor pregnancy outcomes, such as:

- stillbirths
- preterm delivery
- low birth weight babies
- obstructed labour
- birth asphyxia

THE IMPORTANCE OF NUTRITION IN ADOLESCENCE

The rapid growth that occurs in adolescence, second only to that in the first year of life, creates increased demands for energy and nutrients. Total nutrient needs are higher during adolescence than any other time in the lifecycle. Inadequate nutrition can affect sexual maturation and development. Moreover, optimal nutrition is vital to prevent diet-related non-communicable diseases of adulthood such as cardiovascular diseases or diabetes.

Gender-specific nutrient needs change during this period, where dietary reference intakes of macronutrients and micronutrients are slightly higher in males as their requirements are more. Also, there are many factors that can disrupt optimal adolescent nutrition. For instance, cultural practices or poor access to nutritious foods can alter intake. On top of this, early pregnancies, infections and sedentary lifestyles can contribute and worsen poor nutrition status.

IMPACT OF NUTRITION ON ADOLESCENT GIRLS

Implications of nutritional deficiencies are especially critical for adolescent girls. Growth spurts, menstrual blood losses and poor dietary intake put them at increased risk of nutritional deficiencies, especially iron deficiency. Early marriages and pregnancies put adolescent girls at even a greater risk. Optimal nutrition during this time is critical.

AVERAGE ENERGY REQUIREMENTS OF WOMEN OF REPRODUCTIVE AGE

Average energy requirements for women 15-44 years are just under 2500 kilocalories per day.
The most common deficiency is iron deficiency anemia (IDA) due to menstrual losses and rapid growth during this period. Also, calcium deficiency is often observed as skeletal growth increases. Other micronutrients are also important as they are integral to growth, but their deficiency is not as prevalent.

On the other end of malnutrition, overweight and obesity can impact adolescents both short-term and long-term. For example, hyperglycemia or increased short-term blood sugar could develop into a long-term disorder, type 2 diabetes.

Adolescent girls are mostly vulnerable to which one of the following micronutrient deficiencies?

a. Calcium deficiency  
b. Zinc deficiency  
c. Iron deficiency  
d. Vitamin A deficiency  
e. Iodine deficiency

**CORRECT ANSWER: (C)**

Iron deficiency - Ongoing menstrual blood losses, low iron consumption and growth spurts put adolescent girls at greater risk of iron deficiency.
SESSION 3

NUTRITION IN PREGNANT AND LACTATING WOMEN
SESSION 3: NUTRITION IN PREGNANT AND LACTATING WOMEN

SESSION OBJECTIVES

By the end of this session, participants will be able to:
• Describe recommendations for weight gain and nutrient intake during pregnancy

SESSION CONTENT

Nutrition in Pregnant and Lactating Women
• Energy and Micronutrient Recommendations
• Weight Gain Recommendations

PREPARATION

Review session content.
Ensure Job Aid Handbook is available.

SESSION ACTIVITIES | DURATION | MATERIALS
--- | --- | ---
A. Lecture | 15 minutes | Job Aid Handbook
B. Knowledge Check | 5 minutes |
SESSION 3: NUTRITION IN PREGNANT AND LACTATING WOMEN

IMPORTANCE OF NUTRITION

Nutrition of the mother during pregnancy and lactation is critical for both the mother’s health as well as the health of the fetus and infant. Nutrition in the first 1000 days of a child’s life (from conception till 24 months of age) is an important determinant of future growth and development.

Energy needs during pregnancy are increased to provide for:
- Growth of fetus, placenta and maternal tissues
- Increased metabolic demands of pregnancy
- Cardiovascular and respiratory activity
- Maintaining maternal weight, body composition and physical activity throughout pregnancy
- Adequate energy stores for lactation

ENERGY NEEDS DURING PREGNANCY

The recommended extra energy intake during pregnancy is:
- 85 kcal/day (first trimester)
- 285 kcal/day (second trimester)*
- 475 kcal/day (third trimester)

*In many instances, women do not seek prenatal care until the second trimester and in such circumstances it is advised that they increase their energy intake by 360 kcal/day in second trimester to compensate for increased energy requirements.

GUIDELINES FOR PREGNANT AND LACTATING WOMEN

Recommendations for carbohydrate, protein and omega-3 daily intake are greater in pregnant women as compared to pre-pregnant women in order to reduce the risk of low birth weight neonates. In addition, in lactating women, carbohydrate intake must be increased even more than the recommendation for pregnant women. This is important because lactating females require extra carbohydrates to produce milk. Lactating women are recommended to take an extra 450 kcal/day.
SESSION 3: NUTRITION IN PREGNANT AND LACTATING WOMEN

RECOMMENDED WEIGHT GAIN

Guidelines for gestational weight gain during pregnancy have been recommended by the WHO. It is important to note that women who are overweight or obese prior to pregnancy should not gain as much weight as a woman with a normal pre-pregnancy BMI. This table is also in your job aids.

<table>
<thead>
<tr>
<th>WEIGHT CATEGORY (PRE-CONCEPTION)</th>
<th>TOTAL WEIGHT GAIN IN PREGNANCY (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight: BMI under 18.5</td>
<td>13-18 kg</td>
</tr>
<tr>
<td>Normal weight: BMI 18.5 – 24.9</td>
<td>11-16 kg</td>
</tr>
<tr>
<td>Overweight: BMI 25-29.9</td>
<td>7-11 kg</td>
</tr>
<tr>
<td>Obese: BMI greater or equal to 30.0</td>
<td>5-9 kg</td>
</tr>
</tbody>
</table>

MATERNAL OVERWEIGHT DURING PREGNANCY

If a mother is overweight or obese prior to pregnancy, or gains more than an optimal amount of weight during pregnancy it can lead to complications such as:

- Gestational diabetes (high blood sugar levels during pregnancy)
- Pre-eclampsia (a condition characterized by high blood pressure and loss of protein in the urine)
- Obstructed labor

MICRONUTRIENT SUPPLEMENTATION RECOMMENDATIONS

The WHO has encouraged the use of micronutrient supplementation, especially iron and folic acid, to prevent maternal anemia, low birth weight, and preterm birth. As well, vitamin A supplementation during pregnancy may be required in areas of severe vitamin A deficiency to prevent night blindness. Iodine supplementation may also be required in areas with low coverage of iodized salt.
KNOWLEDGE CHECK 3

All of the following statements regarding nutritional requirements during pregnancy are true EXCEPT:

a. Iron and folic acid are available as a combined supplement for pregnant women
b. Folic acid supplementation should be started preconception
c. Calcium supplementation in pregnancy can help reduce risk of hypertensive disorders of pregnancy
d. All women should gain 11-16 kg of weight during pregnancy
e. Iron supplements should be taken throughout pregnancy

CORRECT ANSWER: (D)

This statement is false. Women who are underweight are recommended to gain more weight while those who are overweight or obese pre-pregnancy are recommended to gain less weight.
SESSION 4

NUTRITION IN CHILDREN
SESSION OBJECTIVES

By the end of this session, participants will be able to:

- Explain the importance of adequate nutrition in infancy and childhood
- Describe appropriate and recommended Infant and Young Child Feeding (IYCF) practices
- Identifying key nutritional issues in school-age children

SESSION CONTENT

Nutrition in Children

- IYCF Definitions
- Principles of Breastfeeding
- Principles of Complementary Feeding
- Nutrition in School-Age Children

PREPARATION

Review session content.
Ensure Job Aid Handbook is available.

SESSION ACTIVITIES | DURATION | MATERIALS
--- | --- | ---
A. Lecture | 40 minutes | Teaching Aid, Job Aid Handbook
B. Knowledge Check | 5 minutes |
THE FIRST 1000 DAYS

Refer to Teaching Aid.

The first 1,000 days of life – from conception to 24 months of age - is a critical window of opportunity for growth and development. Optimal nutrition is important for development, cognition, immunity and prevention of non-communicable diseases in later life. Exposure to poor nutrition during this time can increase the odds of stunting, morbidity and mortality.

INFANT & YOUNG CHILD FEEDING

The WHO highlights three important feeding milestones in an infants’ life. These are:

• Within 1 hour of birth
• 6 months after birth
• At 6-24 months of age

Breastfeeding should be initiated within 1 hour of birth and continued exclusively till 6 months of age.

Nutritional and safe complementary foods should be introduced at 6 months of age, together with continued breastfeeding up to 24 months of age or beyond.

IYCF TERMS

The WHO defines exclusive breastfeeding as when an infant receives only breast milk from the mother, or expressed breast milk, and no other liquids or solids, not even water, with the exception of oral rehydration solution or medicines in the form of drops or syrups. Exclusive breastfeeding is recommended for the first 6 months of life.

Complementary feeding is defined as the process starting when breast milk is no longer sufficient to meet the nutritional requirements of infants and other foods and liquids are needed, along with breast milk. Introduction of complementary feeding can be initiated at 6 months of age and continued through to 23 months, even though breastfeeding may continue during this time and beyond two years.
The WHO has provided 7 principles of breastfeeding, in order to encourage optimal breastfeeding practice. (Participants can consult their IYCF counselling cards in their job aids, for visuals)

1. Place infant skin-to-skin with mother immediately after birth
   • This stimulates bonding and brain development
   • Also helps stimulate milk production and colostrum

2. Initiate breastfeeding within first hour of birth
   • Make sure baby is well attached
   • Colostrum (or first milk) is yellowish and full of antibodies

3. Exclusively breastfeed from 0-6 months
   • Only give breast milk to infant for first 6 months
   • Do not give anything else to infant for first six months, not even water

4. Breastfeed frequently (day and night)
   • Most newborns want to breastfeed 8-12 times a day
   • Frequent breastfeeding helps produce more breast milk

5. Breastfeed on demand every time the baby asks to be breastfed
   • Crying is a late sign of hunger
   • Early signs that baby wants to be breastfed:
     • Restlessness
     • Opening mouth and turning head side to side
     • Putting tongue in and out
     • Sucking on fingers or fists

6. Let infant finish one breast and come off by him/herself before switching to other breast
   • Switching from one breast to the other prevents infant from getting nutritious hindmilk.
     • Foremilk: more water content, quenches thirst
     • Hindmilk: more fat content, satisfies hunger
7. Good positioning and attachment
   • Signs of good positioning:
     • Baby’s body is straight, facing the breast
     • Baby’s body is close to mother
     • Baby’s head, shoulders and hips should be aligned
     • Mother should support baby’s whole body
   • Signs of good attachment:
     • Mouth wide open
     • Chin touching breast
     • More areola showing above than below the mouth
     • Lower lip turned out
     • Baby’s sucking should not hurt mother

BENEFITS OF BREASTFEEDING

Breastfeeding provides benefits to both the child and the mother.

Child
• Improved growth and nutrition status
• Decreased mortality
• Increases immunity
  • Fewer ear infections
  • Fewer skin conditions
  • Fewer gastrointestinal disorders
  • Less diarrhea
  • Fewer respiratory infections
• Increased bonding
• Lower risk of chronic diseases (diabetes, heart disease, asthma, some cancers)
• Lower risk of being overweight or obese
• Improved cognitive and motor development

Mother
• Less postpartum depression
• Less likely to become pregnant in early months
• Lower risk of maternal cancers:
  • Ovarian
  • Breast
• Faster maternal recovery and weight loss postpartum

RISKS OF ARTIFICIAL FEEDING

Artificial Feeding is when an infant is fed only on a breast milk substitute. It is strongly discouraged within the first 6 months as there are many risks to physiological and psychological health for both mother and child.
Child
- Poorer growth and nutrition status
- Increased mortality
- Increased:
  - Ear infections
  - Skin conditions
  - Gastrointestinal disorders
  - Diarrhea
  - Respiratory infections
- Interferes with bonding
- Higher risk of chronic diseases (diabetes, heart disease, asthma, some cancers)
- Increased risk of being overweight or obese
- Lower scores on intelligence tests

Mother
- More postpartum depression
- More likely to become pregnant
- Increased risk of maternal cancers:
  - Ovarian
  - Breast
- Slower maternal recovery and less weight loss in the postpartum period

ADDRESSING MISCONCEPTIONS AND CHALLENGES IN BREASTFEEDING

Refer to Teaching Aid.

Discuss the listed misconceptions one by one with the participants and then provide them with the proper explanation that should be given to mothers and families.

Some common misconceptions and challenges regarding breastfeeding are:

1. “There is not enough milk in the first three days after delivery and if any, it is not good for the baby, so baby should be given honey, sweet water or other milk during this time.”

Facilitator explanation: As soon as possible, and within one hour of birth, a baby should be given the first milk or colostrum. Even if it is small in amount, this colostrum is sufficient for the baby in the first few days of life. As the baby breastfeeds more often, more milk will be produced. If the baby is given other liquids/foods during this time, he will not feel hungry and suck on the breast and milk will not be produced.
2. “Mother’s milk depends on mother’s food habits and many foods affect the baby’s health. If the mother eats ‘hot foods’ baby will get diarrhea, if she eats ‘cold foods’ baby will get a cough.”

**Facilitator explanation:** The quality of breast milk does not depend on eating so-called ‘hot’ or ‘cold’ foods. Mother should be encouraged to eat an adequate, nutritious diet consisting of vegetables, fruits, fish, meat and dairy products. She can eat everything that is cooked in the house.

3. “When being breastfed, baby needs additional water especially in hot climates.”

**Facilitator explanation:** An exclusively breastfed baby does not need and should not be given additional water as breast milk contains sufficient water to meet the baby’s needs. The water content of breast milk adapts to the climate. The mother should drink adequate amounts of water while breastfeeding.

4. “If the mother’s breasts are small, less milk will be produced.”

**Facilitator explanation:** Milk production is not dependent on size of the mother’s breasts. Even a thin mother can produce sufficient amounts of breast milk.

5. “If the mother has had a cesarean she should not breastfeed the baby.”

**Facilitator explanation:** A mother who has had a cesarean can breastfeed while lying down, with some assistance or give expressed breast milk with cup and spoon.

6. “Breast milk should not be given if baby has diarrhea.”

**Facilitator explanation:** Breastfeeding should be continued even if the baby has diarrhea – in fact baby should be breastfed more frequently and a health worker consulted if necessary. Children older than 6 months often prefer to breastfeed when sick and refuse other foods.

7. “My baby is now 3 months old and I have to go back to work so I can no longer breastfeed him.”

**Facilitator explanation:** With some effort and help from other caregivers, breastfeeding can continue even after starting work. Learn to express breast milk soon after your baby is born. Express and store milk at home which can be fed to the baby while you are away. Express and store breast milk periodically even in the work place. Breastfeed exclusively and frequently for the whole period that you are with your baby. If possible, take baby with you to your work place (or anytime you have to go out of the home for more than a few hours). If this is not possible, consider having someone bring the baby to you to breastfeed when you have a break.

According to WHO/UNICEF expressed milk can be stored in a clean cup/container with a lid on it for up to 6-8 hours in a cool place at home. If a fridge is available, milk can be refrigerated for up to 5 days at 4 degrees centigrade. Storage should be done in a clean and safe manner.
The WHO recommends timely and adequate complementary feeding starting at 6 months of age. This means all infants should start receiving foods in addition to breast milk from 6 months onwards. It is recommended to start the infant on a complementary diet at 6 months because:

- They have increased energy and nutrient needs which cannot be met by breast milk alone at this age
- Starting complementary feeding before 6 months can put the infant at risk of infections, especially diarrhea
- They are developmentally ready for other foods

It should be adequate, meaning that the complementary foods should be given in amounts, frequency, consistency and using a variety of foods to cover the nutritional needs of the growing child while maintaining breastfeeding.

Foods should be prepared and given in a safe manner, meaning that measures are taken to minimize the risk of contamination with pathogens.

**PRINCIPLES OF COMPLEMENTARY FEEDING OF THE BREASTFED CHILD**

The WHO recommends to follow these principles for complementary feeding:
1. Practice exclusive breastfeeding from birth to 6 months of age, and introduce complementary foods at 6 months of age while continuing to breastfeed.
2. Continue frequent on-demand breastfeeding until 2 years of age or beyond.
3. Practice responsive feeding by responding to the needs of a child (avoid force-feeding).
4. Practice good hygiene and proper handling of food.
5. Start at 6 months of age with small amounts of food and increase the quantity as the child gets older, while maintaining frequent breastfeeding.
6. Gradually increase food consistency and variety as the infant grows older, adapting to the infant’s requirements and abilities.
7. Increase the number of times the child is fed complementary foods as the child gets older.
8. Feed a variety of nutrient-rich foods to ensure all nutrient needs are met.
9. Use fortified complementary foods or vitamin-mineral supplements for the infant, as needed.
10. Increase fluid intake during illness, including more frequent breastfeeding, and encourage the child to eat soft foods. After illness, give food more often than usual and encourage the child to eat more.
Minimum Dietary Diversity (MDD) is the proportion of children, 6–23 months of age, who receive foods from four or more of the 8 food groups. MDD is important for optimal growth and development of children. Assessing MDD can help make recommendations for complementary feeding. Please note that this food group classification applies to children 6-23 months of age as part of the MDD concept.

These food groups are:
- Grains, roots and tubers
- Legumes and nuts
- Dairy products (milk, yogurt, cheese)
- Flesh foods (meat, fish, poultry and liver/organ meats)
- Eggs
- Vitamin-A rich fruits and vegetables
- Other fruits and vegetables
- Fats and oils

Micronutrient powders are single-dose packets of vitamins and minerals in powder form that can be sprinkled onto any ready to eat semi-solid food consumed at home, school or any other point of use. The powders are used to increase the micronutrient content of a child’s diet without changing their usual dietary habits.

In populations where the prevalence of anemia in children under 5 years of age is 20% or higher, the WHO recommends home fortification of complementary foods with iron-containing micronutrient powders in infants and young children aged 6–23 months to improve iron status and reduce anemia.
COMPLEMENTARY FEEDING - WHAT FOODS TO GIVE AND WHY?

Complementary foods that should be given to children after 6 months include:
• Milk Products, which are rich in calcium
• Staple Foods, which provide energy from carbohydrates and sometimes protein
• Animal-Source Foods including fish, which are rich in vitamin A (liver), iron, zinc, omega-3’s
• Green Leafy/Orange Vegetables, which are rich in vitamin A, vitamin C

Other complementary foods to be familiar with are:
• Seeds, which provide energy from protein
• Pulses, also provide protein and are sources of iron
• Oils and fats, which provide energy and fatty acids

Young children need foods rich in energy and nutrients because their stomachs are small and they cannot eat large amounts at each meal.

Porridge is the most common food for young children, but its energy and nutrient content is often too low to meet their needs fully. During cooking, these flours absorb much water, which makes them bulky and thick. If water is added to make the porridge less thick and easier for young children to eat, its energy and nutrient content is further decreased. Children would need to eat large quantities of such diluted porridge in order to meet their energy and nutrient needs, but because of their small stomachs it is difficult to consume large amounts.

Ways to make porridges more energy and nutrient-rich, and easy to eat are by:
• Adding energy-rich (e.g. oil, butter/ghee) and nutrient-rich foods (such as flours of groundnut and other legumes, or sunflower seed) to the porridge
• Making porridges with germinated or fermented cereal flours

Snacks also can be provided to young children such as:
• Fruits – mango, pawpaw, banana, avocado
• Boiled eggs
• Crackers, chapati or bread with groundnut paste or peanut butter
• Small pieces of boiled or fried cassava, plantain or yam
• Puddings, yogurt
SESSION 4: NUTRITION IN CHILDREN

KNOWLEDGE CHECK 4

Mark each of these statements on breastfeeding and complementary feeding as TRUE or FALSE:

a. Complementary feeding should be done in combination with breastfeeding by the introduction of small amounts of food each day.
b. It is preferable the complementary foods should be of a watery consistency.
c. Exclusive breastfeeding begins from 1 hour after birth to 1 year of age.
d. Fortified complementary foods should be fed to infants if needed after 6 months of age.

CORRECT ANSWERS:

a. TRUE – Breastfeeding should be continued while introducing complementary foods at 6 months of age up until 2 years of age.
b. FALSE – It is recommended that complementary feeds should not be too diluted and thin, as that would reduce their energy and nutrient content.
c. FALSE – Exclusive breastfeeding should begin within 1 hour after birth to 6 months of age.
d. TRUE – One of the principles of complementary feeding includes providing fortified foods to ensure nutritional deficiencies are managed.

NUTRITION IN SCHOOL-AGE CHILDREN (SAC)

The school-age (6-12 years) is a period of continued physical growth and rapid cognitive and emotional development. Many girls will even experience their pubertal growth spurt during these years. Nutritional deprivation and disease in this group is very common and has long-term consequences.

Nutrition problems in this age group can include:

**Stunting**
Children stunted at school-age most likely experience poor nutrition in early childhood. Although the degree of stunting tends to increase in the school-age, an improvement in nutrition and living conditions can promote catch-up growth.

**Underweight**
Like stunting, underweight in this age group can be a consequence of poor prenatal nutrition status, nutrient deficiencies, infections or even inadequate caregiving.

**Wasting**
Wasting is not as common in SAC as stunting or underweight. However, acute food crises can change that.
Overweight
With rapid urbanization and nutrition transition, overweight and obesity is a growing issue amongst SAC, with the fastest growing prevalence rate in low- and middle-income countries. Overweight SAC have a greater risk of non-communicable disease later in life as well as more immediate consequences such as reduced quality of life and social isolation.

SAC need healthy foods and nutritious snacks. They have a consistent rate of growth and usually eat 4 to 5 times a day (including snacks). Many food habits, likes, and dislikes are set during this time which can contribute to stunting, underweight and overweight.

MICRONUTRIENT DEFICIENCIES IN SAC

SAC are at risk of micronutrient deficiencies because of increased energy needs. The following lifestyle factors can further increase this risk:

- Decreased meal frequency
- Inadequate caregiver attention
- Unhealthy food choices

Parasitic infections are most prevalent in this age group, which also increases the risk of micronutrient deficiencies especially iron deficiency.

The following table indicates the micronutrient requirements for children aged 4-8 years old.

<table>
<thead>
<tr>
<th>MICRONUTRIENTS</th>
<th>MALES &amp; FEMALES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin A</td>
<td>400 mcg RAE</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>600 IU</td>
</tr>
<tr>
<td>Zinc</td>
<td>5 mg</td>
</tr>
<tr>
<td>Iron</td>
<td>10 mg</td>
</tr>
<tr>
<td>Iodine</td>
<td>90 mcg</td>
</tr>
<tr>
<td>Vitamin B₁₂</td>
<td>1.2 mcg</td>
</tr>
<tr>
<td>Folate</td>
<td>200 mcg</td>
</tr>
</tbody>
</table>

mcg - micrograms
IU - international units
mg - milligrams
RAE - Retinal Activity Equivalents
SESSION 5
AGRICULTURE AND NUTRITION
SESSION OBJECTIVES

By the end of this session, participants will be able to:
• Describe the relationship between agriculture and nutrition

SESSION CONTENT

Agriculture and Nutrition
• Income Generation & Empowerment
• Food Security
• Dietary Diversity

PREPARATION

Review session content.
Ensure Job Aid Handbook is available.

SESSION ACTIVITIES | DURATION | MATERIALS
A. Lecture | 30 minutes | Teaching Aid and Job Aid Handbook
With malnutrition being an urgent and complex issue for all, it is important to acknowledge the relationship between agriculture and nutrition.

Nutrition-sensitive agriculture is a concept that aims to incorporate nutrition objectives into agriculture practices. These practices should address food and nutrition insecurity.

Three important definitions to understand are “food security”, “nutrition security” and “dietary diversification”.

**FOOD AND NUTRITION SECURITY**

Both food security and nutrition security are necessary to achieving good nutrition.

Food security is when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

Nutrition security is when all people, at all times, consume food of sufficient quantity and quality in terms of variety, diversity, nutrient content and safety to meet their dietary needs and food preferences for an active and healthy life, coupled with a sanitary environment, adequate health and care.

To address this, promotion of family farming and smallholder agriculture is an effective measure for strengthening food security.

**DIETARY DIVERSIFICATION AND NUTRITION**

Dietary diversification is the consumption of a wide variety of foods across nutritionally distinct food groups and is a common approach used to enhance nutrient intakes.

Many important vitamins and minerals essential for a healthy diet are found in greatest abundance in animal-source foods, fruits and vegetables, and legumes. However, certain staple foods, such as wheat, maize and millet, can contain high levels of anti-nutrients e.g. phytates, which reduce the absorption of available micronutrients in the food source. Micronutrient deficiencies are particularly common among low-income rural households, where diets high in starchy staples and low in micronutrients are the norm, and where adequate amounts of micronutrient-rich foods, such as meat, dairy products, legumes, vegetables and fruit, are frequently unavailable or accessible.
NUTRITION INTERVENTIONS THROUGH AGRICULTURE

There are 3 main pathways for agriculture to improve nutrition through food and nutrition security and dietary diversification:

1. Sustainable Food Production
2. Agricultural Income
3. Women’s Empowerment

SUSTAINABLE FOOD PRODUCTION

Refer to Teaching Aid.

Production of food for household consumption is the most direct pathway to increase food availability and food security. Increased production of fruit, vegetables, and animal source foods (dairy, eggs, fish, and meat) can also provide energy, protein, and fat, and also improve micronutrient content of diets.

Home gardens, whether planted in a plot of land or within sacks, are an excellent sustainable strategy to produce locally available staple foods for a family. Diversifying crops can ensure household diets are rich and diverse in macronutrients and can help alleviate micronutrient deficiencies. However, it is important to note that home gardening practices should consider water, sanitation and hygiene in order to reduce the transmission of bacteria, viruses and soil-transmitted helminths into crops.

It is also important to remember that all communities are not the same. Each community might have multiple religions, castes, cultural beliefs and practices. This can influence food habits and food production limitations including which crops can be grown and what livestock can be reared.
A few key principles can be applied to help communities select appropriate crops and agricultural practices:

- Crops, their species and varieties should be selected based on crop history and nutritional content. This is important as crop history can provide valuable information on how well crops grew in a specific climate and location, while choosing crops based on nutritional content can ensure micronutrient needs are met.

- Diversifying crops (multi-cropping) including livestock to enhance biological and economical stability is important as growing a variety of crops is less of a food security, nutrition security and economical risk, if specific crops become infected or destroyed. Crop rotation and intercropping are methods to increase the diversity of crops. Effectively, this produces a diet that is also diversified.

- Management of soil to protect soil quality is essential, as healthy soil is less susceptible to pests and will produce healthy crops. This includes using clean water, reducing tillage and reducing use of pesticides.

**AGRICULTURAL INCOME**

Economically, small-scale gardens and livestock rearing go beyond food and nutrition security. Evidence has shown small-scale gardens and livestock rearing contribute to income generation, improved livelihoods, promoting entrepreneurship and rural development.

**WOMEN’S EMPOWERMENT**

The empowerment of women is another pathway whereby agriculture can increase household nutrition outcomes and in particular for children’s health and nutrition outcomes. Empowering women through agricultural income can improve women’s status, education, knowledge, health-related practices, decision-making power, income, and access to and use of health and sanitation services.
SAFE FOOD PROCESSING & STORAGE

Educating and providing technical assistance to communities on safe food handling is another strategy in which nutrition and food security can be prioritized. Food processing and storage can serve to extend the availability of foods beyond a season and ensure food security. Safe storage of foods is important to safeguard against fungus, insects, animals and water contaminating food supply. Storing foods in dry and cool places can help ensure longer storage life.

There are three levels of processing which individuals of the community can be guided through:

• Primary processing refers to the immediate post-harvest handling activities. For cereal and legume grains, such activities include drying, threshing or shelling. Although these activities reduce the fibre content of foods, it may increase the storage life.

• Secondary processing, or transformation, usually involves some alteration in the food form. Cereal and legume grains may be cleaned, parboiled, dehulled and polished. Tubers may be peeled and sliced and then sun dried. Many grains are ground, pounded or milled and sieved to meal or flour. Fish and meat are preserved by salting, smoking and drying.

• Tertiary processing involves the conversion of uncooked materials into products and food combinations for human consumption. At the household level, processing may occur when preparing weaning foods. Fruits may be converted into jams.

Facilitator: Ask participants what other tertiary processing have you observed in your community?

It is essential that during all types of processing, water, sanitation and hygiene are prioritized. Hand washing, clean water and clean utensils should be emphasized throughout food handling.
SESSION OBJECTIVES

By the end of this session, participants will be able to:
• Apply WASH concepts to improve health outcomes related to nutrition

SESSION CONTENT

WASH
• Importance of WASH
• Reducing Transmission Strategies
• WHO Protocol of Proper Handwashing
• Handwashing Activity

PREPARATION

Review session content.
Ensure there are arrangements for the participants to practice handwashing
Ensure Job Aid Handbook is available.

SESSION ACTIVITIES | DURATION | MATERIALS
---|---|---
A. Lecture | 15 minutes | Teaching Aid, Job Aid
B. Activity 1-B | 25 minutes | Handbook, Hand Sanitizer/Wash Station
C. Activity 1-C | 15 minutes |
WATER, SANITATION AND HYGIENE (WASH)

Refer to Teaching Aid.

The WHO states that ‘access to safe drinking water and basic sanitation is essential to human health and survival.’ Water, Sanitation and Hygiene (WASH) are critical components in improving health and nutrition status of vulnerable populations.

Maternal, infant and child nutrition is severely impacted with poor WASH practices. Pregnant mothers, infants and children have higher rates of anemia, illness and death due to water-related pathogens. Pregnant women and children under two are particularly vulnerable because they have weaker immune systems. Common diseases that have a direct link to WASH include diarrhea, typhoid, hepatitis A, cholera and soil-transmitted helminthes.

INTERVENTIONS TO REDUCE TRANSMISSION

As a health-facility worker, it is your job to educate individuals on interventions to reduce transmission. It is important to remember to wash your hands before and after touching an individual in order to reduce transmission to another individual.

Proper handwashing, sanitation and clean removal of faeces from the environment, act as a primary barrier, and prevent pathogens from entering water and food sources.

Some critical handwashing periods include:
• Before preparing food or cooking
• Before eating or feeding a child
• After cleaning a child’s bottom
• After using the washroom
• Before and after attending to an individual in a health care setting

WHO PROTOCOL FOR PROPER HANDWASHING


WASH INTERVENTIONS TO REDUCE TRANSMISSION

See Activity 1-C (Page 58 Facilitator’s Manual, Page 57 Participant’s Manual)
KEY MESSAGES OF UNIT 1

1. Malnutrition encompasses both under- and overnutrition. It is the single largest contributor to disease in the world.
2. Both macronutrients and micronutrients are essential for health and wellbeing – the deficiency of micronutrients is less apparent and is often missed (hidden hunger).
3. Choosing the right types of proteins, carbohydrates and fats for dietary consumption is as important as quantity.
4. Women of reproductive age, pregnant and lactating women have specific and often increased nutritional requirements.
5. Nutrition in the first 1000 days of a child’s life – from conception till the second birthday has long lasting effects.
6. Current recommendations state that infants should be exclusively breastfed for the first 6 months of life with the introduction of complementary foods at 6 months of age and continued breastfeeding up until 2 years or beyond.
7. Proper handwashing practice is critical within the household, community and health facility to reduce infection transmission.
Activity 1-A: Food Source Activity

Duration: 60 minutes

Instructions:

1. Ask participants to divide into four groups.
2. Each group should list what they normally eat for breakfast, lunch and dinner on a flip chart or chart paper.
3. Each group should then categorize the foods listed into boxes or sections based on the food groups they belong to (e.g. vegetables & fruits, meats & alternatives, grains, milk & alternatives, fats & oils).
4. Discuss the nutrients each of the foods contain (iron, vitamin A, iodine, vitamin C, carbohydrate, fat and protein). Remind them that many foods are sources of multiple nutrients.
5. Discuss gaps in intake as a group – brainstorm other food sources available in the community that could meet your daily requirements.
ACTIVITY 1-B: HANDWASING SKILLS

Introduce the participants to the competency assessment tool:

This competency assessment tool will be used throughout the training both in classroom activities and during the practicum. Participants will mostly use the tool to guide each other through practice of the skills, so they will require an explanation on how to use the tool to evaluate each other.

The Bondy’s rating scale has been adapted and simplified to objectively evaluate participants in practicum settings. Learners are observed for the following characteristics and assessed on a scale from 0 to 1. Participants will use the scale in practice to evaluate their peers and to provide feedback to each other.

<table>
<thead>
<tr>
<th>Scale Label</th>
<th>Score</th>
<th>Characteristics of Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proficient practice</td>
<td>1</td>
<td>• What the worker does is safe, appropriate and accurate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The worker focuses on the patient.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The worker performs skill using minimal time.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The worker looks confident and does not require any hints.</td>
</tr>
<tr>
<td>Incomplete / unsafe practice</td>
<td>0</td>
<td>• What the worker does is unsafe, not completely accurate or incomplete.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The worker does not show good skill.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The worker uses a lot of time and energy to perform the skill.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The worker looks uncomfortable and needs a lot of hints.</td>
</tr>
</tbody>
</table>

The steps described in the standard work description are reflected in the assessment tool as in the one above.
ACTIVITY 1-B: HANDWASHING SKILLS

Duration: 25 minutes

Instructions: Demonstrate the process of handwashing as described by WHO. See steps below. Practice as a group, then have your colleagues complete the checklist below while you demonstrate the skill.
### ACTIVITY 1-B: HANDWASHING SKILLS

<table>
<thead>
<tr>
<th>Handwashing Activity 1-B</th>
<th>Rating</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACTIVITIES / PROFESSIONAL BEHAVIORS</strong></td>
<td>Circle number</td>
<td></td>
</tr>
<tr>
<td>Turn on the tap and wet hands</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Apply liquid soap, enough to cover entire surface of hands</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub hands palm to palm</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub dorsum of each hand with the palm of the other hand</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub palms with fingers interlaced</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub back of fingers to opposite palms with finger interlaced</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub left thumb while clasping in right palm and vice versa</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub finger tips of each hand in the opposite palm</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rinse hands with water and dry them thoroughly with a single-use towel</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Use single-use towel to turn off the faucet</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL POINTS</strong></td>
<td>/10</td>
<td><strong>PERCENTAGE:</strong> %</td>
</tr>
<tr>
<td><strong>FINAL RESULT</strong></td>
<td>□ &lt; 50% = Incomplete/unsafe practice</td>
<td>□ 50-75% = Minimum level of safe practice</td>
</tr>
</tbody>
</table>
ACTIVITY 1-C WASH

Duration: 15 minutes

Instructions:
Divide participants into 3 groups and assign 2 cases per group. Ask participants to identify where the risk for transmission of bacteria is present within each case using the following framework. Afterwards, ask them to consider what could be changed in the scenario to reduce the risk of illness for those involved. When participants are finished, discuss the scenarios as a class.

Sanitation and Clean Environment

Safe Drinking-water (collection, transport, storage, treatment)

Handwashing & Food Hygiene
Cases

1. After treating Mr. Kirui for a diarrheal illness, Nurse Hali proceeds to take a pregnant patient’s temperature with a thermometer. The risk of transmission occurs because of lack of handwashing. Nurse Hali should perform handwashing prior to proceeding to treat the next patient.

2. After changing an infant’s diaper, Nurse Hali rinses her hands then heads for lunch. The risk for transmission occurs because of lack of proper handwashing and food hygiene. Nurse Hali should complete handwashing after coming in contact with an infant’s diaper prior to leaving for lunch.

3. While preparing porridge, a mother reuses utensils and water from the closest pond. The risk of transmission occurs because of lack of safe drinking water and lack of food hygiene. The mother should use utensils that have been cleaned and use safe drinking water for cooking.

4. Kiira, a 2 year old, is waiting for her mother to feed her dinner, she waits on the floor while the family chickens pick at dropped crumbs from dinner being prepared. The risk of transmission occurs from lack of sanitation and a clean environment. Kiira’s mother should ensure that the chickens are kept out of the house to reduce the risk of transmission of bacteria from chicken faeces from the floor of the house.

5. Mosi recently slaughtered one of the family’s goats for a community celebration. While he waits for it to be prepared, flies surround the meat. The risk of transmission occurs from lack of clean environment and food hygiene. Mosi should place the meat in a covered container until it is ready to prepare to reduce the risk of the flies transmitting bacteria to the food.

6. Nyo is playing in the river with his friends after school, it’s hot that afternoon, so they drink the river water to keep hydrated. The risk of transmission occurs from lack of safe drinking water. Nyo should only drink treated river water or bottled water to ensure he doesn’t pick up bacteria from the water.
UNIT 2: NUTRITIONAL ASSESSMENT
INTRODUCTION

This unit takes on the basic techniques in nutritional assessment including clinical, dietary, laboratory and anthropometric assessments to evaluate the nutrition status of both adults and children in limited resource settings.

COMPETENCIES & UNIT OBJECTIVES

Key Professional Abilities (Competencies)

a. Nutrition Care: Provide service to meet the nutrition care needs of person/community.
b. Community Health: Promote nutrition health of groups and communities.
c. Professional Practice: Demonstrates professionalism in delivery of safe, competent and ethical care.
d. Communication and Collaboration: Communicate effectively and practice collaboratively.

Unit Objectives:
By the end of this unit participants will be able to:

• Explain anthropometric, biochemical and physical examination to assess nutritional status
• Identify and use the tools employed for assessing and measuring dietary intake
• Demonstrate skills in anthropometric assessment following the WHO protocol

UNIT CONTENT

1. Nutritional Assessment: Clinical Signs & Dietary Tools
   • Clinical Assessment
   • Dietary Assessment
   • Laboratory Investigations

2. Anthropometry
   • Weight
   • Length/Height
   • Mid-Upper Arm Circumference (MUAC)
   • Growth Chart Interpretation
   • SBAR
   • Skills Lab

3. Identification of MAM and SAM
   • WHO Protocol to Identify MAM and SAM
   • Key Principles of Record Keeping
   • Diagnosis Case
SESSION OBJECTIVES

By the end of this session, participants will be able to:
• Understand clinical signs of malnutrition
• Describe dietary assessment tools to identify dietary intake of macronutrients and micronutrients

SESSION CONTENT

Nutritional Assessment: Clinical Signs & Dietary Tools
• Clinical Assessment
• Dietary Assessment
• Laboratory Investigations

PREPARATION

Review session content.
Ensure Job Aid Handbook is available.

SESSION ACTIVITIES | DURATION | MATERIALS
--- | --- | ---
A. Lecture | 25 minutes | Teaching Aid, Job Aid Handbook
B. Activity 2-A | 25 minutes |
C. Knowledge Check | 5 minutes |
DEFINITION

Nutritional assessment is defined as the interpretation of information obtained from anthropometric, biochemical, clinical and dietary studies. A complete health assessment is often needed within a nutritional assessment to evaluate and manage nutrition issues.

A health assessment of an adults or child should begin with a health history and diet history, followed by physical examination and anthropometry.

A clinical assessment is a general examination of the body and physical function especially to help determine nutritional status, signs of malnutrition and nutrient deficiencies. Laboratory testing may or may not be needed, but this is also depending on the resources of the health-facility.

HEALTH ASSESSMENT

Beginning with a health history is an excellent way to start the nutritional assessment process of a patient or client. Health history can have the following components:

- Biographic data (name, address, gender, birth date, languages spoken, marital status, children)
- Reasons for seeking care
- History of present health concerns
  - When did the health concern begin?
  - Duration?
  - Severity?
  - Any associated symptoms?
  - Is it better, worse or the same since it began?
  - Are you able to continue work or other activities?
- Past health history
  - Any childhood illnesses?
  - Are immunizations up-to-date?
  - Any surgeries or accidents?
  - Any allergies?
- Family health history (parents’, grandparents’ and or childrens’ health and longevity)
- Lifestyle and health practices (description of a typical day, type of work, exercise habits, sleeping habits, use of medications or other substances (alcohol), stressors, tobacco use)
- Diet (past and present diet, weight change, supplements)
There are two ways to examine diet – retrospectively or prospectively.
- Retrospective is the most common way to examine diet. This is by asking about someone’s past diet, for example: ‘What foods have you eaten in the past 1 week?’ or ‘What foods have you eaten in the last 24 hours?’
- Prospectively, means to assess by asking about present diet.

RETROSPECTIVE METHODS: DIET HISTORY

- This involves a retrospective dietary assessment usually over a longer period of time (e.g. 1 week, 24 hours)
- Questions are asked about types, amount and frequency of food intake
- Very useful in assessing diets of infants and children – mother can provide diet history, especially when diets are relatively consistent
  For example:
  - Is your 3 month old baby exclusively breastfed?
  - What have you been eating in the past 2 days since the fever began?

Diet history is important in order to understand if any changes in diet were made, what foods are most frequent and if supplements were started at a certain time. Diet history is also important to observe seasonal changes.

PROSPECTIVE METHODS: FOOD DIARIES

A food diary consists of a detailed description of current food and drink intake over a period (usually three to five days) recorded at time of consumption. The method provides detailed dietary intake data that are more representative of usual intake. This is possible with literate subjects.

CLINICAL ASSESSMENT

Physical examination and clinical assessment is an important part of health and nutritional assessment.

Some common signs of nutritional deficiencies are:
- Pallor (skin appears to be pale)
- Goitre (swelling of the thyroid gland that causes a lump to form at the front of the neck)
- Rickets (bowing of legs, widening of wrists)
BILATERAL PITTING EDEMA

Refer to Teaching Aid.

Bilateral pitting edema is a sign of severe acute malnutrition regardless of weight or mid-upper arm circumference (MUAC). Thumb pressure is applied on top of both feet for 3 seconds. If there is a pit (indentation) in the foot when lifting the thumb, pitting edema is present. The pit can remain in both feet for several seconds. For positive assessment, edema must be present in both feet.
KNOWLEDGE CHECK 1

Nutritional assessment can be defined as the collection and interpretation of information obtained from all of the following sources EXCEPT:

a. Anthropometry  
b. Clinical assessment  
c. Dietary history  
d. Physical activity log

CORRECT ANSWER: (D)

Nutritional assessment is related to the information obtained from dietary history, anthropometry and clinical assessment. A physical activity log does not provide information for nutritional assessment.

HEALTH ASSESSMENT ACTIVITY

SESSION 2
ANTHROPOMETRY
SESSION OBJECTIVES

By the end of this session, participants will be able to:
• Demonstrate skills in anthropometric assessment following the WHO protocol
• Interpret growth charts to identify stunting, wasting, underweight and overweight in children under-5
• Communicate findings using the principles of interprofessional communication

SESSION CONTENT

Anthropometry
• Weight
• MUAC
• Growth Chart Interpretation

PREPARATION

Review session content.
Ensure Job Aid Handbook is available.
Ensure all equipment for anthropometry is available.

SESSION ACTIVITIES | DURATION | MATERIALS
--- | --- | ---
A. Lecture | 45 minutes | Teaching Aid, Job Aid Handbook, MUAC tapes (child and adult), Baby weight scale (preferably Hanging spring scale), 1 infant simulation model
B. Knowledge Check | 5 minutes |
C. Skills Lab | 60 minutes |
ANTHROPOMETRY

Refer to Teaching Aid.

Anthropometry is the single most universally applicable, inexpensive, and non-invasive method available to assess the size, proportions, and composition of the human body. Some anthropometry measurements we will talk about are weight, height, length and mid-upper arm circumference (MUAC) in infants and children.

IMPORTANCE OF ANTHROPOMETRY

In children, anthropometry is used for assessment of growth and development. Body measurements such as weight, length/height and MUAC, in combination with age and sex, are used to assess growth or growth failure with help of growth charts.

In adults, Body Mass Index (BMI) is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. It is defined as a person’s weight in kilograms divided by the square of his height in meters (kg/m$^2$).

INTERPRETATION OF ANTHROPOMETRY

Anthropometry is used for the diagnosis of both undernutrition and overnutrition. We will be practicing growth chart plotting and interpretation in this session.

Undernutrition can be categorized as wasting, stunting or underweight.

Overnutrition can be categorized as overweight or obese. For adults, WHO defines overweight and obesity as follows:
• Overweight is a BMI greater than or equal to 25; and
• Obesity is a BMI greater than or equal to 30.

KEY CONSIDERATIONS BEFORE INITIATING ANTHROPOMETRY

• Start anthropometry with full preparation (equipment, material for documentation, assistant if needed). Do not rush into taking measurements unprepared.
• Check equipment before initiating measurement. Ensure it is in proper position and working condition. Moreover, familiarize yourself with the working of the equipment, its calibration and units.
• Being prepared helps in making accurate and precise measurements.

Facilitators are encouraged to demonstrate to the participants the various anthropometric instruments (weighing scale, standing scale etc.) while going through the relevant protocols. The parts of the instrument and methods to be followed should be highlighted.
WEIGHT

Refer to Teaching Aid.

In ideal circumstances, WHO recommends to weigh infants and children using a scale with the following features:

- Solidly built and durable
- Electronic (digital reading)
- Measures to a precision of 0.1 kg (100 g)
- Allows tared weighing
  - If the child can’t stand, the mother holds the child
  - If able to stand, the child stands on the scale

“Tared weighing” means that the scale can be reset to zero with a person or an object standing or lying on it. In some cases it is used to weigh infants or children on an adult scale. On infant scales, taring the weight allows for the scale to return to zero so that anything on the scale (e.g. a cloth or towel) is not counted in the weight of the infant for a more accurate reading.

An example of the former use is when a mother can stand on the scale, be weighed, and the scale tared (i.e. return to zero, with the mother on the scale). While remaining on the scale, she is given her child to hold, the child’s weight alone appears on the scale and this can be used as an accurate measure of the child’s weight. On most digital scales there is a “tare” button which can be pressed for this function.

However, electronic and tared weighing scales are not always available. Some of the other scales used for weighing children are:

- Infant weighing scale: Appropriate for weighing infants lying down or sitting, but only within the scale’s maximum weight limit.
- Hanging spring scale: Normally used in community or emergency settings for small children. Weighs up to a maximum 25 kg.
- Paediatric balance beam scale: Appropriate for accurate weighing up to 65 kg in some types.
- Bathroom scale: For older children who can stand independently.
WHO PROTOCOL FOR WEIGHING CHILDREN UNDER 24 MONTHS WITH A HANGING SPRING SCALE

- Wash hands with soap and water before and after touching the child or their surroundings. If soap and water are not available, hand antiseptic should be used.
- Adjust the pointer of the scale to zero level.
- Suspend the weighing pants from the lower hook of the scale and readjust the scale to zero or weigh the pants and subtract it from the final weight measurement.
- Remove the child’s diaper and heavy clothing (ideally the baby should be undressed completely, if the weather allows for it and is culturally acceptable).
- Place the child in the weighing pants and hook the pants to the scale.
- Ensure the child is hanging freely without holding onto anything.
- When the child is stable, read the scale at eye level to the nearest 0.1 kg (100 g) and record the value.
- Remove the child slowly and safely.

WHO PROTOCOL FOR WEIGHING CHILDREN UNDER 24 MONTHS WITH AN INFANT WEIGHING SCALE

- Wash hands with soap and water before and after touching the child or their surroundings. If soap and water are not available, hand antiseptic should be used.
- Remove the child’s diaper and heavy clothing (ideally the baby should be undressed completely, if the weather allows for it and is culturally acceptable).
- Calm the child down if agitated.
- Place scale on a hard, flat and unobstructed surface.
- Check and set the weighing scale for zero error.
- Place the child in a supine position (lying face upwards) on the weighing scale. Remain next to and facing the child at all time.
- Read and record the child’s weight to the nearest 0.1 kg (100 g).

WHO PROTOCOL FOR WEIGHING CHILDREN OVER 24 MONTHS USING A STANDING SCALE

- Wash hands with soap and water before and after touching the child or their surroundings. If soap and water are not available, hand antiseptic should be used.
- Help child remove outer clothing and footwear.
- Calm the child down if agitated.
- Place scale on a hard, flat and free from obstruction.
- Check and set the weighing scale for zero error.
- Guide the child to step on the scale and stand at the center.
- The child should not be holding onto any object or person.
- Read and record the child’s weight to the nearest 0.1 kg (100 g).
SESSION 2: ANTHROPOMETRY

KNOWLEDGE CHECK 2
Mark each of the following statements as TRUE or FALSE:

a. The gender of a child does not matter when using weight reference standards
b. Anthropometry is useful in detecting growth failure in children
c. Weighing scales must be precise to at least 1 kg according to WHO
d. In children, regardless of age, it is essential to remove all clothing before weighing

CORRECT ANSWERS:

a. FALSE – Gender of a child is important when comparing weight to reference standards. They are different reference standards for girls and boys
b. TRUE – Anthropometric measurements are helpful in evaluating growth of a child and detecting growth issues if any
c. FALSE - Infant, child and adult weighing scales should be precise to least 0.1 kg (100 g) according to WHO
d. FALSE – It is recommended that when weighing children less than 2 years all clothing should be removed. In children older than 2 years, all but the underclothes should be taken off. However, in some cases clothing cannot be completely removed because of weather-related and cultural reasons.

MID-UPPER ARM CIRCUMFERENCE (MUAC)
Refer to Teaching Aid.

Mid-upper arm circumference (MUAC) is the circumference of the left upper arm and measures the muscle mass of the upper arm. It is used to assess the nutritional status of both children (over 6 months) and adults.

MUAC can be used to diagnose moderate acute malnutrition (MAM) or severe acute malnutrition (SAM). MAM is characterized by an MUAC of 11.5-12.5 cm, while a MUAC of less than 11.5 cm indicates SAM (as per WHO/UNICEF guidelines).

WHO PROTOCOL FOR MEASURING MUAC

The WHO protocol for measuring MUAC is as follows:

- Wash hands with soap and water before and after touching the child or their surroundings. If soap and water are not available, hand antiseptic should be used.
- Expose the child’s left arm and shoulder.
- Bend the elbow at a 90° angle with the palm facing upwards.
- Locate the most prominent part (tip) of the child’s shoulder and mark it.
- Measure the distance from the shoulder mark to the tip of the elbow and divide the distance by two, which is the midpoint of the child’s upper arm.
- Mark the midpoint of the child’s upper arm.
- Release the child’s left arm and it will hang beside the child’s body.
- Wrap the tape over the marked midpoint (ensure the tape is not upside down).
• Pull the tape tight around the mid-upper arm so that it touches the child’s skin without
  compressing the underlying tissue. Ensure the measurement is on the outer surface of the
  child’s arm.
• Read the MUAC and record to the nearest 0.1 cm.
*Children under 24 months should be held in the mother’s lap

GROWTH INDICES

There are 4 growth indices that are important to recognize when interpreting measurements and
choosing the appropriate growth chart. There is:
  • Length/Height-for-Age – identifies stunting and chronic malnutrition
  • Weight-for-Age – identifies underweight, acute/chronic malnutrition
  • Weight-for-Length/Height – identifies wasting and acute malnutrition
  • BMI-for-Age – identifies underweight and overweight in adults

EXAMPLE OF A GROWTH CHART

Refer to Teaching Aid

This chart interprets length-for-age for boys from birth to 2 years.
  • The curved lines represent reference lines
  • Age is plotted on x-axis and length on y-axis
  • The line labeled ‘0’ represents the average or the median while the other curved lines are
    z-score lines which represent deviation from the average
  • Z-score lines are numbered 2,3 or -2, -3 (depending on direction)

GROWTH CHART INTERPRETATION

Refer to Teaching Aid.

This chart interprets weight-for-age for boys from birth to 6 months.
  • Age (in weeks or months) is on the x-axis; weight in kilograms is on the y-axis
  • A point has been plotted for an infant boy who is 6 weeks old and weighs 5 kg
  • Curved lines on the graph are reference lines that help interpret the plotted points and trends
Z-SCORE INTERPRETATION

The reference lines on the growth charts are called z-score lines because they are based on z-scores, also known as standard deviation (SD) scores. Z-scores or SD scores are used to describe how far a measurement is from the median (average). In general, a plotted point that is far from the median in either direction (for example, close to the 3 or -3 z-score line) may represent a growth problem, although other factors must be considered, such as the growth trend, the health condition of the child and the height of the parents.

Using the appropriate growth chart, plotting, and identifying the z-score can help determine if the child/adult is underweight, overweight, obese, stunted or wasted. Using this table, find the identified z-score and follow along the row to the appropriate growth chart measurement.

<table>
<thead>
<tr>
<th>Z-score</th>
<th>Growth Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Length/Height-for-Age</td>
</tr>
<tr>
<td>Above 3</td>
<td>A child in this range is very tall. Tallness is rarely a problem, unless it is so excessive that it may indicate an endocrine disorder such as a growth-hormone-producing tumor. Refer a child in this range for an assessment if you suspect an endocrine disorder (e.g. if parents of normal height have a child who is excessively tall for his or her age).</td>
</tr>
<tr>
<td></td>
<td>A child whose weight-for-age falls in this range might have a growth problem, but this is better assessed from weight-for-height/length or BMI-for-age.</td>
</tr>
<tr>
<td>Above 2</td>
<td></td>
</tr>
<tr>
<td>Above 1</td>
<td></td>
</tr>
<tr>
<td>0 (median)</td>
<td></td>
</tr>
<tr>
<td>Below -1</td>
<td></td>
</tr>
<tr>
<td>Below -2</td>
<td>Stunted It is possible for a stunted or severely stunted child to become overweight.</td>
</tr>
<tr>
<td>Below -3</td>
<td>Severely stunted It is possible for a stunted or severely stunted child to become overweight.</td>
</tr>
</tbody>
</table>
SBAR (PRONOUNCED S-BAR)

SBAR is a proven structured approach to use when communicating concerns to interprofessional colleagues. It can prove very useful in communicating nutrition and clinical assessment findings in an interprofessional scenario.

**S – Situation**
Give the individuals name, age, gender and the reason for your communication. You should also state the urgency with which the situation needs to be addressed.

**B – Background**
Provide a brief but thorough clinical history to put the situation in context for the listener.

**A – Assessment**
Provide a recent clinical assessment of the situation, including the latest findings, anthropometric measurements, results, current condition and needs. Then provide your assessment of the situation.

**R – Recommendations**
Be clear and specific about what you are asking or requesting from the listener and ensure that you have understood what the listener expects in return.

**SBAR**

Direction: As a group practice communicating assessment findings using the SBAR model
A child requires transfer to a local health clinic from your community for treatment of SAM. What would you need to include in your report to the receiving clinic?

S – Situation – Give the individuals name, age, gender and the reason for your communication (e.g. child identified with SAM, needs inpatient treatment)

B – Background – How long has the child been ill? Have they received treatment for malnutrition in the past? Is the family with the child?

A – Assessment – Provide weight, MUAC, any other clinical findings e.g.: edema, tiredness, etc.

R – Recommendations – The child requires transfer to your institution.

**SKILLS LAB**

See Activity 2-B (Page 84 Facilitator’s Manual, Page 83 Participant’s Manual)
SESSION 3

IDENTIFICATION OF MAM AND SAM
SESSION 3: IDENTIFICATION OF MAM AND SAM

SESSION OBJECTIVES

By the end of this session, participants will be able to:

• Describe the proper steps to identify SAM and MAM using WHO protocol
• Define key principles for record keeping in health
• Apply growth chart interpretation skills to diagnose a case

SESSION CONTENT

Identification of MAM and SAM

• WHO Protocol for Identification of MAM and SAM
• Key Principles for Record Keeping

PREPARATION

Review session content.
Ensure Job Aid Handbook is available.

SESSION ACTIVITIES | DURATION | MATERIALS
---|---|---
A. Lecture | 20 minutes | Job Aid Handbook
B. Knowledge Check | 10 minutes | Job Aid Handbook
WHO CRITERIA FOR IDENTIFICATION OF MAM IN CHILDREN (6-59 MONTHS)

Moderate acute malnutrition (MAM) in children is defined as weight-for-height between -3 and -2 z-scores of the WHO child growth standards without edema, or MUAC of less than 12.5 cm but equal to or more than 11.5 cm.

- If MUAC (in children 6-59 months) is less than 12.5 cm but equal to or more than 11.5 cm then it can also be identified as MAM.
- Presence of one of these or both is sufficient to make the diagnosis of MAM, if bilateral pitting edema is absent.

WHO CRITERIA FOR IDENTIFICATION OF SAM IN CHILDREN (6-59 MONTHS)

Severe acute malnutrition (SAM) is defined by the WHO as the presence of edema in both feet (bilateral) or severe wasting (weight-for-height/length ≤ -3 z-score or mid-upper arm circumference (MUAC) < 11.5cm).

Thus the presence of any one or a combination of the following can be categorized as SAM:

- Bilateral pitting edema.
- MUAC less than 11.5 cm.

<table>
<thead>
<tr>
<th></th>
<th>MODERATE ACUTE MALNUTRITION</th>
<th>SEVERE ACUTE MALNUTRITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilateral Pitting Edema</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>MUAC</td>
<td>Between 11.5-12.5 cm</td>
<td>Less than 11.5 cm</td>
</tr>
<tr>
<td>Weight-for-height/length</td>
<td>Between -2 z-score to -3 z-score</td>
<td>Less than -3 z-score</td>
</tr>
</tbody>
</table>
WHO IDENTIFICATION OF SAM IN OTHER AGE GROUPS

Although not well-defined, SAM identification in other age groups is as follows:
• School-age Children and Adolescents (5-19 years) – very low BMI-for-age
• Adults – very low BMI
• Pregnant Women – MUAC <21 cm SAM; 21-23 cm MAM

KEY PRINCIPLES FOR RECORD KEEPING

There are many principles when recording an individual’s history and physical examination findings. As a community worker record keeping is critical to:
• Compile a complete record of the individual’s health.
• Enable continuity of care for the individual between the community worker and other health practitioners

Five main principles for record keeping are:
• Be clear, concise and accurate
• Be readable
• Dated, timed and signed
• Abbreviations/short form should be only used if well-known and described
• Only record factual data

KNOWLEDGE CHECK 3

1 year old Abby’s anthropometric assessment reveals:
Weight-for-age: Above -2 z-score
MUAC: 12.1 cm

Using these z-scores as guidelines please identify which category Abby belongs to?
1. Stunted and normal weight
2. Obese with normal height
3. Underweight and moderate acute malnutrition
4. Underweight and severe acute malnutrition

CORRECT: (C)

Abby is underweight and has moderate acute malnutrition. Her weight-for-age is -2 z-score which signifies underweight. Her MUAC is within the range of 11.5 cm and 12.5 cm which is classified as moderate acute malnutrition (MAM).
KEY MESSAGES OF UNIT 2

1. Nutritional assessment is conducted by interpretation of information obtained from dietary, anthropometric and clinical studies.
2. Anthropometry is the use of body measurements, for a particular age and gender, to assess growth or growth failure.
3. Severe acute malnutrition in young children is diagnosed when MUAC is less than 11.5 cm and/or there is bilateral pitting edema.
ACTIVITY 2-A HEALTH ASSESSMENT ROLE PLAY

Duration: 25 minutes

Instructions:
Have the class separate by forming pairs. Begin by having one partner act as a health care professional asking questions to a patient. The health care professional should be taking notes after each question. Once this is done, have the partners switch roles.

Walk around the class and listen in on the questions and how participants are writing down responses.

Questions:
1. Do you have any chronic illnesses?
2. Do you take any medications? If so, how often do you take them? What is the dose?
3. Do you take any vitamins or supplements? If so, how often do you take them? What is the dose?
4. Have you noticed any changes in weight over the past 6 months? (Weight loss or gain)
5. Describe your activity level. Describe to the participant what Low, Moderate or Vigorous Activity is classified as.
6. Do you follow any specific diet or have any dietary restrictions? Any food allergies or intolerances? If so, describe.
7. Do you have any problems obtaining, preparing, or eating foods? If so, describe.
8. What have you eaten in the past 24 hours? Please describe.
ACTIVITY 2-B SKILLS LAB

Divide the students into 3 groups. Have the students practice each of the skills in stations 1-3,
• Weight measurement
• MUAC measurement.
• SBAR exercise - participants complete a patient report using SBAR communication tool.

The students will evaluate each other using the adapted Bondy rating scale.

Station formation:
Use tables and chairs to form 3 temporary stations in the class room.

Each group will spend 20 mins at each station to practice that particular skill. Once the 20
minutes are over, the group will move to the next station as per the formation above. The skills lab
activity will be complete once each group has completed all 3 stations.

After completing all 3 stations there should be a 20 minute discussion with the participants to
inform them of their strengths and weakness during the exercise.
ACTIVITY 2-B SKILLS LAB

STATION 1: WEIGHT

Under 24 months: Using the hanging spring scale, each participant will measure the weight of a doll. Have them document the weight within their notebook. A third participant will act as the monitor and rate the competency on the Bondy scale.

Bondy Scale

<table>
<thead>
<tr>
<th>Weight measurement (under 24 months)</th>
<th>Rating</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVITIES / PROFESSIONAL BEHAVIORS</td>
<td>Circle number</td>
<td></td>
</tr>
<tr>
<td>Wash hands with soap and water or hand sanitizer</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Introduces oneself as a nurse responsible for patient’s care.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Explains to caregiver what they are going to do.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Adjust the pointer of the scale to zero level</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Remove the child’s diaper and heavy clothing</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Guide the child’s legs through the leg holes</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Hold the child’s feet</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Hang the child on the Hanging Spring Scale</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Read the scale at eye level to the nearest 0.1 kg</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Remove the child slowly and safely</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Completes appropriate documentation.</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

TOTAL POINTS /11

FINAL RESULT

PERCENTAGE:

☐ < 50% = Incomplete/unsafe practice
☐ 50-75% = Minimum level of safe practice
☐ 75%-100% = Proficient practice
ACTIVITY 2-B SKILLS LAB

STATION 2: MUAC MEASUREMENT

Using the MUAC tape, each participant will measure another participant’s MUAC. Have them document the reading within their notebook. A third participant will act as the monitor and rate the competency on the Bondy scale.
### ACTIVITY 2-B SKILLS LAB

**Bondy Scale**

<table>
<thead>
<tr>
<th>ACTIVITIES / PROFESSIONAL BEHAVIORS</th>
<th>Rating</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wash hands with soap and water or hand sanitizer</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Introduces oneself as a nurse responsible for patient’s care.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Explains to caregiver what they are going to do.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Expose the child’s left arm and shoulder</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Bend the elbow at a 90° angle with the palm facing upwards</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Locate the most prominent part (tip) of the child’s shoulder and mark it</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Measure the distance from the shoulder mark to the tip of the elbow and divide the distance by two</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Mark the midpoint of the child’s upper arm</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Release the child’s left arm and place hand beside the child’s body</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Wrap the tape over the marked midpoint</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Pull the tape tight around the mid-upper arm so that it touches the child’s skin without compressing the underlying tissue.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Read the MUAC and record to the nearest 0.1 cm</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Completes appropriate documentation.</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

**TOTAL POINTS** /13 **PERCENTAGE:** %

**FINAL RESULT**

- □ < 50% = Incomplete/unsafe practice
- □ 50-75% = Minimum level of safe practice
- □ 75%-100% = Proficient practice
STATION 3: SBAR DOCUMENTATION

You are working at a local health centre. A mother and child arrive to see you because the child has not been well for the past few weeks. You identify that the 3 year old child is suffering from SAM and requires inpatient treatment. The following information was collected during your assessment. You will need to communicate with the receiving facility regarding your assessment. Using SBAR, communicate your findings to your group.

Esther- Age: 3 years old. Weight: 12kg. MUAC 11.1 cm
Edema noted in both feet, Esther is sleepy and not breastfeeding or taking water well. Mom reports decreased breast milk production since becoming pregnant again and expresses challenges with having access to food to feed Esther.

SITUATION: Esther a 3 year old female is suffering from SAM and requires urgent inpatient treatment. She is noted to be sleepy and not taking fluids well.

BACKGROUND: Esther’s mom reports decreased milk production since becoming pregnant again and issues with getting enough food for her. She has been increasingly unwell over the past 3 weeks.

ASSESSMENT: Esther weights 12kg. MUAC is 11.1 cm. She has swelling in both feet indicating complicated SAM.

RECOMMENDATIONS: If resources and trained workers are available, Esther should be given sugar water or oral rehydration salts. She should then be referred to a health facility, as she requires treatment for SAM.
UNIT 3:
MANAGEMENT OF NUTRITIONAL DISORDERS
UNIT 3: MANAGEMENT OF NUTRITIONAL DISORDERS

INTRODUCTION

This unit is designed to help community workers develop the knowledge and skills needed to implement nutrition actions in nutritional disorders, most importantly moderate acute- and severe acute malnutrition. Furthermore, prevention and management of micronutrient deficiencies is discussed to empower the workers to address these in the population.

COMPETENCIES & UNIT OBJECTIVES

Key Professional Abilities (Competencies)

a. Nutrition Care: Provide service to meet the nutrition care needs of person/community.
b. Community Health: Promote nutrition health of groups and communities.
c. Professional practice: Demonstrates professionalism in delivery of safe, competent and ethical care.
d. Communication and Collaboration: Communicate effectively and practice collaboratively.

Unit Objectives:
By the end of this unit the participant will be able to:
• Identify and classify cases of acute malnutrition
• Demonstrate knowledge of management of moderate acute malnutrition and severe acute malnutrition through referral
• Describe the interventions for prevention and management of key micronutrient deficiencies
• Explain key steps to prevent and address overweight and obesity

UNIT CONTENT

1. Management of Acute Malnutrition
   • Types of Acute Malnutrition
   • Referral of Moderate Acute Malnutrition
   • Referral of Severe Acute Malnutrition

2. Prevention & Management of Micronutrient Deficiencies
   • Iron Deficiency
   • Vitamin A Deficiency
   • Iodine Deficiency
   • Zinc Deficiency
   • Vitamin D Deficiency

3. Intervention in Overweight and Obesity
   • Dietary Management
   • Avoiding Overweight and Obesity in Infants and Children
SESSION 1
MANAGEMENT OF ACUTE MALNUTRITION
SESSION 1: MANAGEMENT OF ACUTE MALNUTRITION

SESSION OBJECTIVES

By the end of this session, participants will be able to:

• Describe principles and process of management of moderate and severe acute malnutrition

SESSION CONTENT

Identification & Management of Acute Malnutrition

• Referral of Moderate Acute Malnutrition
• Supplementary Feeding in MAM
• Referral of Severe Acute Malnutrition (SAM)

PREPARATION

Review session in advance.
Ensure all materials are available.

SESSION ACTIVITIES | DURATION | MATERIALS
--- | --- | ---
A. Lecture | 60 minutes | Teaching Aid, Job Aid Handbook, Hand sanitizer/Wash Station
B. Knowledge check | 15 minutes |
C. Discussion | 15 minutes |
D. Activities 3-A to E | 55 minutes |
SESSION 1: MANAGEMENT OF ACUTE MALNUTRITION

MALNUTRITION

Ask participants what they think malnutrition is?

ACUTE MALNUTRITION

Refer to Teaching Aid.

Acute malnutrition is characterized by inadequate nutrition leading to rapid weight loss or failure to gain weight normally. Usually caused by:

- Decrease in food intake
- Inadequate nutrients in diet
- Disease

TYPES OF ACUTE MALNUTRITION

- Moderate Acute Malnutrition
- Severe Acute Malnutrition

Facilitator – ask the participants
1. Which anthropometric growth indicator can be used to diagnose acute malnutrition? (Answer: MUAC)

WHAT IS MODERATE ACUTE MALNUTRITION (MAM)?

Moderate acute malnutrition in children is defined as weight-for-height between -3 and -2 z-scores of the median of the WHO child growth standards without edema or mid-upper arm circumference (MUAC) of less than 12.5 cm but equal or more than 11.5 cm.

Vulnerable Groups for MAM: Nutritionally vulnerable groups such as children (6-59 months), pregnant and lactating women, and the elderly (> 60yrs).
SESSION 1: MANAGEMENT OF ACUTE MALNUTRITION

MANAGEMENT OF MODERATE ACUTE MALNUTRITION

• The dietary management of children with MAM is based on the optimal use of locally available foods on an outpatient basis – aim is to prevent severe acute malnutrition.
• In times of food shortage, supplementary foods have been used to treat children with MAM.

Facilitator – Ask participants if they have seen cases of MAM? What has their experience been with treating MAM and which foods have they used to treat it.

WHAT ARE SUPPLEMENTARY FOODS?

Supplementary foods are specially formulated foods, in ready-to-eat or in milled form, which are modified in their energy density, protein, fat or micronutrient composition to help meet the nutritional requirements of specific populations. Examples of supplementary foods are fortified blended foods, which can be used to prepare smooth, ready-to-eat porridges, and lipid-based nutrient supplements.

Supplementary feeding programs (SFPs), are commonly implemented in times of:
• Emergencies (droughts, natural disasters, displacement situations)
• Chronic food insecurity

The aim of SFPs is to:
• Treat individuals with moderate acute malnutrition
• Prevent moderately malnourished individuals from becoming severely malnourished

Ask participants if they have experience with such programs in their communities?
PRINCIPLES OF SUPPLEMENTARY FEEDING FOR MAM

Appropriate Amount of Supplementary Foods
Nutrients should be provided at optimum levels. The amount has to be determined relative to the child’s habitual diet and state of undernutrition.

Safe Formulation
The WHO recommends that the formulation of these foods should be ‘safe and effective’.

Maintain Hygiene Standards
Food preparation should be safe and hygienic, complying with the standards set by the WHO for infant and young children’s food.

Essential Nutrition Actions
Supplementary feeding should be accompanied by essential nutrition actions such as breastfeeding promotion, nutrition counselling for families and other measures to address underlying causes of undernutrition including food insecurity.

Nutrient-Dense Foods
Children with MAM need to consume nutrient-dense foods to meet their additional requirements for energy, weight and height gain, and recovery.

Authorized Mineral Components
Mineral components used in supplementary foods should be from the WHO approved list of additives and food fortificants for children.

Anti-Nutrient Compounds
The amount of anti-nutrient compounds (e.g. phytates and tannins) can be reduced by using appropriate food preparation methods such as soaking, fermentation and germination.

SUPPLEMENTARY FEEDING IN MAM

Food supplements may be distributed as:
- Take-home rations (e.g., dry rations and ready-to-use supplementary food [RUSF])
  - Dry ration include fortified blended food (FBF), high-energy biscuits, beans and lentils. Take-home rations are usually distributed every 2 weeks or every month
  - RUSF – high-energy nutrient dense food (e.g. BP 5, Supplementary Plumpy®)
- On-site rations (wet rations)
  - Cooked at the feeding centre and consumed on-site. Usually implemented at peak of an emergency (temporary solution when security is a concern). Otherwise take-home rations are preferable.
SESSION 1: MANAGEMENT OF ACUTE MALNUTRITION

KEY MESSAGE

Screening and referral of moderate acute malnutrition (MAM) is often ignored in communities. It is very important to recognize MAM as there is an increased risk of developing SAM and catching infections.

KNOWLEDGE CHECK 1

Are these statements TRUE or FALSE?

a. ‘Breastfeeding should be stopped during management of MAM.’

b. ‘A 3 year old child with a MUAC of 12 cm and bilateral edema of feet should be treated as a case of MAM.’

CORRECT

a. FALSE – Breastfeeding should be continued through the treatment of MAM.
b. FALSE – Since the child has bilateral edema of feet, he/she should be treated as a case of severe acute malnutrition.

PLOTTING AND INTERPRETATION OF WEIGHT-FOR-HEIGHT


INTERPRETATION OF MUAC

SESSION 1: MANAGEMENT OF ACUTE MALNUTRITION

SEVERE ACUTE MALNUTRITION (SAM)

If left untreated MAM can worsen and progress to SAM. Children with SAM have a higher risk of disease and death. The WHO has developed specific clinical guidelines for the management of SAM.

POSSIBLE MEDICAL COMPLICATIONS IN SAM IF NOT REFERRED

- **Septic shock**: A serious condition that is cause by a body-wide infection which results in a dangerous drop of blood pressure and possible multiple-organ failure.
- **Dehydration**: When the body uses or loses more fluid than the amount taken in and doesn’t have enough to carry out its normal functions.
- **Anemia**: A condition in which the number of red blood cells or their oxygen-carrying capacity is insufficient to meet physiologic needs, which vary by age, sex, altitude, smoking, and pregnancy status.
- **Cardiac failure**: When the heart muscle doesn’t circulate the blood around the body as well as it should.
- **Hypoglycemia**: Low blood sugar levels.
- **Hypothermia**: Reduction in the mean body temperature.
- **Skin infections**: Infections of wounds, scratches or other defects in the skin.
- **Respiratory infections**: Infections of the respiratory tract (nose, trachea (windpipe) or lungs) e.g. pneumonia.
- **Urinary tract infections**: Infections of the urinary tract (kidneys, ureters, bladder or urethra).

DANGER SIGNS THAT INDICATE URGENT REFERRAL

Refer to Teaching Aid.

- Not able to drink or breastfeed
- Vomits everything
- Convulsions
- Lethargic or unconscious

Children should be taken urgently to a health care provider if any of these danger signs are noted.

MANAGEMENT OF SAM

Children waiting for admission and being assessed can be given clean, safe water to drink. Where possible, sugar water should be given to help prevent hypoglycaemia.

Children in a severe condition should be triaged and treated first.

PLOTTING AND INTERPRETATION OF WEIGHT-FOR-HEIGHT

SESSION 1: MANAGEMENT OF ACUTE MALNUTRITION

INTERPRETATION OF MUAC


STEPS IN MANAGEMENT OF SAM

Facilitator: The following flow chart illustrates the inpatient or outpatient care of SAM patients. This is for your information only if questions are asked.

Uncomplicated SAM
- Clinically well
- Alert
- Pass the appetite test*

Complicated SAM
- Severe edema**
- Medical complications
- 1 or more IMCI danger signs
- Fail the appetite test

Treat as outpatient

Treat as inpatient

* Appetite test:
1. The child is given a packet or pot of ready-to-use therapeutic food (RUTF) to eat.
2. The child should eat at least one third of a packet or three teaspoons from a pot of RUTF to pass the test.
3. The health care provider observes the child eating the RUTF and decides whether the child passes or fails.
4. If the child passes, she/he can be sent home and continues treatment in outpatient care. If the child fails, referral procedures to inpatient care are started.
5. The health care provider notes on the outpatient care treatment card whether the child passed or “failed” the appetite test.

Note: Many children will eat the RUTF enthusiastically straight away while others might refuse initially. These children should sit quietly with their mothers/caregivers in a secluded place and be given time to become accustomed to the RUTF.

**Severe edema: generalized edema including both feet, legs, hands, arms and face
SESSION 1: MANAGEMENT OF ACUTE MALNUTRITION

DISCUSSION: PHOTOGRAPH OF CHILD WITH ACUTE MALNUTRITION

Refer to Teaching Aid.

Ask the participants:
This child was seen at a clinic, where one of the community worker commented the child looked healthy, with a good weight.
From your prior knowledge and experience, do you think this child is in good health or do you think he needs nutrition care?
How will you determine if he needs nutrition care?

Facilitator explanation: Although the child looks like he has a good weight, his enlarged abdomen, lethargic & swollen face and thin arms reflect that he is not in optimal health. He should be thoroughly examined for severe acute malnutrition – especially checked for bilateral pitting edema on feet.

KNOWLEDGE CHECK 2

What are the three key elements that are used to identify SAM?

CORRECT ANSWERS:

1. Weight-for-height
2. MUAC
3. Presence of bilateral pitting edema

PLAN - AFTER CONCLUSION OF NUTRITIONAL TREATMENT

The following should be considered when they return to the community after nutritional treatment:
• Give appropriate meals with a high energy and protein content at least five times daily.
• Give nutritious snacks between meals (e.g. milk, banana, bread, biscuits).
• Assist and encourage the child to complete each meal.
• Give food separately to the child so that the child’s intake can be checked.
• Breastfeed as often as the child wants.

FOLLOW-UP

As a community worker it is important to closely follow these clients. You are the person most likely to identify a problem and refer again if needed. Client should be weighed weekly after discharge. Refer back for assessment if client:
• Fails to gain weight over a 2-week period, or
• Loses weight between two measurements, or
• Develops loss of appetite or edema
SESSION 1: MANAGEMENT OF ACUTE MALNUTRITION

KNOWLEDGE CHECK 3

Mark each of the statements as TRUE or FALSE:

a. MAM can only be treated in the hospital
b. Child with SAM and danger signs can be treated at home in the community
c. Children with SAM are at risk of infections
d. Children should be referred to health facility with records, if any, especially of weight and MUAC

CORRECT ANSWERS:

a. FALSE. MAM can be successfully treated in the community if there are supplementary feeding program or RUTF available.
b. FALSE. Child with danger signs and SAM should be referred to the health facility as soon as possible.
c. TRUE. Children with SAM are at risk of infections.
d. TRUE. Children should be referred to health facility with records, if any, especially of weight and MUAC.

MANAGEMENT OF SAM IN SPECIFIC GROUPS

Management of SAM in Infants less than 6 months
If SAM is suspected in an infant under-6 months they should always be referred for inpatient care.

Key principles to remember:

• If the mother is present and breastfeeding, she should continue breastfeeding
• Supplementary foods (RUTF) are NEVER given to infants under 6 months
• Counselling for mother and family to ensure adequate feeding after discharge

Facilitator asks participants: What additional advice can be given to a mother who is not breastfeeding and whose infant is discharged after treatment of SAM?

Facilitator should guide the participants to a discussion on hygiene, cleanliness and WASH in this regard. As the infant will not be breastfed and be given alternative feeding it is very important that the mother does not use a bottle and teat and instead utilizes cup and spoon method while ensuring hygiene and cleanliness.

SAM in Adolescents and Adults
Principles of management and methodology is similar to what is done in children.

Moderate malnutrition:

• Additional 20-30% caloric intake.
• Frequent, small, nutrient-rich meals..

Severe malnutrition:

• They can be provided with supplementary foods or referred for inpatient treatment
SESSION 1: MANAGEMENT OF ACUTE MALNUTRITION

WATER, SANITATION AND HYGIENE

Provision of clean, drinking water and proper hand hygiene (washing hands thoroughly with soap) are key to preventing and managing malnutrition.

Hand hygiene is crucial to prevent spread of infections. It must be done before:
- Preparing and giving feed to children.
- Handling individuals with MAM & SAM.

DISCUSSION

Ask three of the participants to share past experiences of managing patients with SAM. Each of the three should highlight:
- What was the most important step in the identification of that patient?
- What was the process of referral and where did they refer?
- What new thing have they learnt today about management of SAM?

HANDWASHING SKILLS

SESSION 2
PREVENTION & MANAGEMENT OF MICRONUTRIENT DEFICIENCIES
SESSION 2: PREVENTION & MANAGEMENT OF MICRONUTRIENT DEFICIENCIES

SESSION OBJECTIVES

By the end of this session, participants will be able to:
• Identify methods to prevent and manage key micronutrient deficiencies
• Discuss key dietary strategies to alleviate common micronutrient deficiencies in individuals

SESSION CONTENT

Prevention & Management of Micronutrient Deficiencies
• Iron Deficiency
• Vitamin A Deficiency
• Iodine Deficiency
• Zinc Deficiency
• Vitamin D Deficiency

PREPARATION

Review session in advance.
Ensure all materials are available. Please print micronutrient activity information package prior to this session. They are found within the Facilitator materials.
Helpful resources: Nutrition – Micronutrients. World Health Organization (http://www.who.int/nutrition/topics/micronutrients/en/)

SESSION ACTIVITIES

<table>
<thead>
<tr>
<th>SESSION ACTIVITIES</th>
<th>DURATION</th>
<th>MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Lecture</td>
<td>45 minutes</td>
<td>Teaching Aid, Information Package for Micronutrient Activity</td>
</tr>
<tr>
<td>B. Case Study</td>
<td>15 minutes</td>
<td></td>
</tr>
<tr>
<td>C. Activity 3-F</td>
<td>90 minutes</td>
<td></td>
</tr>
</tbody>
</table>
Iron deficiency is the most common nutritional deficiency in the world. Often this deficiency leads to Iron Deficiency Anemia (IDA).

GROUPS VULNERABLE TO IRON DEFICIENCY

- Pregnant Females: Increased requirements.
- Women of Reproductive Age: Menstruation leading to blood loss.
- Vegetarians: Lack of heme iron in diet.
- Infants and Children: Increased requirements for growth, increased incidence of worm infestation.

IRON DEFICIENCY: PREVENTION STRATEGIES

- Improving diet
- Consumption of iron-fortified foods
- Deworming
- Iron supplementation
- Treatment with iron
- Malaria control and treatment

Ask participants why they think that deworming and malaria control and treatment can help control iron deficiency? Answer: Parasitic infections and malaria can both lead to blood loss which can cause IDA.

IRON: DIETARY SOURCES

Refer to Teaching Aid.

Dietary iron can be found in two different forms:

Non-Heme Sources
- Lower bioavailability which is affected by other parts of diet
- Vitamin C, meat and some spices promote non-heme iron absorption
- Fibre, including phytates (grain husks), polyphenols (found in cereals, tea and many vegetables) and calcium inhibit non-heme iron absorption

Heme Sources
- Derived from hemoglobin and myoglobin with higher bioavailability
- Heme iron makes up 40% of the iron in meat, poultry and fish

Ask participants which foods are commonly used in their communities and households are iron-rich and can help prevent iron deficiency.
SESSION 2: PREVENTION & MANAGEMENT OF MICRONUTRIENT DEFICIENCIES

KEY POINTS TO REMEMBER TO ENCOURAGE IRON ABSORPTION IN DIET

1. Although milk, eggs and cheese are animal proteins, they are actually very low in bioavailable iron.
2. Oranges and other fruits, poultry, meats, fish and certain spices help iron to be absorbed.
3. Whole wheat, beets and other vegetables, teas and coffee inhibit iron absorption.

IRON FORTIFIED FOODS

Foods that are often fortified with iron are:
• Rice and flour
• Commercial infant porridges and cereals
• Therapeutic foods especially used in emergency situations or food aid (RUTF)
• Micronutrient powders (MNPs) added to foods at their point of use

DEWORMING

Worm infestation can lead to blood loss in intestines and iron deficiency.
• Deworming of high-risk population (pre-school aged and school-aged children and women of childbearing age) should be done at least once or even twice a year.
• Medication usually used is albendazole or mebendazole.

IRON SUPPLEMENTATION

Iron supplementation is key in preventing and managing iron deficiency in different population groups. The following table show the WHO recommended iron supplementation guidelines for pregnant women. Folic acid is also included in this chart because of its importance during pregnancy as well as preconception. Country specific guideline/protocol for IFA supplementation should be followed.

RECOMMENDED DAILY IRON AND FOLIC ACID SUPPLEMENTATION IN PREGNANT WOMEN

<table>
<thead>
<tr>
<th>Frequency</th>
<th>One supplement daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>Throughout pregnancy. Iron and folic acid supplementation should begin as early as possible</td>
</tr>
<tr>
<td>Target group</td>
<td>All pregnant adolescents and adult women</td>
</tr>
<tr>
<td>Settings</td>
<td>All settings</td>
</tr>
</tbody>
</table>
IRON DEFICIENCY ANEMIA: MANAGEMENT

Refer to Teaching Aid.

Dietary management and iron supplementation are both key strategies for handling iron deficiency. However IDA cannot be treated with diet alone and supplementation is almost always necessary.

Dietary Management
- Iron deficient populations would be advised to consume iron-rich foods and minimize simultaneous consumption of foods containing phytates, polyphenols and calcium.

Iron Supplementation
- Ferrous: These salts have the highest bioavailability.
- Ferric: This has a lower bioavailability so it should be taken with a source of ascorbic acid (vitamin C) to improve absorption.

CASE STUDY

Francis is an 8 year old boy. He walks to school every day and likes sports and outdoor activities. Lately he complains to his mother about feeling tired and not wanting to play. Often while walking to school he rests on the way because of breathlessness. His mother also notices that his cheeks are dull and greyish and takes him to the local doctor. After a thorough history and examination the doctor tells the mother that Francis seems to have anemia that is probably due to iron deficiency. Which of the following food would be good to include in Francis’ diet?

a. Tea  
b. Whole wheat bread  
c. Chicken liver  
d. Spinach  
e. Beans

CORRECT ANSWERS: (C, D, E)

Meat, fish and spinach are all good sources of iron while tea and whole wheat bread inhibit iron absorption.
SESSION 2: PREVENTION & MANAGEMENT OF MICRONUTRIENT DEFICIENCIES

Facilitator: The subsequent information in this session is for reference only and should not be lectured on. Participants will review information regarding the four micronutrients in the activity stations:

• Vitamin A
• Zinc
• Vitamin D
• Iodine

MICRONUTRIENT ACTIVITY STATIONS

See Activity 3-F (Page 124 Facilitator’s Manual, Page 120 Participant’s Manual)

VITAMIN A DEFICIENCY

Dietary Sources of Vitamin A

Provitamin A Carotenoids
These come from plant sources such as fruits & vegetables. The most important of these - beta carotene - is found in leafy green vegetables and in bright yellow and orange fruits & vegetables. Plant sources are not as bioavailable (absorbed) as animal sources.

Preformed Vitamin A
This is found in animal sources such as organ meats (liver), red meat and fish. Breast milk is a critical source of a preformed vitamin A for the infant.

Etiology of Vitamin A Deficiency (VAD)
The underlying cause of VAD is a diet chronically insufficient in vitamin A. Reasons for an inadequate level of vitamin A include:

1. Inadequate breastfeeding – the first critical source of vitamin A.
2. Diet lacking in vitamin A-rich foods (especially liver and full-fat dairy products).
3. Vegetarian diets with modest amounts of vitamin A-rich fruits and vegetables.

An inadequate diet and infections usually co-exist in vitamin A deficient populations. VAD increases the severity of infections, which in turn adversely affects vitamin A intake, giving rise to a ‘vicious cycle’ of VAD and infections.
SESSION 2: PREVENTION & MANAGEMENT OF MICRONUTRIENT DEFICIENCIES

PREVENTION STRATEGIES TO PREVENT VITAMIN A DEFICIENCY

- Improving diet: Encourage dietary diversification and consumption of foods rich in vitamin A. Breastfeeding is included in this strategy as it is the first best source of vitamin A for infants.
- Consumption of vitamin A-fortified foods: Vitamin A fortification of staple foods such as oil, flour, milk powder or sugar is a cost-effective strategy.
- Vitamin A supplementation programs: Periodic, targeted high doses of vitamin A supplementation (VAS) to populations at risk is a proven, low-cost intervention.

VITAMIN A SUPPLEMENTATION (VAS)

For Children: The WHO recommends periodic VAS in children 6 - 59 months only in populations at risk.

For Mothers: In regions where vitamin A deficiency is a severe public health problem, supplementation in pregnancy is recommended to avoid night blindness in mothers. However, country protocols should be consulted for guidelines on VAS.

Adequate nutrition through a balanced diet is recommended for mothers in the postpartum period, especially during breastfeeding.

VITAMIN A SUPPLEMENTATION IN MEASLES

Measles, a viral infection, infects and damages skin tissues of the body. It can reduce vitamin A levels in the body.

Studies have shown that vitamin A supplementation given to children with measles reduces morbidity due to the disease. Thus, the WHO recommends vitamin A to be given to all children with measles in vitamin A deficient areas.

<table>
<thead>
<tr>
<th>AGE</th>
<th>DOSE</th>
<th>FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 6 months</td>
<td>50,000 IU</td>
<td>2 doses, 24 hours apart</td>
</tr>
<tr>
<td>6 months - 1 year</td>
<td>100,000 IU</td>
<td>2 doses, 24 hours apart</td>
</tr>
<tr>
<td>greater than 1 year</td>
<td>200,000 IU</td>
<td>2 doses, 24 hours apart</td>
</tr>
</tbody>
</table>
SESSION 2: PREVENTION & MANAGEMENT OF MICRONUTRIENT DEFICIENCIES

VAD AND XEROPHTHALMIA

Refer to Teaching Aid.

Xerophthalmia refers to a group of eye disorders due to vitamin A deficiency. Signs include night blindness and Bitot spots.

If signs appear in children or WRA urgent referral is necessary.

Bitot spot

IODINE DEFICIENCY

Refer to Teaching Aid.

Iodine is important for the production of thyroid hormones. Thyroid hormones regulate many reactions within the body and are required for skeletal and central nervous system development in fetuses and infants. Goitre is one of the most common consequences of iodine deficiency.

**Dietary Sources of Iodine**

- Seaweed is one of the best food sources of iodine, though depending on the species, iodine content is highly variable.
- Other good sources include fish, shrimp, and other seafood. Foods of marine origin usually have a higher content because iodine in sea-water becomes concentrated in marine life.
- Iodine is also present in vegetables (e.g. green peas, maize, beans) and fruits (e.g. dried prunes, bananas).
- Few foods contain iodine naturally - of those that do iodine content is generally low. Iodine content varies depending on:
  - Soil content
  - Fertilizer use
  - Irrigation practices
Strategies to Prevent Iodine Deficiency

- Salt iodization: The main strategy to prevent iodine deficiency is universal salt iodization. Families and patients should be encouraged to consume iodized salt only and iodized salt should be kept away from heat to protect its iodine content.
- Iodine supplementation: Supplementation in vulnerable populations with iodine is recommended by WHO and UNICEF as an alternative strategy if salt iodization is not feasible. Iodine supplementation is particularly recommended for pregnant or lactating women, women of child-bearing age and children aged 0-24 months.

ZINC DEFICIENCY

Zinc is an important mineral for the body’s immune system, growth and development.

Dietary Measures to Increase Zinc Consumption

Dietary diversification strategies, especially for households with predominant plant-based diets:

- Increase production and use of animal source foods (e.g. beef and poultry)
- Employ household phytate reducing techniques such as soaking cereals and legumes and leavening of grains
- Encourage breastfeeding and complementary feeding as per WHO recommendations. Breastfeeding is sufficient for meeting an infant’s zinc requirements up to 6 months of age, after which appropriate complementary feeding should be initiated

Dietary Sources of Zinc: Liver, beef, veal, lamb, pork, chicken, soy products and seeds (i.e. squash seeds).

Foods Inhibiting Absorption of Zinc: Whole grains, legumes, cereals and nuts are phytate-containing foods which inhibit zinc absorption. Non-heme iron intake can also reduce zinc absorption which is a cause of concern for individuals on iron supplementation.

People on phytate-rich diets might have zinc requirements up to 50% higher than the normal population.
Strategies to Prevent Zinc Deficiency
• Improving diet
• Zinc supplementation
• Zinc fortification

Zinc Therapy in Diarrhea
The World Health Organization and UNICEF recommend zinc supplementation for children under-5 to treat all forms of diarrhea.
• Oral Rehydration Salts (ORS) are given along with zinc. Both are essential and not a substitute for the other.

Research has shown that zinc therapy reduces:
• Diarrhea-related admissions to hospital by 23%
• Duration of the diarrheal episode (acute diarrhea by 10 hours and persistent diarrhea by 16 hours)
• Diarrhea-related mortality

VITAMIN D DEFICIENCY

Refer to Teaching Aid.

Vitamin D is an important micronutrient required for strong bones (by helping calcium absorption), muscle and nerve function, as well as helping the immune system.
Endogenous Skin Synthesis: Exposure of uncovered skin to sunlight leads to beneficial vitamin D synthesis in the skin.

Sources of Vitamin D:
• Fish liver oils (e.g. cod and halibut)
• Fatty fish (e.g. salmon, tuna, sardine)
• Egg yolks
• Fortified foods (e.g. milk, cheese, cereals, margarine)
• Sunlight is a major source of vitamin D in tropical countries

Etiology of Vitamin D Deficiency
Vitamin D is synthesized by the skin when exposed to sunlight. Moreover it is also available in certain foods.
Most commonly vitamin D deficiency can be due to:
• Inadequate exposure to sunlight – due to reduced outdoor exposure time, air pollution, skin coverings or sunscreen use.
• Diet poor in vitamin D.
• High amounts of melanin (skin pigment).
Vulnerable Groups

- Pregnant and Lactating Women: Need vitamin D to ensure adequate stores in the baby and sufficient vitamin D in breast milk.
- Neonates and Infants: Neonates are born with low vitamin D stores and the breast milk vitamin D content is dependent on the mother’s vitamin D status (which is often not adequate).
- Older Adults (>65 years of age): Skin of older adults does not synthesize vitamin D as efficiently as that of younger people.
- Inadequate Sun Exposure: Inadequate exposure to sun leads to inadequate synthesis of vitamin D.

Strategies to Prevent Vitamin D Deficiency

- Adequate exposure to sun
- Vitamin D-rich diet
- Vitamin D supplements

Treatment of Vitamin D Deficiency

In many settings, vitamin D deficiency (and rickets in children) is treated with supplementation. However, there is no global consensus on doses given to adults and children.
SESSION 3

INTERVENTIONS IN
OVERWEIGHT & OBESITY
SESSION 3: INTERVENTIONS IN OVERWEIGHT & OBESITY

SESSION OBJECTIVES

By the end of this session, participants will be able to:
• Recall the etiology of overweight and obesity
• Describe key measures to prevent overweight and obesity

SESSION CONTENT

Overweight & Obesity
• Dietary Management
• Avoiding Overweight & Obesity in Infants and Children

PREPARATION

Review session content.
Ensure all materials are available.
Helpful resources:

Overweight and Obesity. World Health Organization
(http://www.who.int/mediacentre/factsheets/fs311/en/)

<table>
<thead>
<tr>
<th>SESSION ACTIVITIES</th>
<th>DURATION</th>
<th>MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Lecture</td>
<td>30 minutes</td>
<td>Job Aid Handbook</td>
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</tbody>
</table>
OVERWEIGHT AND OBESITY

High-calorie diets and inadequate physical activity can lead to overweight and obesity in childhood, adolescence and adulthood. Obesity in childhood and adolescence tends to persist in adulthood and put individuals at risk of chronic diseases like cardiovascular disease and diabetes.

Overweight and obesity can be identified in children using the WHO weight-for-height and BMI-for-Age charts (see job aids).

In the 5-19 year old age group, BMI-for-Age cut offs for overweight and obesity are:
- Overweight: above +1 z-score
- Obese: above +2 z-score

DIETARY MANAGEMENT OF OVERWEIGHT AND OBESITY

- Limit saturated and trans fat intake – consume more unsaturated fats.
- Decrease intake of sugar (sugar-sweetened drinks, sweets, added sugar in fruit juices, honey, syrups).
- Avoid excessive use of salt – do not add extra salt to food.
- Increase consumption of fruit, vegetables, pulses, whole grains and nuts.

WHAT ARE SATURATED AND UNSATURATED FATS?

- **Saturated fats** mostly come from animal sources such as beef, poultry, whole-fat milk, cheese and butter, however some come from plant sources like coconut, palm and palm kernel oils. Saturated fats raise levels of both total blood cholesterol and low-density lipoprotein (or “bad” cholesterol).

- **Unsaturated fats** come from plant foods, such as nuts and seeds, and are liquid at room temperature. Examples include vegetable oils such as olive, peanut, safflower, sunflower, soybean and corn. Unsaturated fats do not raise blood cholesterol or low-density lipoprotein levels.

AVOIDING OVERWEIGHT & OBESITY IN INFANTS & CHILDREN

- Promotion of exclusive breastfeeding till 6 months of age followed by continued breastfeeding along with appropriate complementary feeding till 2 years of age or beyond
- Discourage formula feeding
- Avoid sugar-sweetened milk, fruit juices and fizzy drinks
- Avoid calorie-rich, nutrient-poor ready-to-eat foods
- Encourage physical activity and sports in children
UNIT 3- MANAGEMENT OF NUTRITIONAL DISORDERS

KEY MESSAGES OF UNIT 3

1. Screening and referral of moderate acute malnutrition (MAM) is often ignored in health communities. It is very important to recognize MAM and manage it as MAM increases the risk of developing SAM and catching infections.

2. MUAC and weight measurements are critical in identifying MAM and SAM. Appropriate and timely referral to health facilities is important to avoid complications from SAM.

3. Micronutrients are critical for health and their deficiencies can be managed by diet and supplementation.

4. Dietary management and adequate physical activity are key to preventing and managing overweight and obesity. Lifestyle changes are essential to prevent gaining weight.
ACTIVITY 3-A: PLOTTING AND INTERPRETATION OF WEIGHT-FOR-HEIGHT

Duration: 10 minutes

Instructions:
Ask participants to look at the growth chart in their manuals. A participant or two should be asked to point out where the -2 and -3 z-score lines are (while reinforcing and telling them that the chart is for age and gender appropriate for the case being assessed). Provide participants with measurements of two children (see below) and ask to categorize whether they suffer from MAM or not.

Children’s measurements from previous clinic visit are as follows:

Caroline – 2 years old – weight 12 kg and height 82 cm  (Answer: No MAM)
Margaret – 3 years old – weight 10.5 kg and height 92 cm  (Answer: Suffering from MAM)
ACTIVITY 3-B: INTERPRETATION OF MUAC

Duration: 10 minutes

Instructions:
Ask participants to look at the MUAC strip in their manuals. The arrow indicates the MUAC measurement of a child, which is 11.9 cm. Ask participants to assess whether this child has a normal nutritional status or is undernourished?

(Answer: Undernourished)
ACTIVITY 3-C: PLOTTING AND INTERPRETATION OF WEIGHT-FOR-HEIGHT

Duration: 10 minutes

Instructions:
Ask participants to look at the growth chart in their manuals. A participant or two should be asked to point out where the -3 z-score lines are (while reinforcing and telling them that the chart is for age and gender appropriate for the case being assessed). Provide participants with measurements of two children and ask to categorize whether they suffer from SAM or not.

Measurements from previous clinic visit are as follows:

Joseph – 1.5 years old – weight 7 kg and height 78 cm (Answer: Suffering from SAM)
Peter – 9 months – weight 5.5 kg and length 68 cm (Answer: Suffering from SAM)
ACTIVITY 3-D: INTERPRETATION OF MUAC

Duration: 10 minutes

Instructions:
Ask participants to look at the MUAC strip in their manuals. Ben and Hannah are siblings who live in a village in Uganda. Based on their MUAC measurements indicated on the strip are they suffering from acute malnutrition or not?

Answer:
Hannah: MUAC > 12.5 cm - not suffering from acute malnutrition
Ben: MUAC < 11.5 cm – suffering from severe acute malnutrition
ACTIVITY 3-E: HANDWASHING SKILLS

Duration: 15 minutes

Instructions:
Demonstrate the process of handwashing as described by WHO. See steps below. Practice as a group, then have your colleagues complete the checklist below while you demonstrate the skill.

![Handwashing Steps](image-url)

- Wet hands with water;
- Apply enough soap to cover all hand surfaces;
- Rub hands palm to palm;
- Right palm over left dorsum with interlaced fingers and vice versa;
- Palm to palm with fingers interlaced;
- Backs of fingers to opposing palms with fingers interlocked;
- Rotational rubbing of left thumb clasped in right palm and vice versa;
- Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;
- Rinse hands with water;
- Dry hands thoroughly with a single use towel;
- Use towel to turn off faucet;
- Your hands are now safe.
## ACTIVITY 3-E: HANDWASHING SKILLS

<table>
<thead>
<tr>
<th>Scale Label</th>
<th>Score</th>
<th>Characteristics of Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proficient practice</td>
<td>1</td>
<td>• What the worker does is safe, appropriate and accurate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Worker performs skill using minimal time.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Worker looks confident and does not require any hints.</td>
</tr>
<tr>
<td>Incomplete / unsafe practice</td>
<td>0</td>
<td>• What the worker does is unsafe, not completely accurate or incomplete.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Worker does not show good skill.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Worker uses a lot of time and energy to perform the skill.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Worker looks uncomfortable and needs a lot of hints.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Handwashing Activities / Professional Behaviors</th>
<th>Rating</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn on the tap and wet hands</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Apply liquid soap, enough to cover entire surface of hands</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub hands palm to palm</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub dorsum of each hand with the palm of the other hand</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub palms with fingers interlaced</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub back of fingers to opposite palms with finger interlaced</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub left thumb while clasping in right palm and vice versa</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub finger tips of each hand in the opposite palm</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rinse hands with water and dry them thoroughly with a single-use towel</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Use single-use towel to turn off the faucet</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

**TOTAL POINTS** /10  
**PERCENTAGE:** %

**FINAL RESULT**  
[ ] < 50% = Incomplete/unsafe practice  
[ ] 50-75% = Minimum level of safe practice  
[ ] 75%-100% = Proficient practice
Duration: 90 minutes (75 minutes activity + 15 minutes facilitated discussion)

Instructions:
Prior to the session please have the micronutrient activity information package printed for this activity.

Four stations are set up for each of the following micronutrients, with one information package and an instruction sheet at each station. All participants should divide into four groups and go one by one to each station. They should not spend more than 15 minutes at a station. During that time they shall review the information package and discuss amongst themselves if needed. They will move onto the next station after 15 minutes.

Station formation:
Use tables and chairs to form 4 temporary stations in the class room.

Groups are asked to review the package and answer the case questions related to the specific micronutrient given in their manuals.

Once all groups have reviewed all four micronutrient packages, conduct a 15 minute debrief with all participants to clarify and answer any questions.
ACTIVITY 3-F: MICRONUTRIENT ACTIVITY STATION

Cases:

Station A: Vitamin A

What are good food sources of vitamin A?
When is vitamin A supplementation recommended in children and pregnant women?

Station B: Iodine

What are good sources of iodine?
Would iodine deficiency be more common in coastal areas or mountainous regions?
What are the strategies to prevent iodine deficiency?

Station C: Zinc

What are good dietary strategies to prevent zinc deficiency?
In what dose is zinc given during diarrhea in children under-five?

Station D: Vitamin D

What is the best source of vitamin D?
Why is vitamin D deficiency even common in regions which get a lot of sunshine?
INTRODUCTION

This module is designed to help community workers develop the skills needed to support families in healthy nutrition practices. It applies concepts of professional practice, communication, collaboration, leadership, management, and advocacy to engage individuals, families, and communities in nutrition behaviours that improve health. Participants are guided through key concepts related to leadership and counselling with case studies to consolidate their learning.

COMPETENCIES & UNIT OBJECTIVES

Key Professional Abilities (Competencies)

a. Nutrition Care: Provide service to meet the nutrition care needs of person/community.

b. Community Health: Promote nutrition health of groups and communities.

c. Professional practice: Demonstrates professionalism in delivery of safe, competent and ethical care.

d. Communication and Collaboration: Communicate effectively and practice collaboratively.

e. Leadership, management and advocacy: Leadership, management and advocacy involves the application of principles of decision making, problem solving and conflict resolution to facilitate a care environment that is supportive to person and community health related to food and nutrition.

Unit objectives:

By the end of this unit the participant will be able to:

• Explore leadership concepts and how to be an effective leader within the community
• Define counselling and the context in which it takes place
• Describe the principles and skills required for effective counselling
• Apply the principles and skills to the counselling process

UNIT CONTENT

1. Communication and Leadership
   • Identify the principles of effective communication
   • Understand how to be change agents in their community
   • Identify concepts to enhance leadership skills

2. Counselling in Nutrition
   • What is counselling including definition and process
   • What are the guiding principles for effective counseling
   • Necessary skills for improving your counseling sessions.
   • Tools to aid in the counseling process
   • How to best facilitate group counseling sessions
SESSION 1

COMMUNICATION AND LEADERSHIP
SESSION OBJECTIVES

By the end of this session, participants will be able to:
• Identify the principles of effective communication
• Understand how to be change agents in their community
• Identify concepts to enhance leadership skills

SESSION CONTENT

Communication and Leadership
• Effective Communication
• Leadership
• Leadership for Change

SESSION ACTIVITIES | DURATION | MATERIALS
--- | --- | ---
A. Lecture | 30 minutes |
SESSION 1: COMMUNICATION AND LEADERSHIP

EFFECTIVE COMMUNICATION

**Dignity and respect:** Leaders listen to and honor individuals and family perspectives and choices. Individuals, family and community knowledge, values, beliefs, and cultural backgrounds are incorporated into the planning and delivery of care.

**Information sharing:** Leaders communicate and share complete and unbiased information with individuals and families in ways that are affirming and useful. Individuals and families receive timely, complete, and accurate information in order to effectively participate in care and decision-making.

**Participation:** Leaders encourage and support individuals and families to participate in care and decision-making at the level they choose.

**Collaboration:** Leaders collaborate with members of the community and others within the interprofessional team to communicate changes needed to improve nutrition in their community.

Ask: How can these be applied in the care you provide to clients, families and communities?

In order to communicate effectively for change within your community it is important to understand your role as a community leader.

LEADERSHIP

Leadership is a process of identifying a goal, motivating other people to act, and providing support and motivation to achieve mutual goals.

As a community worker, your actions can motivate others within your community to make positive changes in nutrition behaviours to improve health.
LEADERSHIP FOR CHANGE

Leadership is a process involving the influence of others, within the context of a group, in order to reach goals which are shared by leaders and their followers.

Leadership is:

Defined as a process, which suggests that leadership is not a characteristic or trait with which only a few, certain people are endowed with at birth. More important, it means that leadership is not restricted to just the one person in a group who has formal position power (i.e. the formally appointed leader).

A two-way, interactive communication between leaders and followers. Leaders affect and are affected by their followers either positively or negatively.

About influence—the ability to influence your community through modeling and communicating good nutrition behaviours is key to creating change. It is also important to effectively communicating with your superiors to ensure your community can access the needed resources to make these changes.

Group-oriented - This means that leadership is about influencing a group of people who are engaged in a common goal or purpose.

EVERYDAY LEADERSHIP

You can play a leadership role by:
• Identifying and responding to clients’ needs
• Coordinating interprofessional team members to work together
• Working in partnership with individuals and families to help achieve health-related goals
• Using professional behaviours to positively influence health outcomes
• Demonstrating effective communication with individuals involved in community activities
• Coordinating resources
• Listening to others

Ask: Do you consider yourself to be a leader? Why or why not?
Why is this important to have leadership within your community?
What are some ways you can act as a leader within your community?
SESSION 2
COUNSELLING IN NUTRITION
SESSION OBJECTIVES

By the end of this session, participants will be able to:
• Define counselling and the context in which it takes place
• Describe the principles and skills required for effective counselling
• Understand the use of tools and group counselling methods
• Apply the concepts of counselling to breastfeeding, complementary feeding and handwashing

SESSION CONTENT

Counselling in Nutrition
• What is Counselling
• Guiding Principles and Counselling Skills
• Tools for Facilitating Counselling and Group Sessions

PREPARATION


Review content regarding breastfeeding, complementary feeding, WASH, and overweight.

<table>
<thead>
<tr>
<th>SESSION ACTIVITIES</th>
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<th>MATERIALS</th>
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</thead>
<tbody>
<tr>
<td>A. Lecture</td>
<td>20 minutes</td>
<td>Teaching Aid, Job aid handbook,</td>
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<tr>
<td></td>
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<td>Participant manuals</td>
</tr>
<tr>
<td>B. Activity 4-A</td>
<td>10 minutes</td>
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</tr>
<tr>
<td>C. Activity 4-B</td>
<td>30 minutes</td>
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<tr>
<td>D. Activity 4-C</td>
<td>60 minutes</td>
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</tbody>
</table>
SESSION 2: COUNSELLING IN NUTRITION

WHAT IS COUNSELLING?

Counselling is a process, based on a relationship that is built on empathy, acceptance and trust. Within this relationship, the counsellor focuses on the client’s feelings, thoughts and actions, and then empowers clients to:

• Cope with their lives,
• Explore options,
• Make their own decisions, and
• Take responsibility for those decisions

What is different about counselling relationships? – have the participants discuss/brainstorm differences, use family/friend relationships as an example of a different type of relationship.

• Power difference: not an equal relationship.
• Client is vulnerable within the relationship.
• Focus is on client’s needs, not counsellor’s needs.
• Time difference: you do not have the luxury of time to establish the relationship. This is why elements of trust, understanding and acceptance are so important.
• Confidentiality is essential, and must be discussed with the client.
• Boundaries and limits are placed on the relationship.

COUNSELLING ENVIRONMENT

The counselling environment should be quiet and private. If the location is familiar to the individual they may feel more comfortable to open up and share their story with you.

Ask the participants: Where does counseling normally take place in your community? What typically helps the individuals you interact with feel most comfortable?
THE COUNSELLING PROCESS

Refer to Teaching Aid.

The main focus of this session will be on the process (the top semi-circle), but you need to be aware of the context, guiding principles, and skills required in order to effectively proceed through the counselling process.

Understanding CONTEXT will give you guidance on how to act, what is appropriate and the situation, culture and norms of those you will be working with.

Adopting GUIDING PRINCIPLES will strengthen your counselling skills.

Counselling Context

COUNSELLING PROCESS
- Assess situation
- Define problems, needs and information gaps
- Generate alternatives
- Prioritize solutions
- Develop a plan
- Review and evaluate

GUIDING PRINCIPLES
- Self reflection
- Empathy and Respect
- Encouraging Interaction
- Build on Skills and Knowledge
- Shared Problem-solving
- Tailoring to specific needs

COUNSELLING SKILLS
- Two-way Communication
- Forming an Alliance
- Active Listening
- Open-ended Questioning
- Providing Information
- Facilitation
GUIDING PRINCIPLES

**Self-reflection:** Be aware of your own attitudes, beliefs and values and how they might impact the care you provide.

**Empathy and respect:** Try to understand the individual’s situation and value their knowledge and decisions.

**Encouraging interaction:** Engage the individual in discussion. Build on skills and knowledge and allow the individual to question, discuss and integrate new ideas with their existing knowledge.

**Shared problem solving:** Act as a facilitator to identify and make a plan regarding the individual’s needs.

**Tailoring to specific needs:** Each individual is different and the counselling process will be different.

COUNSELLING SKILLS

1. **TWO WAY-COMMUNICATION**

Communication involves the exchange of information and is most productive when it is a two-way process which offers an opportunity for each of the parties involved to clarify issues, provide feedback and discuss topics.

Key point: What is said and what is heard are often different. In order to make sure that you are heard and understood, it is often important to check the client’s understanding by asking them what he/she understood. It is also important to make sure you regularly check your understanding of what the client has said to you.

2. **FORMING AN ALLIANCE**

- The frontline worker’s first communication task is to build an alliance, or a partnership, with the individual and, if present, partner or family.
- The counselling relationship is healing in and of itself. If the relationship is healthy, then the counselling outcome has the best chance of being productive.
- Simply talking to someone about your problems can be healing by itself. It can allow a person to “vent” their feelings, to feel heard and accepted.
3. ACTIVE LISTENING

Listening is more than just hearing someone else’s words, you need to be attentive and demonstrate that you have heard and understand what is being communicated to you.

- Demonstrating that you really are listening will increase the individual’s trust and confidence in you as a counsellor, and will make them feel more at ease thus helping to form an alliance.
- Demonstrating that you have heard and understood what has been said to you can be done by paraphrasing, whereby you repeat back what has been said to you using different words.

Non-verbal communication means showing your attitude through your posture, your expressions and gestures without speaking. Good non-verbal communication skills will encourage the client to talk more, focus his/her responses and establish a positive environment.

Ask participants: What types of non-verbal communication are common in your communities that show you are listening?

4. TIPS FOR ASKING QUESTIONS

- Ask questions directly and clearly.
- Ask questions concisely; be specific and brief. Do not ask long, drawn out questions.
- Ask only one question at a time- more than one question can be confusing and make the individual feel like they are being interrogated.
- Share your purpose for asking the question.
- Ask questions gently

5. TYPES OF QUESTIONS

**Open-ended questions** are those that have many possible answers. They encourage the individual to talk about their situation and explore their feelings, beliefs, knowledge and specific need.

Examples: What brings you here today? What are your main concerns?

**Closed-ended questions** can be answered with one work and can be used when you need specific information.

Examples: How old are you? What is your name?
6. PROVIDING INFORMATION

Providing information is used when specific factual information is required or requested.
- Relevant and accurate information should be shared with the individual.
- This should not be confused with ADVICE (being told what to do), they should be presented with the information as OPTIONS (suggesting what you can do).

Remember, with good questioning skills you can find out what is already known so you only need to provide additional and relevant information. You can also find out about beliefs and any misconceptions and explain why they may be wrong as well as discuss different ideas. You should also use your questioning skills to make sure that the information you provide is culturally appropriate, and relevant to the situation and context of their life.

7. FACILITATION

Many individuals’ problems stem from their beliefs that they have no options. They feel stuck in a certain situation. Often individuals have options or alternatives that they have not considered. These options can include a potential action, a new perspective or even an alternate attitude. Facilitating the individual to find alternative/ new solutions to their problem and to follow the best path for them is an important skill in counselling.

Facilitation is the process of assisting an individual or family in problem-solving. Helping individuals to identify tools for looking at and solving their problems is part of facilitation. A guiding activity could be:
- Have them make a list of all the possible solutions
- Identify the advantages and disadvantages of the possible solutions
COUNSELLING PROCESS

See Activity 4-B (Page 143 Facilitator’s Manual, Page 138 Participant’s Manual)

TOOLS TO AID IN COUNSELLING

Visual aids can help to prompt you on what should be covered and reinforce your discussions. These could include:
- Posters, leaflets or fact sheets
- Models or pictures
- Chalk, white boards or paper and a pen

Visual aids can be used to reinforce your discussion. Visual aids can also stand alone as methods of providing information. The main disadvantage of using them alone without discussion is that they do not allow for interactive communication and therefore may be misunderstood. If you do give out visual aids without having a discussion you can overcome this difficulty by providing people with an opportunity to ask questions at a later point either in group or individual discussions.

They should be used along with your discussion to allow the individual a chance to ask questions or create discussion.

When facilitating these sessions:
- Make sure you can be heard and visual aids can be seen
- Talk slowly and clearly
- Move around the group to connect with the various members
- Allow time for the group to ask questions
- Ask questions of the group to ensure they have understood the topic

COUNSELLING CASES

See Activity 4-C (Page 146 Facilitator’s Manual, Page 141 Participant’s Manual)
KEY MESSAGES OF UNIT 4

1. Counselling is an important process to improve the health of individuals we see.
2. Incorporating key principles can improve the relationship built during counselling and improve the effectiveness of the process.
3. The counselling provided in each situation will differ according to the individual’s history and needs.
4. Group counselling can be an effective way to reach a larger number of individuals and key principles should be considered to ensure success.
ACTIVITY 4-A OPEN AND CLOSED QUESTIONS

Duration: 10 minutes

Instructions: Read each statement and determine whether it is an open or closed question and indicate it in the left hand column.

<table>
<thead>
<tr>
<th>Answer key</th>
<th>Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Open</strong></td>
<td>1. What brings you here today?</td>
</tr>
<tr>
<td><strong>Closed</strong></td>
<td>2. Have you eaten this morning?</td>
</tr>
<tr>
<td><strong>Closed</strong></td>
<td>3. Do you care about your health?</td>
</tr>
<tr>
<td><strong>Open</strong></td>
<td>4. What are the reasons you aren’t breastfeeding?</td>
</tr>
<tr>
<td><strong>Open</strong></td>
<td>5. What are you worried about regarding your children’s diet?</td>
</tr>
<tr>
<td><strong>Open</strong></td>
<td>6. What do you typically drink throughout the day?</td>
</tr>
<tr>
<td><strong>Open</strong></td>
<td>7. How has your daughter been eating?</td>
</tr>
<tr>
<td><strong>Closed</strong></td>
<td>8. Do you have diarrhea?</td>
</tr>
<tr>
<td><strong>Closed</strong></td>
<td>9. Do you have access to meat?</td>
</tr>
<tr>
<td><strong>Closed</strong></td>
<td>10. Do you know how to wash your hands?</td>
</tr>
</tbody>
</table>

For each closed-ended question you identified, rewrite it as an open-ended question:

2. **What did you eat for breakfast this morning?**
3. **What are some concerns you have regarding your health?**
8. **How often do you or your family experience diarrhea?**
9. **Can you tell me about your family’s access to meat?**
10. **Can you talk to me about your handwashing practices at home?**
ACTIVITY 4-B COUNSELLING PROCESS

Duration: 30 minutes

Instructions
- Have 2 volunteers come to the front of the class and designate one the “client” and the other the “counsellor”.
- Have the “client” choose which scenario they will act (from the options given) and counsel the client regarding the scenario.
- Using the checklist in the participant manual, have the class act as observers and reflect on the techniques described and how well the “counsellor” implements these techniques.
- Time the interaction and stop the participants at 7 mins.
- As a class answer the questions found on the following page and give feedback regarding the counselling (7 mins).
- Repeat the activity with new volunteers for the second scenario (15 mins).

Role 1: Client: Scenario options
- You find yourself frequently hungry in the afternoons
  OR
- Your baby is not breastfeeding well.

Role 2: As the counsellor you will counsel the individual on the problem they have brought to you. Remember to use the guiding principles and skills you have learned to provide the best possible counselling to the individual seeking care.

Observers: Observe the interaction between the worker and the individual receiving counselling. Complete the checklist (page 157) for the “counsellor”.

After you finished role playing the scenario, discuss the following questions:

a. Client: How did the counsellor make you (the individual) feel regarding your problem?

b. Client: How do you feel about the solution you and the counsellor came up with?

c. Counsellor: What challenges did you face in getting all the information you needed from the individual as the counsellor?

d. Counsellor: What do you think you would do differently next time?
2. Checklist for the observer:

<table>
<thead>
<tr>
<th>The process</th>
<th>Skills/principles demonstrated (Include examples if you can)</th>
<th>Completed Yes/No?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>Introduction/Greeting (Establish the relationship)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Forming an Alliance</td>
<td></td>
</tr>
<tr>
<td>Exploration</td>
<td>Active listening</td>
<td></td>
</tr>
<tr>
<td>1. Assess the situation</td>
<td>Two way communication</td>
<td></td>
</tr>
<tr>
<td>2. Define the problem</td>
<td>Open-ended questioning</td>
<td></td>
</tr>
<tr>
<td>3. Generate alternatives</td>
<td>Shared problem solving</td>
<td></td>
</tr>
<tr>
<td>4. Prioritize solutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>Facilitation</td>
<td></td>
</tr>
<tr>
<td>5. Develop a plan</td>
<td>Providing information</td>
<td></td>
</tr>
<tr>
<td>6. Review and evaluate</td>
<td>Tailoring to specific needs</td>
<td></td>
</tr>
</tbody>
</table>

Trust and Empathy (list ways the counsellor built trust with the individual)
ACTIVITY 4-C COUNSELLING CASES

Duration: 60 minutes
Instructions:
• Divide the class into groups of 3 and assign each group to one of the four cases found below.
• The groups will have 15 mins to role play the counselling case.
• Choose a group member to be the client, the counsellor and the observer.
• The ‘counsellor’ will ‘counsel’ the family through the needed information in the case study.
• Participants should consider the knowledge they have gained in the previous 3 units regarding breastfeeding, complementary feeding and WASH, and overweight/obesity
• Participants can use job aids provided during the activity
• After the role play, return to the larger group and have a representative from the groups who worked through case 1 present the important concepts they provided during the counselling and any challenges they faced while completing the counselling.
• Repeat this step for each case 2-4.

Case 1
Amali, a 28 year old woman, arrives to see you, accompanied by her husband, Farid, and their two-week old baby, Malik. She delivered Malik at home accompanied by her grandmother and has come to you because she is worried he hasn’t gained weight since birth. After your assessment you note that Malik is underweight with no signs of SAM. Counsel Amali and Farid regarding breastfeeding practices that would help Malik gain weight.

Case 2
Grace, a 26 year old woman, arrives to the clinic accompanied by her 5 month old daughter Amina. She has noticed that Amina is frequently reaching for her food and is worried she is hungry. After your assessment you note that Amina is of appropriate weight for her age and is otherwise healthy. Counsel Grace on the best practices related to complementary feeding to ensure that Amina is receiving enough of the right foods.

Case 3
Emmanuel brings his family of 5 to you. He explains that the family frequently experiences diarrhea and that they require treatment for parasites every 6 months. Emmanuel is concerned for his family’s health and would like to find out the best way to prevent these recurrent parasite infections. Counsel Emmanuel on WASH to reduce the risk of transmission of parasites and other diarrheal illnesses.

Case 4
You visit Isaac, a 54 year old man, at his home. You note that his BMI is 26. After completing a dietary assessment, you note that Isaac frequently eats takeaway from the local fast food restaurant and consumes very few fruits or vegetables. Counsel Isaac regarding the principles of healthy eating and his risk for developing obesity.
UNIT 5:
NUTRITION IN VULNERABLE CIRCUMSTANCES
UNIT 5: NUTRITION IN VULNERABLE CIRCUMSTANCES

INTRODUCTION

This unit focuses on nutrition priorities and actions in vulnerable and difficult circumstances. It encompasses nutrition in infectious diseases, namely, HIV and tuberculosis as well as role of nutrition in non-communicable diseases (NCDs). Moreover, the unit highlights nutrition interventions in emergencies with a focus on vulnerable groups. Feeding of low birth weight (LBW) babies is also covered in this unit.

COMPETENCIES & UNIT OBJECTIVES

Key Professional Abilities (Competencies)

a. Nutrition Care: Provide service to meet the nutrition care needs of person/community.
b. Community Health: Promote nutrition health of groups and communities.
c. Professional practice: Demonstrates professionalism in delivery of safe, competent and ethical care.
d. Communication and Collaboration: Communicate effectively and practice collaboratively.

Unit Objectives:
By the end of this unit the participant will be able to:
• Explain optimal nutrition practices for HIV and tuberculosis patients
• Describe the recommended nutrition practices for low birth weight infants
• Recognize nutrition issues in emergencies and identify interventions to address them
• Explain the key role of nutrition in development and control of non-communicable diseases

UNIT CONTENT

1. Nutrition in HIV
   • Guidelines to Eating in HIV
   • Food Safety in HIV
   • Improving Food Intake
   • Infant and Young Child Feeding in HIV
   • MAM and SAM in HIV
2. Nutrition in Tuberculosis
3. Nutrition in Low Birth Weight Infants
5. Nutrition in Emergencies
6. Nutrition in NCDs
WHAT ARE VULNERABLE CIRCUMSTANCES?

Situations that could put nutrition of individuals at risk and increase their chances of suffering from nutritional problems.
Examples: diseases, emergencies (conflict, drought, natural disaster, flood), socioeconomic problems

WHO IS VULNERABLE TO NUTRITIONAL ISSUES?

• Infants and children (especially the under-five age group). Some of the children more at risk are:
  • Suffering from disease
  • Orphan or deserted children
  • Children with disabilities
• Women of reproductive age
• Pregnant women
• Elderly
• People living in poverty
SESSION 1

NUTRITION IN HIV
SESSION OBJECTIVES

By the end of this session, participants will be able to:
• Recognize the influence of nutrition on HIV and vice versa
• Explain the recommendations for eating, food safety and infant and young child feeding in HIV
• Describe the guidelines for referral of MAM and SAM in HIV

SESSION CONTENT

Nutrition in HIV
• HIV and Nutrition
• Guidelines to Eating in HIV
• Food Safety in HIV
• Improving Food Intake in HIV
• Infant and Young Child Feeding in HIV
• MAM and SAM in HIV

PREPARATION

Review session in advance.
Ensure all materials are available.
Helpful resources:

Guideline: updates on HIV and infant feeding: the duration of breastfeeding, and support from health services to improve feeding practices among mothers living with HIV. World Health Organization. 2016

SESSION ACTIVITIES | DURATION | MATERIALS
---|---|---
A. Lecture | 45 minutes | Teaching Aid, Job Aid Handbook, Manual
B. Discussion | 10 minutes |
C. Activity 5-A | 30 minutes |
D. Knowledge check | 5 minutes |
With HIV having harmful effects on the body and immune system, there is weight loss and a greater risk for infections. HIV-positive individuals have a reduced appetite, lowered food absorption and increased energy requirements.

One of the most concerning nutritional impacts of HIV infection is the emergence of severe weight loss and muscle wasting. Moderate acute malnutrition (MAM) and severe acute malnutrition (SAM) are often observed during the advanced stages of HIV infection. MAM and SAM are also often observed in those diagnosed with AIDS.

**DISCUSSION – WHAT DO YOU THINK THIS PICTURE SHOWS?**

Refer to Teaching Aid.

Encourage discussion on this image among the participants – to reinforce the fact that poor nutrition can negatively affect recovery from HIV, worsen the infection, reduce appetite further, leading to a vicious circle of events.

**GUIDELINES TO EATING IN HIV**

1. Consume a variety of foods – dietary diversity is critical to consume adequate nutrients.
2. Make staples or starchy foods the largest part of the meal.
3. Use peas, beans, lentils, nuts and seeds, if possible every day.
4. Use animal and milk products regularly.
5. Eat a wide variety of vegetables and fruits every day.
6. Use fats and oils as well as sugar and sugar containing foods regularly but in moderation.
7. If possible, use foods that are fortified with essential nutrients.
8. Add extra calories to everyday food by adding butter, oil, milk, egg, nuts or cream.
9. Drink plenty of safe and clean water (at least 8-10 glasses per day).

These are general guidelines which may need to be modified based on age, health and socioeconomic status.

Encourage participants to share personal experiences of dealing with HIV patients and what worked for them in their diet.

**Energy Requirements in HIV**

- In HIV-infected individuals, energy requirements are likely to increase to maintain body weight.
- In children with HIV who are experiencing weight loss, energy intake should be increased.
FOOD SAFETY IN HIV

With low immunity and increased risk of infections food safety is very important in HIV. 
• The person, surrounding and cooking utensils should be clean. Hand hygiene is critical. 
• Raw and cooked foods be kept separate.
• Food should be cooked thoroughly.
• Food should be kept at safe temperatures.
• Only safe water and safe raw materials/ingredients should be used.

IMPROVING FOOD INTAKE IN HIV

The HIV patient should be assessed for and referred for any problems that would affect appetite and intake, such as:
• Sore mouth/throat
• Dry mouth
• Change in taste
• Diarrhea
• Nausea/vomiting

ROLE PLAY FOR HIV NUTRITION COUNSELLING


INFANT AND YOUNG CHILD FEEDING IN HIV

• Lifelong antiretroviral (ARV) therapy or ARV prophylaxis in HIV-positive mothers reduces HIV transmission through breastfeeding
• HIV-positive mothers (and whose infants are HIV uninfected or of unknown HIV status) should exclusively breastfeed for the first 6 months of life, introducing appropriate complementary foods thereafter, with continued breastfeeding till 24 months or beyond
• Breastfeeding should then only stop once a nutritional and safe diet can be provided

In infants and young children known to be HIV infected, mothers should exclusively breastfeed for the first 6 months of life, start complementary foods and continue breastfeeding up to 24 months or beyond.
MAM IN HIV

- Individuals who have MAM and are HIV-positive should be referred to outpatient or inpatient care depending on national guidelines.
- MAM in children and adults with HIV is treated as per WHO recommendations i.e. with appropriate use of available foods and also supplementary foods.

SAM IN HIV

- Adults and children under-5 with severe acute malnutrition who are HIV-infected should be referred to inpatient care and:
  - Started on antiretroviral drug treatment as soon as possible.
  - Managed with the same therapeutic feeding approaches as those who are HIV-negative.

KNOWLEDGE CHECK 1

Which of the following statements is correct?

a. Fats, oils and sugar should be avoided by HIV-positive individuals
b. HIV-positive mothers should only breastfeed their infants for 6 months followed by complementary feeding and breast milk alternatives
c. HIV-positive infants should be exclusively breastfed for 6 months, then started on complementary feeding, with continued breastfeeding till 24 months or beyond

CORRECT ANSWERS: (C)

As per current WHO guidelines, HIV-positive infants should be exclusively breastfed for 6 months, then started on complementary feeding, with continued breastfeeding till 24 months or beyond.
SESSION 2

NUTRITION IN TUBERCULOSIS
SESSION OBJECTIVES

By the end of this session, participants will be able to:

- Identify the principles of nutrition actions in tuberculosis
- Describe the guidelines for referral of MAM and SAM in tuberculosis

SESSION CONTENT

Nutrition in Tuberculosis
- Principles of Nutrition Actions in Tuberculosis
- MAM and SAM in Tuberculosis

PREPARATION

Review session in advance.
Ensure all materials are available.
Helpful resources:


SESSION ACTIVITIES

<table>
<thead>
<tr>
<th>SESSION ACTIVITIES</th>
<th>DURATION</th>
<th>MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Lecture</td>
<td>30 minutes</td>
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</table>
TUBERCULOSIS AND NUTRITION

Undernutrition increases the risk of tuberculosis and tuberculosis increases the risk of undernutrition. Also, undernutrition can increase the risk of latent TB turning into an active TB infection.

Apart from the typical symptoms of the disease (cough, low grade fever), most individuals with TB can experience loss of appetite, weight loss, nausea and even diarrhea/vomiting. Thus, there can be a lack of nutrient intake and an increase in loss of nutrients.

PRINCIPLES OF NUTRITION ACTIONS IN TUBERCULOSIS

1. Prompt TB diagnosis, treatment and care as per WHO guidelines is a priority.
2. Adequate diet with all essential macro- and micronutrients.
4. TB often co-exists with other issues and conditions such as HIV, diabetes, substance abuse etc, which need to be recognized and addressed.

MAM AND SAM IN TB

• If MAM/SAM is identified in a patient with TB, refer them to the nearest health facility.
• WHO recommendations for management of MAM and SAM should be followed – through nutrient-rich or fortified supplementary foods to restore nutritional status in MAM and SAM management as per guidelines.
SESSION 3

NUTRITION IN LOW BIRTH WEIGHT INFANTS
SESSION OBJECTIVES

By the end of this session, participants will be able to:
• Explain the principles of feeding of low birth weight infants

SESSION CONTENT

Nutrition in Low Birth Weight Infants
• Feeding of LBW Babies

PREPARATION

Review session in advance.
Ensure all materials are available.
Helpful resources:

Guidelines on optimal feeding of low birth weight infants in low- and middle-income countries. World Health Organization. 2011

SESSION ACTIVITIES

<table>
<thead>
<tr>
<th>SESSION ACTIVITIES</th>
<th>DURATION</th>
<th>MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Lecture</td>
<td>30 minutes</td>
<td></td>
</tr>
<tr>
<td>B. Knowledge check</td>
<td>5 minutes</td>
<td>Teaching Aid</td>
</tr>
</tbody>
</table>
NUTRITION IN LOW BIRTH WEIGHT INFANTS

Low birth weight (LBW) is weight at birth of less than 2.5 kg (2500g). Very low birth weight (VLBW) are infants with a weight of less than 1.5 kg. Prematurity is when babies are born before 37 completed weeks of gestation. Prematurity can be one of the reasons for LBW. LBW infants are at higher risk of:

• Infections
• Growth retardation
• Developmental delay
• Mortality

FEEDING OF LBW BABIES

Refer to Teaching Aid.

• LBW infants (with no complications) should be put to the breast as soon as possible after birth.
• Should be exclusively breastfed until 6 months of age.
• Those who cannot breastfeed and have to be put on ‘alternative oral feeding’ should be fed expressed breast milk by cup and spoon – NOT bottle.
• LBW and VLBW infants who cannot be fed mother’s own milk or donor human milk should be fed standard infant formula but with cup and spoon. VLBW should be given preterm infant formula if they fail to gain weight despite adequate feeding with standard infant formula.
• Feeding should be on-demand except if infant remains asleep for more than 3 hours since last feed, in this case the infant should be woken for feeding.

KNOWLEDGE CHECK 2

A baby weighing 2.0 kg is born at the hospital by caesarean section. The mother has discomfort in her incision site and refuses to breastfeed. Which of the following is the next best option that should be advised for the baby’s feeding?

a. Feed expressed mother’s milk through bottle
b. Feed special formula milk for low birth weight babies with cup and spoon
c. Feed expressed mother’s milk with cup and spoon
d. Feed fresh cow’s milk with cup and spoon

CORRECT ANSWERS: (C)

An LBW baby who is not being breastfed should be fed expressed mother’s milk with cup and spoon.
SESSION 4

NUTRITION IN CHILDREN WITH DISABILITIES
SESSION 4: NUTRITION IN CHILDREN WITH DISABILITIES

SESSION OBJECTIVES

By the end of this session, participants will be able to:
• Identify key priorities in feeding in children with disabilities.

SESSION CONTENT

Nutrition in Children with Disabilities
• Challenges in Feeding
• Important Interventions for Feeding
• Priorities in Feeding

PREPARATION

Review session in advance.
Ensure all materials are available.

SESSION ACTIVITIES | DURATION | MATERIALS
--- | --- | ---
A. Lecture | 25 minutes | Teaching Aid
Malnutrition in children with disabilities can result from not getting enough to eat and/or poor eating habits causing subsequent health problems.

CHALLENGES IN FEEDING

Physical disabilities or behavioural issues (or both) can lead to feeding problems in children. Problems may be related to:
• Oral-motor function (sucking, retaining in mouth, chewing, swallowing)
• Positioning
• Self-feeding
• Behavioural

IMPORTANT INTERVENTIONS FOR FEEDING

• Use locally available iron- and micronutrient-rich foods e.g. green vegetables, whole grains, fruits.
• Use low-cost, nutritious recipes that are easy to make and give to these children.
• Ensure children with disabilities are not ignored and are getting sufficient amounts to eat. Often these children have feeding problems and are thus neglected.
• Refer to a health facility, if these children are identified with specific feeding difficulties (such as chewing or swallowing problems).
• Monitor weight in children with limited mobility to avoid excess weight gain and alter diet if required.
• Breastfeeding should be promoted as much as possible in infants with disabilities.
• Educate families on simple methods which can help in feeding these children better e.g:
  • Modify food (mash, chop, grind, thicken)
  • Appropriate positioning to help feeding
  • Specific devices and utensils to help children feed themselves
  • Modified feeding techniques
• Participation in local nutrition initiatives should be encouraged – especially where growth is monitored and supplements provided. Traditional anthropometry can be challenging in some children with disabilities and additional assistance can be required.

FEEDING A CHILD WITH DEVELOPMENTAL DISABILITIES

Refer to Teaching Aid.

It is important to be aware of the position of the child during feeding to make sure the child is able to safely swallow foods, reduce the risk of choking or aspirating and encourage adequate nutrient intake. Aspiration is when food or fluid enter the airway, which can lead to difficulty breathing, choking or even a secondary lung infection.
SESSION 4: NUTRITION IN CHILDREN WITH DISABILITIES

Keeping the child stable and their body straight are the goals of providing support during feeding. The following can be used to ensure proper positioning of the child and safety during feeding.

- Positioning the hips and knees of the child at right angles to their body.
- Their head should be facing forward with the chin tucked in slightly. If the head is stretched upwards, they will have increased risk of aspiration.

Other important concepts to keep in mind include:

- Reduce distraction during feeding to keep the focus on chewing and swallowing to improve intake and reduce risk of aspiration.
- Allow the child to feed themselves if they are able, although continue to supervise.
- Provide the child with manageable size bites to increase their ability to swallow the food.
- Ensure the child is swallowing well and only place more food in the mouth once they have swallowed.

FEEDING IN CHILDREN WITH AUTISM

Following are some helpful tips for feeding children with autism:

- Follow a mealtime schedule and routine
- Avoid snacking in between meals
- Minimize distractions during meals
- Get child involved in the selection and preparation of meals
- Practice health eating behaviors as a family
- Reward good behavior
- Present food in a tempting way (making small portions makes it easier to eat)

PRIORITIES IN FEEDING

- Adequate nutrition
- Adequate hydration
- Maintain health
- Pulmonary function – prevent aspiration

Encourage participants to share personal experiences and lesson regarding feeding of children with disabilities.

IMPORTANCE OF WASH IN CHILDREN WITH DISABILITIES

- Clean water and sanitation measures help in maintaining health and minimizing infections and complications in children with disabilities. Families can find it challenging to provide adequate sanitation to these children because of the physical difficulties.
- It is important to encourage caregivers to make an effort to ensure for these children:
  - Cleanliness and hygiene
  - Access to adequate sanitation
  - Provision of clean drinking water, utensils and hygienic food
- Moreover, health workers and families should influence local authorities to provide services and facilities for disabled populations
- Community members should be motivated to help and assist when needed
SESSION 5
NUTRITION IN EMERGENCIES
SESSION 5: NUTRITION IN EMERGENCIES

SESSION OBJECTIVES

By the end of this session, participants will be able to:

• Recognize the concept of emergencies and disasters and the threat to food security caused by them
• Identify the various pathways in emergencies through which food insecurity can occur
• Explain key nutrition interventions that should be implemented in emergencies

SESSION CONTENT

Nutrition in Emergencies

• Emergencies and Disasters
• Threats to Food Security
• Impact on Health, Sanitation and Hygiene
• Food Insecurity in Emergencies
• Nutrition Interventions in Emergencies
• Infant and Young Child Feeding in Emergencies
• Water, Sanitation and Hygiene in Emergencies
• Diarrhea and ORT in Emergencies
• Vitamin A Deficiency in Emergencies

PREPARATION

Review session in advance.
Ensure all materials are available.

Helpful resources:

SESSION ACTIVITIES

<table>
<thead>
<tr>
<th>Session Activities</th>
<th>Duration</th>
<th>Materials</th>
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<tbody>
<tr>
<td>A. Lecture</td>
<td>50 minutes</td>
<td>Teaching Aid, Hand sanitizer/Wash Station</td>
</tr>
<tr>
<td>B. Activity 5-B</td>
<td>15 minutes</td>
<td></td>
</tr>
<tr>
<td>C. Activity 5-C</td>
<td>20 minutes</td>
<td></td>
</tr>
<tr>
<td>D. Knowledge check</td>
<td>5 minutes</td>
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</table>
EMERGENCIES & DISASTERS

Emergencies are disasters or conflict that disrupt the functioning of a community and cause human or material losses.

NATURAL DISASTERS

• Earthquakes, tsunami, volcanic activity
• Avalanches, floods
• Extreme temperatures, wildfires, drought
• Cyclones, hurricanes
• Disease epidemics

MAN-MADE HAZARDS

• War/conflict
• Displaced populations
• Industrial disasters

WHAT ARE THE REASONS WHY NUTRITION OF POPULATIONS MAY BE AFFECTED IN EMERGENCIES?

• Decreased food availability which can be due to:
  • Crop failure
  • Loss of live stock
  • Market failure
  • Economic reasons
• Change in diet due to:
  • Disrupted everyday life
  • Relying on food rations
  • Consumption of wild foods
  • Decreased access to a variety of foods

COMMON NUTRITION ISSUES IN EMERGENCIES

• Moderate or severe acute malnutrition (especially in children)
• Micronutrient deficiencies
• Increased susceptibility to disease

DISCUSSION: SHOW PICTURE TO PARTICIPANTS AND ASK:

Refer to Teaching Aid.

“This is a mother and her children during an emergency. What can be some of the challenges she is facing in feeding them?”. Facilitate discussion among participants.
CHANGES IN INFANT AND YOUNG CHILD FEEDING DURING EMERGENCIES

- Maternal undernutrition, anxiety and trauma can affect breastfeeding
- Breast milk substitutes/infant formulas in food rations can encourage mothers to shift to artificial feeding practices
- Mothers have less time to feed and care for their child because of disruption of normal life
- Limited food available
- Families can be separated or there can be deaths in the family which can harm the diet and health of children

WASH AFFECTED IN EMERGENCIES

Lack of adequate nutrition, water, sanitation and hygiene gives rise to disease amongst the affected populations, leading to a vicious cycle of undernutrition and disease. Infectious diseases like diarrhea, acute respiratory infections and cholera are frequently encountered in emergencies.

WASH AFFECTED IN EMERGENCIES

Ask the participants what are some of the critical times when handwashing is important. Some examples could include:
- Before preparing food or cooking
- Before eating or feeding a child
- After cleaning a child’s bottom
- After using the washroom
- Before and after attending to a client

NUTRITION INTERVENTIONS IN EMERGENCIES

These are key nutrition interventions that should be priority in emergencies:
- Nutritional and needs assessment.
- Identification and prioritization of vulnerable groups.
- Distribution of a general food ration.
- Prevention and identification of moderate and severe acute malnutrition.
- Nutritional support for at-risk groups, including infants, pregnant and lactating women, elderly people, and people living with HIV.
- Ensure provision of clean drinking water and sanitation.
- Team work and coordination between various cadres of health and nutrition workers can help address challenges during emergencies.
INFANT AND YOUNG CHILD FEEDING IN EMERGENCIES

- Promote exclusive breastfeeding till 6 months and continued up to 2 years and beyond.
  - Safe havens (safe, private spots) for breastfeeding mothers
  - If possible, arrange food rations for mothers
  - Emotional support for mothers (counselling)
- Support complementary feeding starting at 6 months of age with safe and nutritious food.
- Use of artificial feeding/breast milk substitutes when needed (if mother can’t breastfeed or mother has died) – artificial feeding should be clean, safe and WITHOUT use of bottles/teats.

WASH IN EMERGENCIES

- Make effort for provision of clean water
- Handwashing facilities
- Distribution of soap
- Education of families especially mothers on handwashing and hygiene

HANDWASHING SKILLS


DIARRHEA AND ORT IN EMERGENCIES

- High risk of infections and diarrhea in emergencies
- Oral rehydration therapy (ORT) and zinc supplements should be given to children with diarrhea
- Ensure use of clean, drinking water to formulate ORS
- Continue feeding the child
- Severe dehydration to be treated as per WHO protocols

VITAMIN A DEFICIENCY IN EMERGENCIES

Inadequate food supply and/or measles outbreak can increase risk of vitamin A deficiency. In high-risk populations, interventions to prevent or manage vitamin A deficiency should be taken:

- High-dose vitamin A supplements
- Measles vaccination
- Inclusion of vitamin A-rich foods in diet
- Ensure sanitation and hygiene to prevent diarrhea

Tip: Link with program at facility managing MAM/SAM
KNOWLEDGE CHECK 3

What is the most effective intervention to prevent deaths in children under two years, during emergencies?

a. Vaccination  
b. Oral rehydration therapy in diarrhea  
c. Breastfeeding and appropriate complementary feeding  
d. Food vouchers  

CORRECT ANSWER: (C)

Breastfeeding and appropriate complementary feeding are critical in maintaining optimal health and nutrition as well as preventing infections.

NUTRITION IN EMERGENCY CASE STUDY

See Activity 5-C (Page 182 Facilitator’s Manual, Page 177 Participant’s Manual)
SESSION 6
NUTRITION IN NCDs
SESSION 6: NUTRITION IN NCDS

SESSION OBJECTIVES

By the end of this session, participants will be able to:
• Describe the main features of key NCDs and their relation to nutrition
• Explain the role of various nutrition-related risk factors that can contribute to the development of NCDs

SESSION CONTENT

Nutrition in NCDs
• Specific NCDs and their Relation to Nutrition
• Risk Factors for NCDs
• Intermediate Risk Factors

PREPARATION

Review session in advance.
Ensure all materials are available.

SESSION ACTIVITIES | DURATION | MATERIALS
--- | --- | ---
A. Lecture | 55 minutes | 
B. Knowledge check | 5 minutes |
CHRONIC DISEASES

Chronic diseases are:
- Not passed from person to person
- Of long duration
- Generally of slow progression

These diseases are also referred to as non-communicable diseases (NCDs).
On the other hand, communicable diseases are those that can be passed on person to person.

Can you name some examples of both non-communicable and communicable diseases?

COMMON NCDS

Some of the common NCDs are:
- Cardiovascular disease
- Diabetes Mellitus
- Cancer

SPECIFIC NCDS & THEIR RELATION TO NUTRITION

Cardiovascular Disease:
High levels of triglycerides and LDL (low-density lipoprotein) cholesterol, smoking and high blood pressure are major causes of blood vessel damage. These factors can lead to development of cardiovascular disease.

Diabetes
Diet high in carbohydrates and free sugars can raise the body’s blood sugar (hyperglycemia) and put individuals at risk for impaired glucose tolerance and diabetes. These foods are categorized as high on the Glycemic Index and include refined carbohydrates (white bread, white rice, potatoes).
RISK FACTORS FOR NCDS

- Unhealthy eating
- Lack of physical activity
- Tobacco
- Alcohol consumption
- Intermediate risk factors
  - Overweight and obesity
  - High cholesterol levels in the blood
  - Increased blood pressure

RISK FACTORS FOR NCDS: UNHEALTHY EATING

Ask participants what they think ‘unhealthy eating’ is.

The WHO classifies unhealthy eating by:
- Low dietary intake of fruits (< 5 servings/day) and vegetables (< 2 servings/day)
- High intake of salt (> 5 grams/day or one teaspoon)
- Total daily energy from free sugars is greater than 10% (50 grams)
- Total daily energy from fat is greater than 30%

Consumption of low quality macronutrients often contribute to the development of NCDs. Examples of such diets are:
- More saturated and trans fats versus unsaturated fats
- Refined carbohydrates (with a high glycemic index) and less fibre

RISK FACTORS FOR NCDS: LACK OF PHYSICAL ACTIVITY

Low physical activity is another risk factor that contributes to development of NCDs in vulnerable populations.
- Low Physical Activity – Sedentary – sitting
- Moderate Physical Activity – Moderate intensity – walking, gardening
- High Physical Activity – High intensity – running, digging, heavy lifting, sports
- Recommended for adults: 150 minutes of moderate intensity exercise per week and 75 minutes of high intensity exercise
RISK FACTORS FOR NCDS: ALCOHOL & TOBACCO

Excessive alcohol consumption
Heavy alcohol drinking >60 grams of pure alcohol in a week (approximately 6 drinks).

Tobacco consumption
Smoking, sucking, chewing or snuffing tobacco can be harmful.

INTERMEDIATE RISK FACTORS: HIGH CHOLESTEROL

High cholesterol is characterized by a raised total cholesterol. Dietary sources of cholesterol include animal products such as:
• Eggs
• Meats
• Organ Meats
• Poultry
• Seafood

INTERMEDIATE RISK FACTORS: HYPERTENSION

Hypertension is elevated blood pressure. High salt intake and low potassium intake can lead to hypertension and increased risk of heart disease and stroke.

Examples of foods high in salt and low in potassium include:
• Highly salted foods such as processed meats, cheese and salty snack foods
• High quantities of processed foods, such as bread, cereal products and instant noodles
• Additional salt is also found in condiments & seasoning, such as soy sauce, fish sauce and table salt

INTERMEDIATE RISK FACTORS: OVERWEIGHT AND OBESITY

High-calorie diets and a sedentary lifestyle can lead to overweight and obesity in childhood, adolescence and adulthood. Overweight and obesity can have adverse metabolic effects on blood pressure, cholesterol and insulin resistance. An increasing body mass index increases the risk of developing cardiovascular disease, diabetes and even cancer.
A 25 year old male with a family history of diabetes and cardiovascular disease has come to the health facility for his annual check-up. He is concerned about his family history of NCDs and seeking advice about preventive lifestyle measures. Which of the following recommendations would you suggest to him?

a. Reduce consumption of sugar-sweetened drinks  
b. Sprinkle salt on food before consumption  
c. Reduce alcohol consumption  
d. Consume more than 3 cups of coffee or tea per day  
e. Consume dark, leafy green vegetables on a daily basis  
f. Do moderate to vigorous exercise at least 3-4 days a week  
g. Consume more fiber in diet

CORRECT ANSWERS: (A, C, E, F, G)
UNIT 5- NUTRITION IN VULNERABLE CIRCUMSTANCES

KEY MESSAGES OF UNIT 5

1. A variety of foods should be consumed by the HIV-positive person to ensure all nutrients are taken in adequate amounts.
2. HIV-positive mothers should exclusively breastfeed for the first 6 months of life, introducing appropriate complementary foods thereafter, with continued breastfeeding till 24 months or beyond.
3. Diet of tuberculosis patients should be adequate with all essential nutrients. If a tuberculosis patient, continues to lose weight and/or has a poor appetite and/or has other accompanying issues, refer them to a specialist for re-assessment.
4. Breast milk is best for LBW babies and they should be breastfed as soon as possible after birth.
5. Maintaining adequate hydration and nutrition is the priority in feeding of children with disabilities. Feeding should be done carefully, with the appropriate method especially to avoid aspiration.
6. Emergencies and disasters pose a threat to the nutritional status of communities especially vulnerable groups such as pregnant women, infants and the elderly.
7. Nutritional assessment, prompt recognition of nutrition issues and appropriate management are key in preventing malnutrition in affected populations.
8. Unhealthy eating and unhealthy lifestyle can increase risk of NCDs.
ACTIVITY 5-A: ROLE PLAY FOR NUTRITION COUNSELLING IN HIV

Duration: 30 minutes (15 minutes for role play, 15 minutes for debrief)

Instructions:

• Choose two participants.
• One participant will act as an ‘HIV-positive individual’ while the other acts as a ‘health worker’.
• The focus of the interaction is on nutrition counselling for HIV patients.
• Case scenario:
  • HIV positive patient is concerned about the following:
    • What am I allowed to eat? / Should I avoid all fatty foods?
    • How can I keep my food safe?
    • I don’t feel like eating.
• The ‘health worker’ will counsel the ‘HIV-positive individual’ and address concerns.
• The participants who watch the interaction between the ‘HIV-positive patient’ and the ‘health worker’ and identify 3 things that were done well and 3 things that can be improved in the interaction.
• Facilitator to lead debrief with all participants on the interaction.
ACTIVITY 5-B: HANDWASHING SKILLS

Duration: 15 minutes

Instructions:
Demonstrate the process of handwashing as described by WHO. Make groups of two, one participant demonstrates while the other rates on the scale.

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

Duration of the entire procedure: 40-60 seconds

0. Wet hands with water;
1. Apply enough soap to cover all hand surfaces;
2. Rub hands palm to palm;
3. Right palm over left dorsum with interlaced fingers and vice versa;
4. Palm to palm with fingers interlaced;
5. Backs of fingers to opposing palms with fingers interlocked;
6. Rotational rubbing of left thumb clapsed in right palm and vice versa;
7. Rotational rubbing, backwards and forwards with clapsed fingers of right hand in left palm and vice versa;
8. Rinse hands with water;
9. Dry hands thoroughly with a single use towel;
10. Use towel to turn off faucet;
11. Your hands are now safe.
## ACTIVITY 5-B: HANDWASHING SKILLS

<table>
<thead>
<tr>
<th>Scale Label</th>
<th>Score</th>
<th>Characteristics of Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proficient practice</td>
<td>1</td>
<td>• What the worker does is safe, appropriate and accurate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Worker performs skill using minimal time.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Worker looks confident and does not require any hints.</td>
</tr>
<tr>
<td>Incomplete / unsafe practice</td>
<td>0</td>
<td>• What the worker does is unsafe, not completely accurate or incomplete.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Worker does not show good skill.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Worker uses a lot of time and energy to perform the skill.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Worker looks uncomfortable and needs a lot of hints.</td>
</tr>
</tbody>
</table>

### Handwashing Activity

<table>
<thead>
<tr>
<th>ACTIVITIES / PROFESSIONAL BEHAVIORS</th>
<th>Rating</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn on the tap and wet hands</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Apply liquid soap, enough to cover entire surface of hands</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub hands palm to palm</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub dorsum of each hand with the palm of the other hand</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub palms with fingers interlaced</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub back of fingers to opposite palms with finger interlaced</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub left thumb while clasping in right palm and vice versa</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub finger tips of each hand in the opposite palm</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rinse hands with water and dry them thoroughly with a single-use towel</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Use single-use towel to turn off the faucet</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL POINTS</strong></td>
<td></td>
<td>/10</td>
</tr>
<tr>
<td><strong>FINAL RESULT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ &lt; 50% = Incomplete/unsafe practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ 50-75% = Minimum level of safe practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ 75%-100% = Proficient practice</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ACTIVITY 5-C: NUTRITION IN EMERGENCY CASE STUDY

Duration: 20 minutes

Instructions:
Read through the following case study and then answer the questions

Zeinah lives with her two children in a conflict-ridden region. Her youngest is a 3 month old boy who was being breastfed by Zeinah before she was displaced from her home 2 days back because of bombing. She has since been giving the baby water through a bottle. Her 3 year old daughter is suffering from diarrhea and has not eaten in 2 days when they reach a refugee camp which has a temporary clinic.

**Discussion question for class**
What should be the key nutrition interventions the team at the clinic adopt for Zeinah and her kids?

Answers:

1. Nutritional assessment and counselling
2. Re-establish breastfeeding. Ensure Zeinah has a safe, secure place if possible to breastfeed the infant and while being provided emotional support
3. ORT and zinc supplements for her 2 year old daughter
4. Food rations for the family (Zeinah and her older child)
5. Water, sanitation and hygiene interventions to prevent infections
PRACTICAL PLANNING
INTRODUCTION

The practicum is an opportunity for participants to apply classroom concepts in a real life care environment. Participants are expected to use knowledge and skills gained from the classroom and apply them in a practical environment supervised by an instructor. The participants will reflect on their own experiences with providing nutrition care and set personalised learning objectives to meet their unique learning needs. A set of core skills must be demonstrated by each participant during the practicum in order to evaluate the participant’s competencies.

COMPETENCIES & UNIT OBJECTIVES

Key Professional Competencies:
- Nutrition Care
- Community Health
- Professional Practice
- Communication and Collaboration

Practicum Objectives:
By the end of the practicum participants will be able to:
- Demonstrate skills related to assessment of nutritional status
- Apply theoretical concepts related to nutrition care
- Set and meet objectives specific to your practice
- Explore the community and household environment for barriers to good nutrition practices

PRACTICUM CONTENT

1. Pre-Practicum Planning
   - Understanding practicum responsibilities
   - Setting learning objectives
   - Outline your personal learning objectives
2. In Practicum
   - Competencies completion
   - Case review and SBAR
   - Environmental scan
3. Post-Practicum
   - Debrief
   - Collaborative learning
4. Additional learning activities
   - Diet recall assessment and counselling
   - Handwashing
SESSION 1

PRE-PRACTICUM PLANNING
SESSION 1: PRE-PRACTICUM PLANNING

SESSION OBJECTIVES

By the end of this session, participants will be able to:

- Describe the tasks required for success of practicum
- Describe principles of setting learning objectives
- Outline own learning objectives for practicum

PREPARATION

Explore the plan for the next day’s practicum. Ensure the participants understand their responsibilities and activities they are responsible for and activities they can complete when they have independent time.

SESSION ACTIVITIES

<table>
<thead>
<tr>
<th>SESSION ACTIVITIES</th>
<th>DURATION</th>
<th>MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Lecture</td>
<td>20 minutes</td>
<td>Participant manual</td>
</tr>
<tr>
<td>B. Activity</td>
<td>15 minutes</td>
<td></td>
</tr>
</tbody>
</table>
The practicum is an opportunity for participants to apply classroom concepts in a care environment. Participants are expected to use knowledge and skills gained from the classroom and apply them in a practical environment supervised by an instructor. The participants will reflect on their own experiences with providing nutrition care and set personalized learning objectives to meet their unique learning needs. A set of core skills must be demonstrated by each participant during the practicum in order to evaluate the participant’s competencies.

### RESPONSIBILITIES DURING PRACTICUM

<table>
<thead>
<tr>
<th>TRAINER</th>
<th>LEARNER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitate meeting practicum objectives</td>
<td>Be open to experiences</td>
</tr>
<tr>
<td>Support learners by providing feedback</td>
<td>Seek opportunities for learning</td>
</tr>
<tr>
<td>Act as link between learners and facility</td>
<td>Work to meet practicum objective</td>
</tr>
<tr>
<td>Supervise participants while in practicum facilities</td>
<td>Complete additional activities when between objective activities</td>
</tr>
</tbody>
</table>

Facilitator: Ensuring each participant is clear on the responsibilities of the learner and the trainer in the practicum is important for its success. Explore these responsibilities and clarify any questions of who will be responsible for what during the learning experience.

### OVERVIEW OF PRACTICUM DAY

Four components will be present in the practicum:

1. Competencies
2. Case review and SBAR
3. Environmental scan
4. Learning objectives (to be identified on the pre-practicum day and achieved during the practicum)

The goal of the practicum day will be for each participant to have the opportunity to explore each of these components. These will be the focus of the practicum learning facilitated by the trainer. Two additional activities are available (see session 4) if participants have down-time to ensure they have the most opportunity to learn from the practicum environment. These include:

- Counsel an individual/group regarding nutrition
- Complete a diet recall assessment
COMPETENCIES

Three skills will be the focus of the practicum:
1. MUAC
2. Documentation
3. Weight

Participants will be expected to complete these skills. The trainer will need to evaluate competency on the skill while it is performed. This will be done using the competency tool used during the skill station activity in class. Participants will need to present the tool to the facilitator while they complete the assessment. If the participant is unable to demonstrate competence while completing the skill, they should be given feedback and then reattempt the skill.

CASE REVIEW AND SBAR

Case review gives the participants an opportunity to work through real cases related to nutrition and discuss the case with the expertise of the instructor.
- Identify a case within the community (such as a pregnant mother, a young child or infant or an elderly individual). The facilitator will help participants discuss nutrition concepts that apply to the case.
- Each case should be reviewed by a smaller group of participants (suggesting 4-5 max), and each participant should have the opportunity to participate in at least 1 case review.
- The participants will then prepare to present the case to the other participants during the post-practicum debrief session using SBAR.

ENVIRONMENTAL SCAN

Environmental scan can help identify factors that may create success or barriers to providing care. Explore the community and household environment and consider the questions:
- Consider the barriers for the family or client to implement good nutrition practices. What could they implement in order to improve their access to good quality foods that they may have challenges accessing?
- How are WASH principles implemented in the household or community, what principle of WASH could they implement to improve the health of the community or family?
LEARNING OBJECTIVE

This would be the participants’ individual learning objective that they will aim to achieve during the practicum. Setting learning objectives can help keep their learning focused and provide a clear idea of what they want to learn. Learning objectives should be SMART:

1. **Specific.** A specific objective is detailed, focused and clearly stated. Everyone reading the objective should know exactly what you want to learn.
2. **Measurable.** A measurable objective is quantifiable, meaning you can measure the results with numbers.
3. **Attainable.** An attainable objective can be achieved based on your skill, resources and area of practice.
4. **Relevant.** A relevant objective applies to your current role and is clearly linked to your key role responsibilities.
5. **Time-limited.** A time-limited objective has specific timelines and a deadline. This will help motivate you to move toward your objective and to evaluate your progress.

HOW DO YOU WRITE A SMART LEARNING OBJECTIVE?

1. What do you want to learn?
2. Be specific and use action words to make sure you can measure if you reached your objective. Examples of Action words:

<table>
<thead>
<tr>
<th>Identify</th>
<th>Develop</th>
<th>Plan</th>
<th>Design</th>
<th>Demonstrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compare</td>
<td>Describe</td>
<td>Evaluate</td>
<td>Explain</td>
<td>Create</td>
</tr>
</tbody>
</table>

3. Make sure your goal is realistic so you can reach it.
4. Make sure it relates to your own practice.
5. Some examples of SMART learning objectives include:
   - By the end of the practicum I will demonstrate taking a MUAC measurement with greater than 75% competency
   - By the end of practicum I will identify one area of nutrition theory learned in class that could improve the health of the case I review in ward rounds.
POST-PRACTICUM DEBRIEF

After completing the practicum session we will return to the classroom to complete the post practicum debriefing. The post-practicum debriefing will allow an opportunity to discuss and learn from each other’s experiences. Post-practicum debriefing is an important aspect of integrating classroom learning with hands on learning.

Debriefing sessions can:
- Promote interactive learning, collaboration, and teamwork
- Help participants develop problem-solving, decision-making, and critical thinking skills
- Provide an opportunity for self-reflections and assess personal learning

The Think→Pair→Share model will be used:
- Think- about your own experiences in the practicum before arriving to post-practicum.
- Pair- with the person next to you, discuss your experiences: good/bad, new/challenging/interesting.
- Share- discuss the experiences as a group. Share stories of new learning and challenging situations.

Sharing situations that you found difficult emotionally can help relieve caregiver burden and help you help the next individual or family you encounter.

WHAT SHOULD YOU BRING TOMORROW TO THE PRACTICUM?

Participants need to make sure to bring to practicum:
- Participant manual
- Pen

DEVELOP LEARNING OBJECTIVE

See Activity P-1 in participant manual.
Facilitator: Note learning objectives of participants in session 2.
SESSION OBJECTIVES

By the end of this session, participants will be able to:
• Demonstrate competency in the key skills for nutrition assessment (anthropometry)
• Participate in case review and apply concepts from theory of nutrition care and communicate your findings using SBAR
• Explore the community and household environment for barriers to good nutrition practices
• Explore individual learning objectives

SESSION CONTENT

In Practicum
Complete each of the following activities throughout the practicum day. These are the priority activities to complete, additional activities are found in session 4 that the participants can refer to if the opportunity is available or if an activity is needed while waiting to complete the priority activities.

PREPARATION

Review the objectives set by each participant and plan for addressing their learning needs during the practicum. Review the location for practicum and understand the population with which you will be working in.

SESSION ACTIVITIES  DURATION  MATERIALS

A. Competency assessment  6 hours  MUAC Tapes, Weighing Scales, Documentation Tool (facility-specific), Job Aid Handbook
B. Case review
C. Environmental scan
D. Learning objectives
Each participant will demonstrate competency in MUAC documentation principles and weight using a salter scale. Participants should document measurements in space provided in their participant manual.

**MUAC**

<table>
<thead>
<tr>
<th>ACTIVITIES / PROFESSIONAL BEHAVIORS</th>
<th>Rating</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wash hands with soap and water or hand sanitizer</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Introduces oneself as a care provider responsible for the child’s care.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Explains to caregiver what they are going to do.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Expose the child’s left arm and shoulder</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Bend the elbow at a 90° angle with the palm facing upwards</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Locate the most prominent part (tip) of the child's shoulder and mark it</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Measure the distance from the shoulder mark to the tip of the elbow and divide the distance by two</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Mark the midpoint of the child’s upper arm</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Release the child’s left arm and place hand beside the child’s body</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Wrap the tape over the marked midpoint</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Pull the tape tight around the mid-upper arm so that it touches the child’s skin without compressing the underlying tissue.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Read the MUAC and record to the nearest 0.1 cm</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Completes appropriate documentation.</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

**TOTAL POINTS** /13 **PERCENTAGE:**

- ☐ < 50% = Incomplete/unsafe practice
- ☐ 50-75% = Minimum level of safe practice
- ☐ 75%-100% = Proficient practice
### Documentation

<table>
<thead>
<tr>
<th>ACTIVITIES / PROFESSIONAL BEHAVIORS</th>
<th>Rating</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Documentation is clear and concise</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Information included is accurate</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Hand writing is readable</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Date and time are included</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Only well-known short forms/abbreviations used</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Factual- no irrelevant content</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Documentation is signed</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL POINTS</strong></td>
<td>/7</td>
<td><strong>PERCENTAGE:</strong> %</td>
</tr>
</tbody>
</table>

**FINAL RESULT**

- [ ] < 50% = Incomplete/unsafe practice
- [ ] 50-75% = Minimum level of safe practice
- [ ] 75%-100% = Proficient practice
### Weight Using Hanging Spring Scale (under 24 months)

<table>
<thead>
<tr>
<th>Activities / Professional Behaviors</th>
<th>Rating</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wash hands with soap and water or hand sanitizer</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Introduces oneself as a care provider responsible for the child’s care.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Explains to caregiver what they are going to do.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Adjust the pointer of the scale to zero level</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Remove the child’s diaper and heavy clothing</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Guide the child’s legs through the leg holes</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Hold the child’s feet</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Hang the child on the hanging spring scale</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Read the scale at eye level to the nearest 0.1 kg</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Remove the child slowly and safely</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Completes appropriate documentation.</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

**TOTAL POINTS** /11  **PERCENTAGE:** %

**FINAL RESULT**
- □ < 50% = Incomplete/unsafe practice
- □ 50-75% = Minimum level of safe practice
- □ 75%-100% = Proficient practice
This is an opportunity to observe real cases related to nutrition and consider application of concepts learned in class. After identification of a case or two where nutrition related health challenges have been noted, present and review the case with a group of 4-5 participants as space permits. Have the participants discuss the care of this individual or family. Have the participants consider the context in which the nutrition challenges have developed and what type of care will be required to ensure the ongoing health of the individual reviewed in the case.

Participants will use the SBAR tool to describe how they will communicate their findings to the other participant during the debriefing session. Ensure all of the participants experience at least one minimum case review during case review.

SITUATION:

BACKGROUND:

ASSESSMENT:

RECOMMENDATIONS:
C: ENVIRONMENTAL SCAN

Have participants explore the environment of the practice area where you are completing the practicum. Have them note the following:

1. What are the barriers for the family or client to implement good nutrition practices?
2. What could they implement in order to improve their access to good quality foods that they may have challenges accessing?
3. How are WASH principles implemented in the household or community?
4. What principle of WASH could they implement to improve the health of the community or family?
The participants should each have shared their learning objective developed in the pre-practicum planning session with the trainer. The participants will need to seek opportunities to complete this learning objective and report back in the debriefing session their learning.

Document the participants general learning objectives so you can help each participant with their personal objective

<table>
<thead>
<tr>
<th>Name</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
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</table>
SESSION 3

POST-PRACTICUM
SESSION OBJECTIVES

By the end of this session, participants will be able to:

• Demonstrate application of nutrition theory in practice by reporting the case review using SBAR
• Participate in group learning based on participants experiences
• Critically reflect on learning and experiences from practicum

SESSION CONTENT

Post-Practicum
Discuss the practicum experiences and have the participants work through their learning and any challenges they faced.

PREPARATION

Consider some of the challenges and opportunities that were available to the participants during the practicum.

Document one case that you can review as a group that you experienced together in the case that participants require some examples to apply in discussion

SESSION ACTIVITIES

<table>
<thead>
<tr>
<th>SESSION ACTIVITIES</th>
<th>DURATION</th>
<th>MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Debrief</td>
<td>60 minutes</td>
<td>Manual, Job Aid Handbook</td>
</tr>
</tbody>
</table>
A: DEBRIEF

For facilitators: Post-practicum debriefing is an important aspect of integrating classroom learning with hands on learning. Debriefing sessions can:

- Promote interactive learning, collaboration, and teamwork
- Help participants develop problem-solving, decision-making, and critical thinking skills
- Provide an opportunity for self-reflections and assess personal learning

The trainers’ role in the post-practicum session will be to moderate discussions and bring questions or cases from the practicum day to the discussion.

Post-Practicum will include two sections:

1. Case presentations using SBAR
   - Analysis- Apply concepts from Units 1-4 in the cases described by the students. What are some of the concepts from the course that are noted in the events summarized by the students?

2. Description- Summarize events or new learning
   - THINK → PAIR → SHARE
   - Think- about your own experiences in the practicum before arriving to post-practicum.
   - Pair- with the person next to you, discuss your experiences: good/bad, new/challenging/interesting.
   - Share- discuss the experiences as a group. Share stories of new learning and challenging situations.
SESSION 4

ADDITIONAL ACTIVITIES
SESSION OBJECTIVES

By the end of this session, participants will be able to:
• Complete a diet recall assessment and complete appropriate counselling
• Handwashing competency

SESSION CONTENT

Additional Activities
These activities can be used throughout the practicum in addition to the four learning objectives when needed.

<table>
<thead>
<tr>
<th>SESSION ACTIVITIES</th>
<th>DURATION</th>
<th>MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Diet recall and counselling</td>
<td></td>
<td>Hand Sanitizer/Wash Station</td>
</tr>
<tr>
<td>B. Handwashing competency</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**ACTIVITY: DIET RECALL**

We will use the following table to complete a dietary assessment of an individual. Ask the following questions, then complete the table below by filling in the items that the individual ate. If they ate a meal with mixed ingredients, ask what type of foods were included in the prepared meal to get an idea of what they are eating. Complete the column (missing micro/macro nutrients) after you have collected the information from the individual.

How many meals would you say you had yesterday? __________________________

Was this a typical day of eating? YES / NO (if no, think of the last typical day for you)

Do you ever have difficulty getting access to food for you or your family? If so, describe. __________________________________________________________

Do you follow any specific diet or have any dietary restrictions? If so, describe. __________________________________________________________

Are there any foods you do not eat because you don’t think they are good for you? If yes, what? ____________________________________________

Are there any foods you do eat regularly because you think they are good for you? If yes, what? ____________________________________________
What have you eaten in the past 24hrs? (Complete the table)

<table>
<thead>
<tr>
<th></th>
<th>Foods Reported</th>
<th>How much</th>
<th>Missing micro/macro nutrients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meal 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meal 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meal 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What foods could be added to the individual’s diet to address any missing nutrients?

Discuss with the client the best way to meet these missing requirements using the principles of counselling.
SESSION 4: ADDITIONAL ACTIVITIES

HANDWASHING COMPETENCY ASSESSMENT

Have another participant assess your competency in handwashing. Let each other know how they did.

<table>
<thead>
<tr>
<th>Handwashing</th>
<th>Rating</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVITIES / PROFESSIONAL BEHAVIORS</td>
<td>Circle number</td>
<td></td>
</tr>
<tr>
<td>Turn on the tap and wet hands</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Apply liquid soap, enough to cover entire surface of hands</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub hands palm to palm</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub dorsum of each hand with the palm of the other hand</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub palms with fingers interlaced</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub back of fingers to opposite palms with finger interlaced</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub left thumb while clasping in right palm and vice versa</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rub finger tips of each hand in the opposite palm</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rinse hands with water and dry them thoroughly with a single-use towel</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Use single-use towel to turn off the faucet</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

TOTAL POINTS /10 PERCENTAGE: %

FINAL RESULT

- □ < 50% = Incomplete/unsafe practice
- □ 50-75% = Minimum level of safe practice
- □ 75%-100% = Proficient practice
ABBREVIATIONS
# Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART</td>
<td>Anti-retroviral therapy</td>
</tr>
<tr>
<td>AI</td>
<td>Adequate intake</td>
</tr>
<tr>
<td>AIDS</td>
<td>Acquired Immunodeficiency Syndrome</td>
</tr>
<tr>
<td>BF</td>
<td>Breastfeeding</td>
</tr>
<tr>
<td>BMI</td>
<td>Body mass index</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
</tr>
<tr>
<td>IDA</td>
<td>Iron deficiency anemia</td>
</tr>
<tr>
<td>IMCI</td>
<td>Integrated Management of Childhood Illness</td>
</tr>
<tr>
<td>IYCF</td>
<td>Infant young child feeding</td>
</tr>
<tr>
<td>LBW</td>
<td>Low birth weight</td>
</tr>
<tr>
<td>LDL</td>
<td>Low density lipoprotein</td>
</tr>
<tr>
<td>MAM</td>
<td>Moderate acute malnutrition</td>
</tr>
<tr>
<td>MDD</td>
<td>Minimum dietary diversity</td>
</tr>
<tr>
<td>MNP</td>
<td>Micronutrient powders</td>
</tr>
<tr>
<td>MUAC</td>
<td>Mid-upper arm circumference</td>
</tr>
<tr>
<td>NCD</td>
<td>Non-communicable disease</td>
</tr>
<tr>
<td>NG</td>
<td>Nasogastric</td>
</tr>
<tr>
<td>ORS</td>
<td>Oral rehydration salts</td>
</tr>
<tr>
<td>ORT</td>
<td>Oral rehydration therapy</td>
</tr>
<tr>
<td>RAE</td>
<td>Retinol activity equivalents</td>
</tr>
<tr>
<td>RDA</td>
<td>Recommended daily allowance</td>
</tr>
<tr>
<td>RUSF</td>
<td>Ready-to-use supplementary food</td>
</tr>
<tr>
<td>RUTF</td>
<td>Ready-to-use therapeutic food</td>
</tr>
<tr>
<td>SAC</td>
<td>School-age children</td>
</tr>
<tr>
<td>SAM</td>
<td>Severe acute malnutrition</td>
</tr>
<tr>
<td>SBAR</td>
<td>Situation, Background, Assessment, Recommendations</td>
</tr>
<tr>
<td>SFP</td>
<td>Supplementary feeding program</td>
</tr>
<tr>
<td>SGA</td>
<td>Small-for-gestational age</td>
</tr>
<tr>
<td>TB</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Full Form</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------</td>
</tr>
<tr>
<td>UNICEF</td>
<td>United Nations International Children’s Emergency Fund</td>
</tr>
<tr>
<td>USDA</td>
<td>U.S Department of Agriculture</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
<tr>
<td>VAD</td>
<td>Vitamin A deficiency</td>
</tr>
<tr>
<td>VAS</td>
<td>Vitamin A supplementation</td>
</tr>
<tr>
<td>VLBW</td>
<td>Very low birth weight</td>
</tr>
<tr>
<td>WASH</td>
<td>Water, Sanitation and Hygiene</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>WRA</td>
<td>Women of reproductive age</td>
</tr>
</tbody>
</table>