FUNDAMENTALS OF NURSING

STUDENT BOOK SENIOR 6

ASSOCIATE NURSING PROGRAM

First Edition

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FOREWORD

Dear Student,

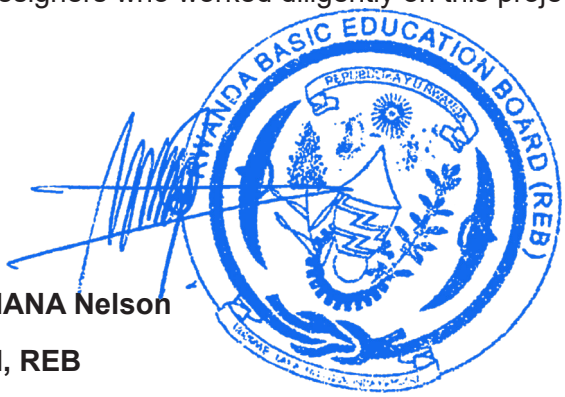
The Rwanda Basic Education Board is pleased to introduce this textbook of Fundamentals of Nursing of the Associate Nursing Program. This resource is crafted to support competence-based teaching and learning, ensuring a uniform approach to mastering the Fundamentals of Nursing. Our educational philosophy is designed to help you realize your full potential at each level of your education, equipping you to integrate effectively into society and seize career opportunities.

The Rwandan government emphasizes the alignment of educational materials with the syllabus to enhance your learning experience. Instructional materials, activities, and engagement play a crucial role in shaping how well you learn. This textbook focuses on activities that promote idea development and discovery, whether done individually or in groups.

In a competence-based curriculum, learning is an active process where knowledge, skills, and attitude and values are developed through practical activities and real-life scenarios. To fully benefit from this textbook, you should:

- Engage in activities and laboratory experiments to build your skills.
- Share information through presentations, discussions, and collaborative work.
- Take ownership of your learning and draw insights from your activities.

I extend my gratitude to all those who contributed to the creation of this book, including the Ministry of Health, University of Rwanda, and other institutions. Special thanks go to the dedicated faculty members, nurses, midwives, teachers, illustrators, and designers who worked diligently on this project.

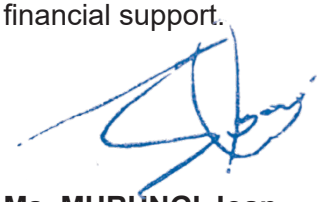


Dr. MBARUSHIMANA Nelson

Director General, REB

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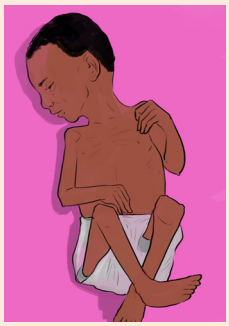
UNIT 1 HUMAN NUTRITION AND DIETETICS

Key Unit Competence

Assist adequately in preparation of a balanced diet to community, family and individuals.

Introductory activity 1.1

Observe the Pictures below (A, B, C, D and F) and answer the questions that follow:



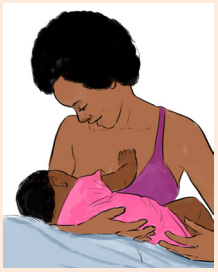
A



B



C



D



E



F

1. What do the above-mentioned pictures (A, B, C, D, E, and F) communicate to you?
2. Differentiate the pictures A& B, from the picture E
3. What do you think is the importance of each activity that is being done by the persons in pictures C, D, and F?
4. According to you, what do you think is the focus of this topic?

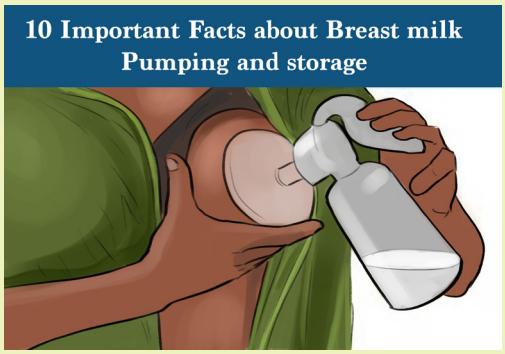
1.1. Breast feeding

Learning activity 1.1

Observe the following pictures and respond to questions provided below:



A



B

1. Describe the activities the pictures above pointed out.
2. Discuss the importance of the ongoing activities in the pictures above (A,B).
3. What do you expect to learn in this lesson?
4. Use the fundamentals of nursing and nutrition text books taken from the library or internet and find out the advantages of breast feeding for mother and baby, teaching points for breast feeding and contra-indications of breast feeding

1.1.1. Introduction to breast feeding

The breast feeding consists of giving mother's milk to a newborn, infant, or child. Mature mother's milk and its precursor, colostrum, are considered the most balanced foods available for normal newborns and infants. Breastfeeding should be initiated immediately after the birth of your child. Breast milk is specifically designed to support optimal growth and development of the newborn, and its composition makes it uniquely superior for infant feeding.

Exclusive breastfeeding is recommended for the first 6 months of life and should be maintained until weaning is initiated (there are some exceptions: for example, Oral iron drops may be needed before 6 months to support iron stores). Breast feeding is considered adequate to meet the needs of healthy, full-term infants. Even after solid foods are introduced, breastfeeding should continue for at least the first 12 months of age.

1.1.2. Advantages of breastfeeding for the baby

For the first 2-4 days of a baby's life, breasts will secrete colostrum, a yellowish fluid rich in proteins. These valuable proteins are essential to the development of a healthy immune system. The protein is easily digested and absorbed by the body, especially by the rapidly developing brain. Colostrum provides factors that promote maturation of the gut and good digestion. Colostrum is the most superior and well-designed nutrition for your baby in the first few days of life.

Breast milk provides superior nutrition to the baby and increases resistance to infections, and therefore fewer incidents of illness and hospitalization. It decreases the risk of lactose intolerance. Breast milk is sterile and easily digested. Breastfed babies experience less nappy rash, they are less likely to develop allergies and experience fewer constipation. Breastfed infants tend to have fewer cavities. Breastfeeding promotes the proper development of baby's jaw and teeth. Breastfed infants tend to have higher intellectual quotients (IQs) due to good brain development early in life. They benefit emotionally, because they are held more. Breastfeeding promotes mother-baby bonding. In the long term, breastfed babies have a decreased risk of malnutrition, obesity and heart disease compared to formula fed babies.

Breastfeeding is credited with numerous potential health benefits for the infant, including lower risks of otitis media, upper respiratory tract infection, lower respiratory tract infection, asthma, atopic dermatitis, gastroenteritis, obesity, celiac disease, type 1 and type 2 diabetes, certain types of leukemia, and sudden infant death syndrome. Although many of these benefits are linked to breast feeding for 3 months or more, some benefits occur with any duration of breastfeeding, such as the reduced risk of obesity and type 2 diabetes.

1.1.3. Advantages of breastfeeding for the mother

The baby's sucking causes a mother's uterus to contract and reduces the flow of blood after delivery. During lactation, menstruation ceases, offering a form of contraception. Mothers who breastfeed tend to lose weight and achieve their pre-pregnancy figure more easily than mothers who bottle feed. Mothers who breastfeed, are less likely to develop breast cancer later in life. Breastfeeding is more economical than formula feeding. There are fewer trips to the doctor and less money is spent on medications. Breastfeeding promotes mother-baby bonding. Hormones released during breast-feeding create feelings of warmth and calm in the mother.

1.1.4. Teaching points for breastfeeding

The infant should be allowed to be nursed for 5 minutes on each breast on the first day to achieve letdown and milk ejection.

By the end of the first week, the infant should be nursed up to 15 minutes per breast.

In the first few weeks of breastfeeding, the infant may be nursed 8 to 12 times every 24 hours. Mothers should offer the breast whenever the infant shows early signs of hunger, such as increased alertness, physical activity, mouthing, or rooting. After breastfeeding is well established, eight feedings every 24 hours may be appropriate. The first breast offered should be alternated with every feeding so both breasts receive equal stimulation and draining. Even though the infant will be able to virtually empty the breast within 5 to 10 minutes once the milk supply is established, the infant needs to nurse beyond that point to satisfy the need to suck and to receive emotional and physical comfort. The supply of milk is equal to the demand the more the infant sucks, the more milk is produced. Infants age 6 weeks or 12 weeks who suck more are probably experiencing a growth spurt and so need more milk. Water and juice are unnecessary for breastfed infants in the first 6 months of life, even in hot climates. Early substitution of formula or introduction of solid foods may decrease the chance of maintaining lactation. Infants weaned before 12 months of age should be given iron-fortified formula, not cow's milk. Both feeding the infant, more frequently and manually expressing milk will help to increase the milk supply. Breast milk can be pumped, placed in a sanitary bottle, and immediately refrigerated or frozen for later use. Milk should be used within 24 hours if refrigerated or within 3 months if stored in the freezer compartment of the refrigerator.

1.1.5. Breast feeding technique

The breast feeding technique has 3 main parts: effective positioning for the mother, effective positioning for the baby, attaching the baby to the breast.

a. Effective positioning for the mother

A comfortable position is a prerequisite of comfortable breastfeeding. A woman who has recently given birth, especially one new to breastfeeding, may need some help with this. After a caesarean section, or where the perineum is very painful, lying on her side may be the only position a woman can tolerate in the first few days after birth. It is likely that she will need assistance in placing the baby at the breast in this position, because she has only one free hand. When feeding from the lower breast it may be helpful to raise her body slightly by tucking the end of a pillow under her ribs. Once the woman can do this unaided, she may find this a comfortable and convenient position for night feeds, enabling her to get more sleep. Alternatively, the mother may prefer to sit up to feed her baby, it is particularly important that the mother's back is upright at a right-angle to her lap.

Both (arms) lying on her side and sitting correctly in a chair with her back and feet supported enhance the shape of the breast and allow ample room in which to manoeuvre the baby.

b. Effective positioning for the baby

The baby's body should be turned towards the mother's body so that the baby is coming up to her breast at the same angle as her breast is coming down to the baby. The more the mother's breast points down, the more the baby needs to be on his back. The advice to have the baby tummy to tummy may be mistakenly taken to imply that the baby should always be lying on his side. However, taking account of the angle of the dangle might be more useful. If the baby's nose is opposite his mother's nipple, being brought to the breast with the neck slightly extended, the baby's mouth will be in the correct relationship to the nipple.

c. Attaching the baby to the breast

The baby should be supported across the shoulders, so that slight extension of the neck can be maintained. The baby's head may be supported by the extended fingers of the mother's supporting hand or on the mother's forearm. It may be helpful to wrap the baby in a small sheet (Vancouver wrap), so that his hands are by his side. If the newborn baby's mouth is moved gently against the mother's nipple, the baby will open his mouth wide. As the baby drops his lower jaw and darts his tongue down and forward, he should be moved quickly to the breast. The intention of the mother should be to aim the baby's bottom lip as far away from the base of the nipple as is possible. This allows the baby to draw breast tissue as well as the nipple into his mouth with his tongue. If correctly attached, the baby will have formed a teat from the breast and the nipple.

The nipple should extend almost as far as the junction of the hard and soft palate. Contact with the hard palate triggers the sucking reflex. The baby's lower jaw moves up and down, following the action of the tongue. Although the mother may be startled by the physical sensation, she should not experience pain. If the baby is well attached, minimal suction is required to hold the teat within the oral cavity. The tongue can then apply rhythmical cycles of compression and relaxation so that milk is removed from the ducts. The baby feeds from the breast rather than from the nipple, and the mother should guide her baby towards her breast without distorting its shape. The baby's neck should be slightly extended and the chin in contact with the breast. If the baby approaches the breast, a generous portion of areola will be taken in by the lower jaw, but it is positively unhelpful to urge the mother to try to get the whole of the areola in the baby's mouth.

Notes

Many mothers who have had babies before require as much support with breastfeeding as those who have given birth to their first baby.

Reasons for this include:

- Previous unsuccessful breastfeeding.
- Breastfeeding may have gone well last time by chance rather than knowledge.
- The new baby may behave very differently, or have different needs, from the mother's previous baby/ babies.
- The mother may have recently fed (or still be feeding) a toddler and has forgotten quite how much help a new baby requires to breastfeed.
- Their previous baby may have been born at a time when underpinning information now known to be outdated was thought to be correct.

1.1.6. Contra indications to breastfeeding

It may be contraindicated to the mother to breastfeed her child in some cases. For example: Galactosemia in the infant, illegal drug use in the mother, and active tuberculosis. Breast feeding may be also be contraindicated in case of HIV/AIDS – in some countries, the risk of infant mortality from not breastfeeding may outweigh the risk of acquiring HIV through breast milk. The use of certain drugs, such as radioactive isotopes, antimetabolites, cancer chemotherapy agents, lithium, and ergotamine constitute a contraindication during breast feeding.

Self-assessment 1.1

1. Identify the advantages of exclusive breast feeding of a child until six months?
2. Outline the teaching points for breast feeding

1.2. Formula-feeding

Learning activity 1.2

Observe the following pictures and respond to questions given below it



A



B



C



D

1. What do the pictures A and B above mentioned inform you about?
2. What do you think is the role of activity which is being performed on the pictures C and D?
3. What do you expect to learn in today's lesson?

1.2.1. Formula-feeding

It may happen that a mother lack or have not enough breast milk for her baby, so it becomes a requirement to search for other sources of nutrients for replacement in order to help the child to achieve normal growth and maintain normal health. A Formula-feeding is a substitute for breast milk that can be used either as an alternative to breastfeeding or as a way of supplementing it. This should include proper amounts of water, carbohydrate, protein, fat, vitamins and minerals. Manufacturers continue to modify their products in an effort to emulate human milk, and although they provide less than the optimal benefits of human milk, they are nutritionally adequate for the first year of life.

1.2.2. The three major classes of infant formulas:

a) Milk-based formulas prepared from cow milk with added vegetable oils, vitamins, minerals, and iron. These formulas are suitable for most healthy full-term infants.

b) Soy-based formulas made from soy protein with added vegetable oils (for fat calories) and corn syrup and/or sucrose (for carbohydrate). These formulas are suitable for infants who cannot tolerate the lactose in most milk-based formulas or who are allergic to the whole protein in cow milk and milk-based formulas.

c) Special formulas for low birth weight (LBW) infants, low sodium formulas for infants that need to restrict salt intake, and "predigested" protein formulas for infants who cannot tolerate or are allergic to the whole proteins (casein and whey) in cow milk and milk-based formulas.

The standard formula choice is a **cow's milk-based formula,** containing skim milk powder, lactose and a variable blend of oils. These formulas are available in two versions: low iron (similar amounts as in human milk, but with much lower bioavailability) or iron-fortified (12 mg elemental iron/l). Use of low iron formulas is one of several risk factors implicated in the incidence of iron deficiency anaemia, the most common nutritional deficiency among infants and toddlers. To provide the best guarantee of normal iron status, the use of iron-fortified formulas, not low iron formulas is recommended.

Soy-based formulas made from soy protein, vegetable oils and glucose polymers (±sucrose) are available for infants of vegetarian families, infants with galactosaemia or lactose intolerance, or infants with IgE-mediated allergy to cow's milk protein. Soy formulas are not indicated for low-birth-weight infants, prevention or management of colic, routine treatment of gastroenteritis, or treatment of infants with non IgE-mediated allergy to cow's milk protein (i.e. enteropathy or enterocolitis). Recent concerns with respect to the safety of soy formulas are related to their content of phyto-oestrogens. Different factors can lead to a low milk supply during breast-feeding or contraindicate it – mother's disease, use same medications, waiting too long to start breast-feeding, not breast-feeding often enough. Sometimes previous breast surgery may affect milk production.

1.2.3. Advantages of formula-feeding

Time and frequency of feedings: Formula-fed babies usually eat less often than breastfed babies since formula feeds take longer to digest.

Diet: Formula feeds are very important for a mom who needs to be on a medication that might harm the baby.

Convenience and Flexibility: Your partner or anyone can feed Your Child at any time without you having to pump, and store breast milk, especially if that isn't an option. You don't need to find a private place to nurse in public.

1.2.4. Disadvantages of formula-feeding

Lack of antibodies: Formula feeds don't have the antibodies found in breast milk. As a result, formulas can't provide to the child with immunity against infection and illness the way breast milk does.

Unable to match the complexity of breast milk: Formulas can't measure up to the complexity of breast milk in the way it changes with baby's needs.

There's a need for planning and organization: Breast milk is always available and at the right temperature, but formula feeds require planning to ensure that you have all the things you need to prepare it. You must make sure you don't run out of stock to avoid making late-night trips to the store.

Also, you must ensure that all the necessary supplies (like bottles and nipples) are clean, easily accessible, and ready to use. You will have to feed the child 8-10 times in 24-hours, so if you're not organized, you can easily get overwhelmed.

Formula can be expensive: Baby formula is quite expensive. The most expensive type is ready-to-feed formulas, followed by the concentrated type. The least expensive is the powdered formula. Special formulas, such as soy and hypoallergenic, can cost even more than the ready-to-feed formulas.

It may cause gassy tummy and constipation: It's more likely for formula-fed babies to have gassy tummy and constipation than breastfed babies.

It may increase the risk of infections: Often formulas need to be mixed with water. So if the water is not 100% free of bacteria or other germs, there is a risk of infection, and in the first 12 months, this can lead to serious complications for the baby.

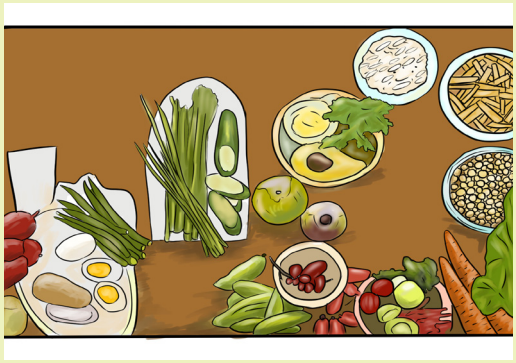
Self-assessment 1.2

1. Identify the major classes of infant formulas.
2. Explain the disadvantages of formula feeding.
3. What are the advantages of three major classes of infant formulas?

1.3. Supplementary feeding

Learning activity 1.3

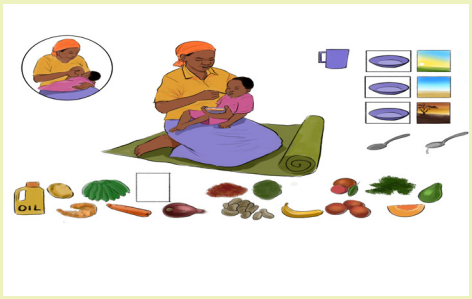
Observe the following pictures and answer the given questions



A



B



C



D

1. What are you seeing on the first two pictures (A and B)
2. What do the last two pictures (C and D) communicate to you?
3. According to you what will the lesson of today talk about?

1.3.1.Vitamin and mineral supplementation

With the exception of vitamins D and K, human milk from well-nourished mothers provides all the nutrients required for the first four to six months of life. Routine administration of intramuscular vitamin K at birth has eliminated vitamin K deficiency. Commercial infant formulas are fortified with vitamins and minerals; therefore, supplements are unnecessary.

a. Vitamin D

Human milk contains very little vitamin D. Therefore, an additional source is recommended for exclusively breast-fed infants who may not be exposed to sunlight. Vitamin D needs will be met from occasional exposure to small amounts of sunlight, or prophylactic supplementation with 200 IU (5 μg) vitamin D/day. Infants at risk for vitamin D deficiency and the development of nutritional rickets are those who are dark-skinned, exclusively breast-fed, living at high northern or southern latitudes, or weaned to vegetarian diets. Naturally occurring dietary sources of vitamin D are rare (liver, oily fish), while only milk and margarine may be fortified with vitamin D in some countries. With increasing use of sunscreen and avoidance of sun exposure due to the risks of skin cancer, the potential for vitamin D deficiency may be higher.

b. Iron deficiency

Iron deficiency is most common among infants between the ages of 6 and 24 months. The major risk factors for iron deficiency anemia in infants relate to socioeconomic status and include the early consumption of cow's milk, inadequate funds for appropriate foods, and poor knowledge of nutrition. Other high-risk groups include low birth weight and premature infants and older infants who drink large amounts

of milk (1liter/day) or juice and eat little solid food. The importance of preventing rather than treating anaemia has been accentuated by findings that iron deficiency anaemia may be a risk factor for developmental delays in cognitive function and that this delay is irreversible with iron therapy and persists into early childhood.

Strategies for the prevention of iron deficiency anaemia

In order to prevent iron deficiency anaemia the baby should be exclusively breast-fed during the first 4–6 months, then there will be the introduction of iron-fortified infant cereal, other iron-rich foods (e.g. strained meats) and enhancers of iron absorption (vitamin C, e.g. fruit) from 6 months. There is a need of using iron-fortified formula for infants weaned early from the breast or formula fed from birth. The introduction of unmodified cow's milk should be delayed until at least 9–12 months of age.

c. Fluoride

Fluoridation of the water supply has proven to be the most effective, cost-efficient means of preventing dental caries. In areas with low fluoride levels in the water source, fluoride supplements are recommended.

The increased availability of fluoride (fluoridated water, foods or drinks made with fluoridated water, toothpaste, mouthwashes, and vitamin and fluoride supplements) has resulted in an increasing incidence of very mild and mild forms of dental fluorosis in both fluoridated and non-fluoridated communities.

This sign of excess fluoride intake has led to modifications in fluoride recommendations including later introduction and lower doses of fluoride supplements, and caution to parents of young children to use small amounts, and discourage swallowing of toothpaste. Dental fluorosis has not been shown to pose any health risks and while there may be mild cosmetic effects, the teeth remain resistant to caries.

d. Cow's milk

The use of unmodified cow's milk before 9–12 months of age is not recommended. In comparison to human milk and iron fortified formula, cow's milk is higher in nutrients such as protein, calcium, phosphorus, sodium, and potassium and significantly lower in iron, zinc, ascorbic acid, and linoleic acid. Nutrients in solid foods emphasize these excesses and deficiencies, so that cow's milk-fed infants receive a higher renal solute load and are at greater risk of eating an unbalanced diet. In particular, the risk for iron depletion and iron deficiency anaemia is higher because the iron content of cow's milk is low and not readily bioavailable and its absorption may be impaired by the high concentrations of calcium and phosphorus and low concentration of ascorbic acid in cow's milk. In addition, intestinal loss of (blood) iron in the stool is associated with Cow's milk-feeding in the first six months of life. Whole cow's milk (3.3% butterfat) continues to be recommended for the

second year of life. Two percent milk may be an acceptable alternative provided that the child is eating a variety of foods and growing at an acceptable rate.

Table 1.3. 1 Nutrient content of human milk, formula, and cow's milk per liter

Nutrient	Human milk mature	Formula			Cow's milk 3.3% fat
		Cow's milk based	Soy-based	Follow-on	
Energy (kcal)	680	670	670	670	640
Protein (g)	10	15	19	17	32
Fat (g)	39	36	37	33	36
Carbohydrate(g)	72	72	69	79	48
Sodium (mmol)	8	8	11	10	22
Potassium (mmol)	14	18	19	23	40
Chloride (mmol)	12	13	13	15	27
Vitamin D (µg)	<0.5	10	10	10	9
Iron (mg)	0.4	2.3/12	12	12	0.4

Self-assessment 1.3

1. Explain how to prevent iron deficiency anemia to an infant during the weaning period?
2. Identify the nutrients which are highly found in cow's milk in comparison to human milk and iron fortified formula?
3. Which foods should be emphasized in order to avoid excesses and deficiencies resulting from cow's milk as supplementary food during weaning period

1.4. Childhood special considerations

Learning activity 1.4

Observe the pictures below



A



B

1. What message do you get from each of the above-mentioned pictures?
2. Compare the pictures A and B in terms of the activities that are being done and their importance.
3. What do expect to study in this lesson?

1.4.1. Special considerations for childhood

Childhood is usually regarded as the period between 2 and 10 years. The linear growth of pre-pubertal children occurs at a relatively constant rate of about 6 cm per year. The median heights and weights of girls and boys are very similar. In average, they increase from 87 cm and 12 kg at age 2 years, to 137 cm and 32 kg at 10 years.

Children are a potentially vulnerable group since they are entirely dependent upon parents or caregivers for all nutritional needs. Inadequate intakes of energy and essential nutrients may compromise growth and development to an extent which may have lasting consequences.

However, in most relatively affluent societies where a wide variety of foods are available, growth and development usually occur quite satisfactorily without detailed dietary advice. Obesity, rather than under-nutrition, is the major nutrition-related disorder. An important consideration is that eating habits determined in childhood may be important determinants of chronic disease in later life.

1.4.2. Calories and Nutrients

Total calorie needs steadily increase during childhood, although calorie needs per kilogram of body weight progressively fall. The challenge in childhood is to meet nutrient requirements without exceeding calorie needs.

1.4.3. Eating Practices

As children get older, they consume more foods from non -home sources and have more outside influences on their food choices. School, friends' houses, childcare centers, and social events present opportunities for children to make their own choices beyond parental supervision.

Children who are home alone after school prepare their own snacks and, possibly, meals.

The ideal of children eating breakfast, dinner, and a snack at home, with a nutritious brownbag or healthy cafeteria lunch at school, is not representative of what most children are eating. Children who eat dinner with their families at home tend to have higher intakes of fruits, vegetables, vitamins, and minerals and lower intakes of saturated and trans-fatty acids, soft drinks, and fried foods. Family meals promote social interaction and allow children to learn food-related behaviors. Parents should provide and consume healthy meals and snacks and avoid or limit empty-calorie foods.

1.4.4. Nutrients of Concern

Important concerns during childhood include excessive intakes of calories, sodium, and fat, especially saturated fat. Nutrients most likely to be consumed in inadequate amounts are calcium, fiber, vitamin E, magnesium, and potassium. The percentage of children with usual nutrient intakes below the Estimated Average Requirement (EAR) tends to increase with age and is greater among females than males. It is recommended to children who consume less than1 L/day of vitamin D–fortified milk takes a supplement of 400 IU/day.

Self-assessment 1.4

1. Identify nutrients which are excessively consumed by children and those which are consumed in inadequate amounts.
2. What would you recommend to parents/care givers for promoting the good eating habits of children?
3. What nutrients should be mostly recommended for promoting the growth of children

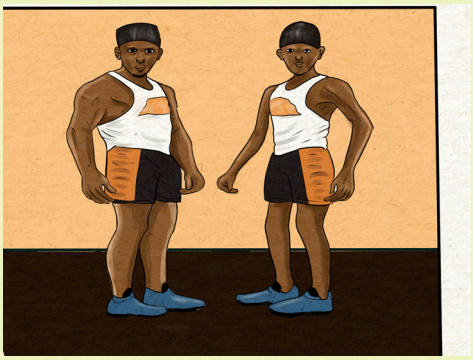
1.5. Special considerations and nutritional disorders in adolescence

Learning activity 1.5

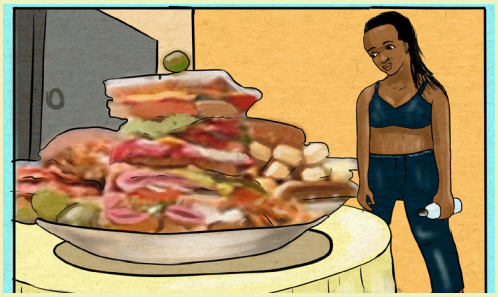
Observe the pictures below and answer the questions given below:



A



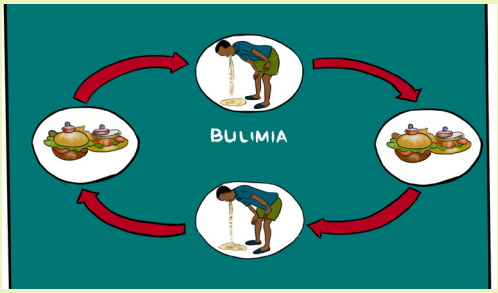
B



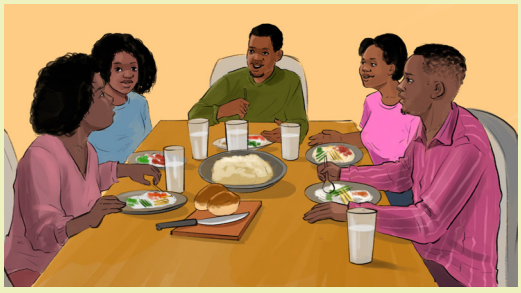
C



D



E



F

1. The persons in pictures A and B are adolescents observing themselves in mirror. Discover what they are thinking about their physical appearance.
2. Compare pictures C, D, E, and F. Identify the normal and abnormal behaviors displayed in each of those pictures.

1.5.1. Introduction

During adolescence physiological age is a better guide to nutritional needs than chronological age. Energy needs increase to meet greater metabolic demands of growth. Daily requirement of protein also increases. Calcium is essential for the rapid bone growth of adolescence, and girls need a continuous source of iron to replace menstrual losses. Boys also need adequate iron for muscle development. Iodine supports increased thyroid activity, and use of iodized table salt ensures availability. B-complex vitamins are necessary to support heightened metabolic activity.

Many factors other than nutritional needs influence the adolescent's diet, including concern about body image and appearance, desire for independence, eating at fast-food restaurants, peer pressure, and fatty diets. Nutritional deficiencies often occur in adolescent girls as a result of dieting and use of oral contraceptives. Skipping meals or eating meals with unhealthy choices of snacks contributes to nutrient deficiency and obesity.

Fortified foods (nutrients added) are important sources of vitamins and minerals. Snack food from the dairy and fruit and vegetable groups are good choices. To counter obesity, increasing physical activity is often more important than restricting intake.

The onset of eating disorders such as **anorexia nervosa or bulimia nervosa** often occurs during adolescence. Recognition of eating disorders is essential for early intervention. Sports and regular moderate-to-intense exercise necessitate dietary modification to meet increased energy needs for adolescents.

Carbohydrates, both simple and complex, are the main source of energy, providing 55% to 60% of total daily kilocalories. Protein needs increase to 1 to 1.5 g/kg/day. Fat needs do not increase. Adequate hydration is very important. Adolescents need to ingest water before and after exercise to prevent dehydration, especially in hot, humid environments. Vitamin and mineral supplements are not required, but intake of iron-rich foods is required to prevent anemia.

Parents have more influence on adolescents' diets than they believe. Effective strategies include limiting the amount of unhealthy food choices kept at home, encouraging smart snacks such as fruit vegetables or string cheese, and enhancing the appearance and taste of healthy foods.

The ways to promote healthy eating include making healthy food choices more convenient at home and at fast-food restaurants; and discouraging adolescents from eating while watching television.

Malnutrition at the time of conception increases risk to the adolescent and her fetus. Most teenage girls do not want to gain weight. Counseling related to nutritional

needs of pregnancy is often difficult, and teens tolerate suggestions better than rigid directions. The diet of pregnant adolescents is often deficient in calcium, iron, and vitamins A and C. Prenatal vitamin and mineral supplements are recommended.

1.5.2. Nutritional disorders in adolescence

Adolescence is a stressful time for most young people. They are unexpectedly faced with numerous physical changes, an innate need for independence, increased work and extracurricular demands at school, in many cases jobs, and social and sexual pressures from their peers. For many teens, such stress can cause one or more of the following problems: anorexia nervosa, bulimia.

a. Anorexia Nervosa

Anorexia nervosa, commonly called anorexia, is a **psychological disorder** characterized by an obsessive desire to lose weight by refusing to eat. It is more common to women than men. It can begin as early as late childhood, but usually begins during the teen years or the early twenties.

It causes the adolescent to drastically reduce calories, causing altered metabolism, which results in hair loss, low blood pressure, weakness, **amenorrhea**, brain damage, and even death.

The causes of anorexia are unclear. Someone with this disorder (an anorexic) has an inordinate fear of being fat. Some anorexics have been over-weight and have irrational fears of regaining lost weight. Some young women with demanding parents perceive this as their only means of control. Some may want to resemble slim fashion models and have a distorted body image, where they see themselves as fat even though they are extremely thin. Some fear growing up. Many are perfectionistic overachievers who want to control their body. It pleases them to deny themselves food when they are hungry.

These young women usually set a maximum weight for themselves and become an expert at “counting calories” to maintain their chosen weight. They also often exercise excessively to control or reduce their weight. If the weight declines too far, the anorexic will ultimately die.

Treatment requires the following:

Development of a strong and trusting relationship between the client and the health care professionals involved in the case. The adolescent should learn and accepts that weight gain and a change in body contours is normal during adolescence. There is need to focus on nutritional therapy so that the adolescent understand the need for both nutrients and calories and how best to obtain them. Individual and family should be counselled in order to make sure that the problem is understood by everyone. Close supervision should be done by the health care professional. For achieving the desired results, there is need of time and patience from all involved.

b. Bulimia

Bulimia is a syndrome in which the adolescent alternately binges and purges by inducing vomiting and using laxatives and diuretics to get rid of ingested food. Bulimics are said to fear that they cannot stop eating. They tend to be high achievers who are perfectionistic, obsessive, and depressed. They generally lack a strong sense of self and have a need to seem special. They know their binge–purge syndrome is abnormal but also fear being overweight. This condition is more common among women than men and can begin any time from the late teens into the thirties.

A bulimic usually binges on high-calorie foods such as cookies, ice cream, pastries, and other forbidden foods. While eating, the binge can take only a few moments or several hours—until there is no space for more food. It occurs when the person is alone. Bulimia can follow a period of excessive dieting, and stress usually increases the frequency of binges.

Bulimia is not usually life-threatening, but it can irritate the oesophagus and cause electrolyte imbalances, malnutrition, dehydration, and dental caries.

Treatment usually includes limiting eating to mealtimes, portion control, and close supervision after meals to prevent self-induced vomiting. Diet therapy helps teach the adolescent basic nutritional facts so that he or she will be more inclined to treat the body with respect. Psychological counselling will help to understand his or her fears about food. Group therapy also can be helpful.

Both bulimia and anorexia can be problems that will have to be confronted throughout the client's life.

Self-assessment 1.5

1. Identify the most required nutritional needs during adolescence age.
2. What are the factors (other than nutritional needs) that influence the adolescent diet?
3. What are the characteristics of anorexia nervosa?
4. What are the requirements for the treatment of anorexia nervosa?
5. Describe the characteristics of an adolescent suffering from bulimia.
6. Discuss the management of bulimia.

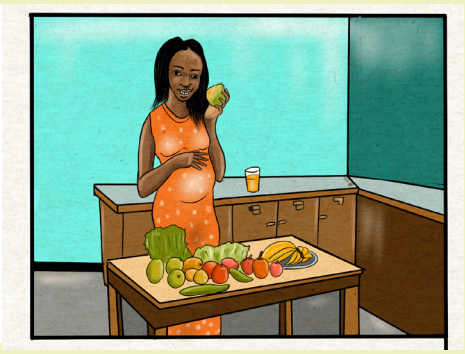
1.6. Special nutrition in pregnancy

Learning activity 1.6

Observe the pictures below and answer the questions given below:



A



B



C



D

1. What are you seeing on the pictures A and B?
2. Describe the activities which are being done on the pictures A and B.
3. What do you think may be the title of today's lesson?
4. What do you think is the role of each food presented on picture C?

1.6.1. Balanced diet

A balanced diet is essential for the good health of a pregnant mother and her baby. Eating well will provide nutrients that are needed by the mother and her baby. A healthy diet will also help ensure a healthy weight gain, ensure get the key vitamins and minerals needed, and reduce the risk of pregnancy complications.

Poor nutrition during pregnancy and unhealthy lifestyle behaviors during pregnancy increase the risk of developing nutrient deficiencies, birth defects and pregnancy complications, it causes also low birth weight in infants and decreases chances of survival. Maternal underweight is associated with an increased risk of premature birth and maternal overweight is associated with a higher frequency of premature birth, higher Caesarean section rates and increased risk of neural tube defects. A healthy diet and regular physical activity may reduce the risk of negative pregnancy outcomes associated with underweight and overweight. Many women mistakenly believe that during pregnancy they need to "eat for two" (mother and baby).

The energy requirements of pregnancy are related to the mother's body weight and activity. The quality of nutrition during pregnancy is important, and food intake since the first trimester includes balanced portions of essential nutrients with emphasis on quality. Protein intake throughout pregnancy needs to increase to 60 g daily, which represents an increase from 46g/d in non-pregnant states. Protein is essential for the growth and development of fetus. In other words, this increase reflects a change to 1.1g of protein/kg/day during pregnancy from 0.8g of protein/kg/day for non-pregnant states.

The pregnant women should eat two to three portions of protein rich foods every day including lean meat, poultry, seafood, eggs, legumes, tofu, nuts and seeds.

1.6.2. Calcium

Calcium intake is especially critical in the third trimester, when fetal bones are mineralized. It is especially important for the growth of strong bones. It's important to consume adequate amounts of calcium in pregnancy to support the musculoskeletal, nervous, and circulatory systems. Pregnant women who do not consume sufficient amounts of calcium are at greater risk of developing osteoporosis later in life. Pregnant and lactating women need 1000 mg of calcium per day. Pregnant teens need 1300 mg of calcium per day. Foods rich in calcium include dairy products such as milk, yoghurt, and cheese. Plant sources include tofu, green leafy vegetables and fortified foods.

1.6.3. Iron

Iron needs to be supplemented to provide for increased maternal blood volume, fetal blood storage, and blood loss during delivery. However, by focusing on eating a variety of iron-rich foods, you should be able to get all the iron you need from foods. Foods high in iron include red meat such as beef, lamb and eggs, lean beef and poultry. Plant sources include spinach, and whole grain cereals, dark green, leafy vegetables, citrus fruits. Iron from plant sources is less readily absorbed by the body than those from animal foods. Iron absorption can be increased from plant sources by eating them with foods rich in vitamin C, like fruits and vegetables.

1.6.4. Folic acid

Folic acid intake is particularly important for deoxyribonucleic acid (DNA) synthesis and the growth of red blood cells. Inadequate intake can lead to fetal neural tube defects, anencephaly, or maternal megaloblastic anemia. Sources of folic acid include, but not limited to liver, nuts, dried beans, lentils and eggs.

1.6.5. Special consideration

Prenatal care usually includes vitamin and mineral supplementation to ensure daily intakes; however, pregnant women should not take additional supplements beyond prescribed amounts. On the other hand, alcohol use during pregnancy can cause physical and neuro-developmental problems, such as mental retardation, learning disabilities, and fetal alcohol syndrome. A high caffeine intake is associated with low birth weight (LBW) but not with birth defects or preterm birth.

Self-assessment 1.6

You are requested to help a pregnant woman who came to your Health Center for antenatal care in 1st term of pregnancy, which kind of foods you will recommend to her during the remaining period.

1.7. Maternal Diet during lactation

Learning activity 1.7

Observe the pictures below



A



B

1. Name the food presented in the pictures A and B?
2. What do you think may be their importance to the mother in picture B?
3. What do you expect to learn in this lesson?

Nutritional needs during lactation are based on the nutritional content of breast milk and the energy “cost” of producing milk. Compared with pregnancy, the need for some nutrients increases, whereas the need for other nutrients falls. The healthy diet consumed during pregnancy should continue during lactation.

The **lactating woman needs 500 kcal /day** above the usual allowance because the production of milk increases energy requirements. **Protein** requirements during lactation are greater than those required during pregnancy. The recommended daily allowance for protein during lactation is an additional 25 g/day. The need for **calcium** remains the same as during pregnancy (that is 1000mg/day). Lactating teens need 1300 mg of calcium per day.

Requirements of many micronutrients increase compared to pregnancy, with the exception of vitamins D and K, calcium, fluoride, magnesium, and phosphorus. As such, it is recommended that women to continue to take a prenatal vitamin daily while they are breastfeeding

There is an increased need for **vitamins A and C.** Daily intake of **water-soluble vitamins** (B and C) is necessary to ensure adequate levels in breast milk.

For many vitamins and minerals, requirements during lactation are higher than during pregnancy. In general, an inadequate maternal diet decreases the quantity of milk produced, not the quality. The exceptions are thiamin, riboflavin, vitamin B6, vitamin B12, vitamin A, and iodine: prolonged inadequate maternal intake of these nutrients reduces their amount in breast milk and may compromise infant nutrition. While maternal supplements can correct inadequacies, there are no consistent recommendations concerning the use of supplements during lactation. Women are encouraged to obtain nutrients from food, not supplements; however, iron supplements may be needed to replace depleted iron stores, not to increase the iron content of breast milk.

Another nutritional consideration during lactation is **fluid intake.** It is suggested that breastfeeding mothers drink a glass of fluid every time the baby nurses and with all meals. Thirst is a good indicator of need except among women who live in a dry climate or who exercise in hot weather. Fluids consumed in excess of thirst quenching do not increase milk volume.

In reality, breastfeeding is not always associated with return to preconception weight, and some women actually gain weight during lactation.

Other considerations concerning maternal diet and breast milk are as follows:

Highly flavored or **spicy** foods may impact the flavor of breast milk but need only be avoided if infant feeding is affected. Some babies are irritated by spicy foods, but others are fine with it

So, it is best to lessen the number of spices in food for lactating mother, if she notices her baby being uncomfortable with it.

Caffeine, alcohol, and drugs are excreted in breast milk and should be avoided. Consistent evidence shows that when a lactating mother consumes alcohol, it easily enters breast milk and results in reduced milk production. There is no scientific evidence to support alcohol consumption during lactation. An occasional drink of alcohol may occur, but women should not breastfeed for at least 4 hours afterward.

The lactating mother should be aware that caffeine enters breast milk. Maternal intake should be moderate, such as the equivalent of one to two cups of coffee daily.

Chocolate is rich in theobromine, and when eaten, has a similar effect to that of caffeine. Though people love having chocolate, they should cut down the quantity while breastfeeding.

Some babies could be **intolerant to cow milk**. When the mother drinks cow milk or has dairy products, then the allergens that have entered the breast milk irritate the baby. After consuming dairy products, if the baby shows symptoms like colic and vomiting, it means that the intake of the dairy products should stopped for a while.

The smell of **garlic** can affect the smell of breast milk. Some babies hate it while others like it. Therefore, garlic may be stopped if the baby is uncomfortable while nursing. Some babies might fuss or grimace at the breast when they encounter the strong smell of garlic. Until you wean your baby, avoid peanuts, especially if your family has a medical history of allergies to peanuts. **Peanuts allergic** proteins might pass to the produced breast milk, and then reach the baby.

If you consume fish or any other foods having high mercury content, then this will appear in the breast milk. When breast milk has high levels of mercury, it might affect the neurological development of your baby. A lactating mother should not consume fish more than twice a week. It is best to avoid fish that has high mercury completely.

If you had **broccoli** for dinner the previous day, then you should not be surprised when your baby has **gassy problems** the next day. Other gassy foods like **onions, cabbage, cauliflower, and cucumber** should be avoided while breastfeeding in case the baby doesn't tolerate them. **Citrus fruits** are an amazing source of Vitamin C, but this can irritate the baby's stomach due to their acidic components. As their gastrointestinal tract is immature, they're unable to deal with these acid components, resulting in fussiness, diaper rashes, spitting up, and more. The mother doesn't have to remove citrus fruits completely from her diet, though. Having one grapefruit or orange daily is fine. But if she decides to cut them out completely, then she should have other vitamin C-rich foods like pineapples, papayas, and mangoes.

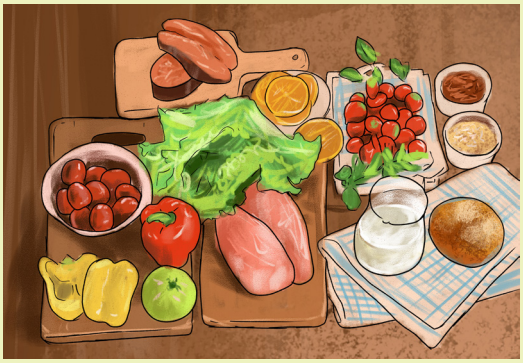
Self-assessment 1.7

1. Identify the maternal diet recommended during lactation period.
2. What will you discourage to eat or drink during lactation period?

1.8. Special geriatric nutritional needs

Learning activity 1.8

Observe the following pictures:



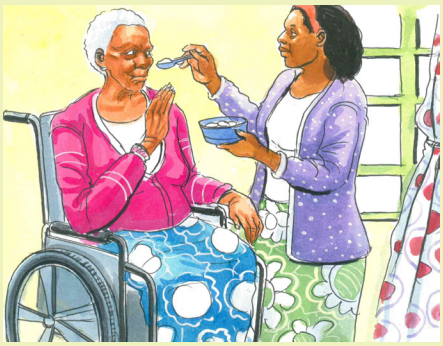
A



B



C



D

1. What does each of the pictures A, B, C, and D communicate to you?
2. Identify the groups of foods included in picture A and their importance.
3. What do you expect to learn from this lesson?

Nutrition plays an important role in health maintenance, rehabilitation, and prevention and control of disease. When dealing with nutritional issues, nurses who work with older adults must consider the following: (1) the basic components of a well-balanced diet for older adults; (2) how the normal physiologic changes of aging change nutritional needs; (3) how the normal physiologic changes of aging may interfere with the purchase, preparation, and consumption of nutrients; and (4) how cognitive, psychosocial, and pathologic changes commonly seen in aging impact one's nutritional status.

Nutrition and aging

Nutritional needs do not remain static throughout life. Like other needs, older adults' nutritional needs are not exactly the same as those of younger individuals. An understanding of older adults' nutritional needs is essential for providing good nursing care. Good nutrition practices play a vital role in health maintenance and health promotion. Good eating habits throughout life promote physical wellness and mental well-being. Inadequate nutrition and fluid intake can result in serious problems such as malnutrition and dehydration. Poor nutrition practices can contribute to the development of osteoporosis and skin ulcers, and can complicate existing conditions, such as cardiovascular disease and diabetes mellitus.

Good eating habits developed early in life promote health in old age. Older adults are at risk for nutritional problems because of changes in physiology including changes in body composition, gastrointestinal tract, metabolism, central nervous system, renal system, and the senses. There are also changes in income, changes in health, psychosocial changes, and memory loss (senile dementia), which may include forgetting to eat. Other changes include sensory changes, and physical problems like weakness, gouty arthritis and painful joints.

Some elderly people have difficulty getting adequate nutrition because of age or disease related impairments in chewing, swallowing, digesting and absorbing nutrients. Age-related gastrointestinal changes that affect digestion of food and maintenance of nutrition include changes in the teeth and gums, reduced saliva production, atrophy of oral mucosal epithelial cells, increased taste threshold, decreased thirst sensation, reduced gag reflex, and decreased esophageal and colonic peristalsis. Their nutrient status may also be affected by decreased production of chemicals to digest food (digestive enzymes), changes in the cells of the bowel surface and drug–nutrient interactions.

The presence of chronic illnesses (e.g., diabetes mellitus, end-stage renal disease, cancer) often affects nutrition intake. Adequate nutrition in older adults is affected by multiple causes such as lifelong eating habits, ethnicity, and socialization. It is also affected by income, educational level, and physical functional level to meet activities of daily living (ADLs), loss, dentition, and transportation.

Adverse effects of medications cause problems such as anorexia, gastrointestinal bleeding, xerostomia, early satiety, and impaired smell and taste perception. Cognitive impairments such as delirium, dementia, and depression affect ability to obtain, prepare, and eat healthy foods.

Some elderly people demonstrate selenium deficiency, a mineral important for immune function. Impaired immune function affects susceptibility to infections and tumors (malignancies). Vitamin B6 helps to boost selenium levels, so a higher intake for people aged 51–70 is recommended.

Nutritional interventions should first emphasize healthy foods, with supplements playing a secondary role. Although modest supplementary doses of micronutrients can both prevent deficiency and support immune functions, very high dose supplementation (example, high dose zinc) may have the opposite effect and result in immune-suppression. Therefore, elderly people also need special attention with regard to nutritional care.

Older adults represent a heterogeneous population that varies in health, activity, and nutritional status. Generalizations about nutritional requirements are less accurate for this age group than for others.

Generally, **Calorie needs decrease with age;** attributed in large part to progressive decreases in physical activity (a decrease in physical activity directly lowers calorie expenditure. Indirectly, a decrease in physical activity leads to a loss of lean body mass).

Requirements for older people **increase for calcium and vitamin D**. For example, in order to reduce the risk for age related bone loss and fracture, the requirement for vitamin D is increased from 200 IU/day to 400 in individuals of 51–70 years of age and to 600 IU/day for those over 70 years of age. The equivalent of three glasses of milk is needed to meet calcium requirement in older adults. Calcium supplements may be necessary to achieve the recommended amount. Other nutrients important for bone health include vitamin A, vitamin K, magnesium, vitamin C, and phytoestrogens.

Older adults need to obtain their Recommended Dietary Allowance (RDA) for **vitamin B12** from the synthetic form found in supplements or fortified foods. The dietary Reference Intakes (DRIs) for **sodium decreases** due to the decrease in calorie requirement. The RDA for **iron in women decreases** when menses stops. Generally, older adults do not consume enough vitamin E, magnesium, fiber, calcium, potassium, and probably vitamin D. They should be encouraged to eat more whole grains, dark green and orange fruits and vegetables, legumes, and milk and milk products.

Screening for nutritional problems is appropriate for all older adults and in all settings.

Screening is essential so that timely nutrition intervention can be instituted. Weight loss is the most effective dietary strategy against osteoarthritis. The benefits of weight loss and exercise combined are greater than when either method is used alone. Benefits include improvements in physical function and quality of life. Even interventions begun late in life can slow or stop bone loss characteristic of osteoporosis.

Sarcopenia is the loss of muscle mass and strength that occurs with aging. It is not inevitable and can be reversed with resistance training and adequate protein intake. To build muscle in older adults, more protein than the RDA may be required.

The treatment of obesity in older adults is not without risk. Weight loss can be counterproductive if it comes from a loss of muscle and bone, not fat. For many older adults, malnutrition presents more of a risk than overweight. A heart healthy diet may help reduce the risk of Alzheimer disease (AD) and coronary heart disease (CHD).

Pressure ulcers increase the need for calories, protein, and other nutrients. Increasing nutrient density without increasing the volume of food served may be the most effective method of delivering additional nutrients. Between-meal supplements may also be needed to maximize intake.

Table 1.8 1 Sources of food components that may be emphasized in the diets

Food Component	Sources
Vitamin A	Green and orange vegetables, especially green leafy vegetables; orange fruits, liver, milk
Vitamin D	Milk, fortified soy milk, fatty fish, some fortified ready-to-eat cereals
Vitamin E	Vegetable oils, margarine, salad dressing made with vegetable oil, nuts, seeds, whole grains, green leafy vegetables, fortified cereals
Calcium	Milk, yogurt, cheese, fortified orange juice, green leafy vegetables, Legumes
Magnesium	Green leafy vegetables, nuts, legumes, whole grains, seafood, chocolate, milk
Potassium	Fruit and vegetables, legumes, whole grains, milk, meats
Fiber	Whole grains; legumes; fruit and vegetables, especially the skin and Seeds

Self-assessment 1.8

1. What are the negative effects that result from poor nutrition practices of older people?
2. Why older adults are at risk for nutritional problems?
3. Discuss the food components and their sources that should be emphasized in the diets of older Adults.

1.9. Food security and availability

Learning activity 1.9

Observe the images below and respond to the questions that follow



A



B

1. What the images A and B are communicating to you?
2. What do you think about the health, social and economic status of the persons in pictures A and B?
3. What do you expect to learn from this lesson?

1.9.1.Introduction to Food security and availability

The concept of food security means that the need for households to have both physical and economic access to the national food supply is fulfilled. The household food security exists when all the people living in the household have **physical, social** and **economic access** to sufficient, safe and nutritious food at all times. It should meet their dietary needs and food preferences for an active and healthy life.

Food security is more than simply access to enough food to prevent death by starvation. The current understanding of food security accordingly emphasizes the quality of the diet – on the need for dietary diversity and for food that supplies the micronutrients necessary to create and sustain health.

1.9.2. Levels of food and nutrition security

An individual's food security – at house level, is the final step in a sequence of food production and distribution, from the availability of food globally and nationally to access to food at the household level. **Global food availability** refers to the total amount of food that is produced globally. Currently, global food availability would be more than adequate to meet the energy needs of the entire world's people if the provision of food was equally distributed.

National food availability refers to the amount of food available for consumption by a country's population. This supply of food consists of total agricultural production (cash crops, livestock, and food crops), net food imports (imports minus exports), food aid, and food stocks. A country is self-sufficient if it is able to produce 100% (or more) of its national food requirements.

1.9.3. Household Food Security:

Sufficient amounts of food may be available at the national level, but people must have both physical and economic access to this food. Unless they are able to generate enough food on their own to provide a balanced diet, they must be able to reach a place where food is available. National food security is a prerequisite but no guarantee of household food security. Household food security includes the following:

(1) Households need **physical access** to a place where food is available. Households typically obtain food through producing their own crops or livestock for consumption, purchasing from markets, receiving food as a transfer from relatives, members of the community, the government, or foreign donors, and gathering in the wild. Physical availability of food relates to local production, agricultural productivity, and the ability of markets to deliver food to consumers and agricultural inputs to farmers. In developing countries, availability through local food production is often affected by low agricultural productivity, seasonality, and inadequate adoption of appropriate technologies.

(2) Regardless of the source of food, households must have the means to acquire appropriate foods. **Economic access** therefore refers to the affordability of food to the consumer. The majority of people worldwide, including those in low-income countries, obtain at least part of their food through markets. Households' ability to purchase food depends on the households' income and the price of food.

The factors that affect either food prices or household income influence the people's ability to buy food.

(3) **Socio-political access:** Various social and political factors affect household food security. Households in developing countries may, for example, have unequal access to food because of unequal social conditions and exclusionary practices. Social conflict can also threaten the food access of affected people.

1.9.4. Causes of food insecurity

The causes of food and nutrition insecurity all relate to either insufficient national food availability or insufficient access to food by households and individuals.

Several global risks can potentially impact the availability of food at the **national level.** These include high and volatile food prices, financial and economic shocks, climate change, and epidemic outbreaks of human disease and crop and livestock disease. Other factors may be: the general social, economic, and political environment prevailing at national level; the presence of natural shocks or conflict; the quality of commercial and trade policies; the commitment of the political leadership to hunger reduction; and the prevalence of institutions that enable participation of women and marginal groups in decision-making processes that affect their future. The food insecurity at the **household level** include shocks in production (e.g., harvest failure), market (e.g., lost employment), or household expenditure (e.g., emergency medical costs resulting in less money available for food).

Other factors may include, but not limited to the following reasons: **rapid population growth** (It is not always easy to purchase food for large numbers of family members), **conflict and/or civil war** (interfere with production, marketing and distribution), and **extreme production fluctuation.** They include also **limited or lack of employment, lower level of saving, high rate of natural erosion and/or natural disasters, poor health and sanitation** which may lead to the increased morbidity, mortality and reduced productivity due to illness, **deforestation** leads to high top soil erosion and poor soil fertility. It will lead to decreased rainfall and dryness.

1.9.5. Consequences of household food insecurity

The body's response to chronic hunger and malnutrition is a decrease in body size. In small children this is known as **stunting**, or stunted growth, and is indicated by low weight for height. This process starts as the baby is growing in the uterus, if the mother is malnourished, and continues until approximately the third year of life. It leads to higher infant and child mortality, with rates increasing significantly during famines.

Once stunting has occurred, improved nutritional intake later in life cannot reverse the damage. Premature failure of vital organs occurs during adulthood.

For example, a 50-year-old individual might die of heart problems because their heart suffered structural defects during early development. Stunted individuals suffer a far higher rate of disease and illness than those who have not undergone stunting. Severe malnutrition in early childhood often leads to defects in mental development. Chronic food insecurity will lead to poor growth, slower development, low educability, school absenteeism or dropout, and increased morbidity and decreased survival impacting on the socioeconomic development through several generations.

1.9.6. Community-based Actions to address food and nutrition insecurity

Community-based interventions to improve household food availability and dietary diversity are considered sustainable solutions to address household food and nutrition insecurity in developing countries. In these interventions, household food availability is increased through **local production**, thereby increasing the household's access to diverse and micronutrient-rich foods. Such programs can also lead to reduced household poverty, improved nutritional status of household members, and potentially empower women.

Food-based strategies at the community level generally focus on the production of nutritious food for household consumption. These strategies have the potential for income generation, provided that households produce a surplus and have easy access to markets at which to sell their harvest. Economically viable post-harvest products could further enhance market possibilities for locally produced crops.

To ensure that the gardening activities translate into improved dietary quality, home-gardening projects need to include a strong nutrition education and behavior change component. Various entry points can be used for nutrition education and promotions. The best choice of intervention depends on the nature and the magnitude of the problem. A situation assessment prior to the intervention will indicate which elements of food insecurity are involved and who is affected. Analysis of the underlying causes of food and nutrition insecurity should be the core of any sustainable intervention that aims to prevent recurrence and does not create dependency.

Self-assessment 1.9

1. Identify the levels of food security.
2. What are the causes of food insecurity?

1.10. Food contamination and spoilage

Learning activity 1.10

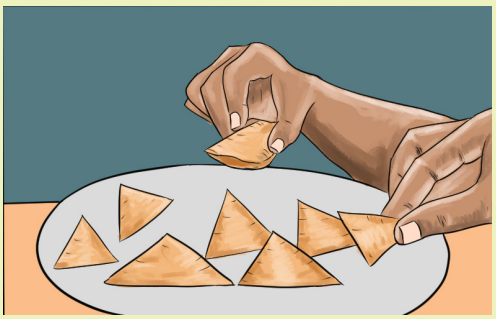
Observe the images below













1. Name the items in the pictures A, B, C, D, E and F and indicate the place where they are
2. What is happening on picture C and F? What do you think will be the result?

Bacteria are a major source of microbial contamination of food (i.e., the undesired presence in food of harmful microorganisms or the harmful substances they produce). Viruses, parasites and fungi are also able to contaminate food and cause foodborne illnesses in humans.

1.10.1. Routes for food contamination

Microorganisms can enter food through different routes including the followings:

Air and dust: Microorganisms are found everywhere in our environment. Many types of microbes can be found in air and dust, and can contaminate food at any time during food preparation or when food is left uncovered.

Soil, water and plants: Many microorganisms present in soil and water may contaminate foods. Microorganisms also grow on plants and can contaminate food if care is not taken to remove them by washing or inactivate them by cooking.

Gastrointestinal tract: The intestines of all humans and animals are full of microorganisms, some of which are beneficial but others are pathogenic. Bacterial pathogens such as Salmonella, Campylobacter and Escherichia coli are common examples.

Animals: Many foodborne microorganisms are present in healthy animals raised for food, usually in their intestines, hides, feathers, etc. Meat and poultry carcasses can be contaminated during slaughter by contact with small amounts of intestinal contents. For example, in animals slaughtered in rural communities without any safety measures, microorganisms present in the animals' intestines can easily contaminate the meat.

Food handlers: The term food handler can be applied to anyone who touches or handles food, and this includes people who process, transport, prepare, cook and serve food. The presence of microorganisms on the hands and outer garments of food handlers reflects the standard of hygiene in the environment and the individuals' personal hygiene.

Food utensils: Food utensils are cutting boards, knives, spoons, bowls and other equipment used in food preparation, which may become contaminated during food processing and preparation. For example, in families where there is no access to running water, the food utensils may not be properly cleaned, stored and handled, and may become a major route of food contamination.

Cross-contamination of food is the transfer of harmful microorganisms between food items and food contact surfaces. Prepared food, utensils and surfaces may become contaminated by raw food products and microorganisms. These can be transferred from one food to another by using the same knife, cutting board or other utensil without washing it between uses.

A food that is fully cooked can become re-contaminated if it touches raw foods or contaminated surfaces or utensils that contain pathogens.

Unsafe temperature: An unsafe temperature for food storage is a major factor in food contamination. Many microorganisms need to multiply to a very large number before enough are present in food to cause disease in someone who eats it.

Poor personal hygiene: Poor personal hygiene of food handlers is another major factor in food contamination. The most important contaminants of food are the microorganisms excreted with faeces from the intestinal tract of humans. These pathogens are transferred to the food from faecal matter present on the hands.

Pests: Foods can be damaged and also contaminated by pests. Many stored grains are lost through the damage done by pests, including termites (mist), beetles, locusts, cockroaches, flies and rodents such as rats and mice. Pests can damage and contaminate foods in various ways, such as boring into and feeding on the insides of grains, or tunneling into stems and roots of food plants.

1.10.2. Prevention of food contamination

To prevent contamination, food production and preparation operations need to be carefully controlled, in order to avoid exposing them to microbial, chemical and /or physical food contamination.

In order to prevent **microbial food contamination** people have to have a habit of hand washing before and during food preparation. Attention also needs to be given to possible **chemical contamination of food.** Food can be contaminated through the misuse or mistaken handling of chemicals, including pesticides, bleach and other cleaning materials. All chemicals (detergent, disinfectant, sanitiser) used in the food preparation area should be removed before food preparation begins, to prevent any chemical contamination of the food. **Physical contaminants** include stones, pieces of glass, and metal. Physical contamination can occur at any stage of the food chain: for example, stones, bones, twigs, pieces of shell or foreign objects can enter food during handling and preparation. These materials should be removed, if possible, for example by sieving or picking out the items with clean fingers.

1.10.3. Food spoilage

Microbial spoilage is caused by microorganisms like fungi and bacteria. They spoil food by growing in it and producing substances that change the color, texture and odor of the food. Eventually the food will be unfit for human consumption. Spoilage may be physical or chemical.

Physical spoilage is due to physical damage to food during harvesting, processing or distribution. The damage increases the chance of chemical or microbial spoilage and contamination because the protective outer layer of the food is bruised or broken and microorganisms can enter the foodstuff more easily.

Chemical spoilage: in this case chemical reactions in food are responsible for changes in the color and flavor of foods during processing and storage. Foods are of best quality when they are fresh, but after fruits and vegetables are harvested, or animals are slaughtered, chemical changes begin automatically within the foods

and lead to deterioration in quality. Fats break down and become rancid (smell bad), and naturally-occurring enzymes promote major chemical changes in foods as they age.

1.10.4.Factors influencing food spoilage

The factors that can increase or delay the process of food spoilage include its water content, environmental conditions, packaging and storage. The amount of water available in a food can be described in terms of the water activity. No matter whether food is fresh or processed, the rate of its deterioration or spoilage is influenced by the environment to which it is exposed. The exposure of food to oxygen, light, warmth or even small amounts of moisture can often trigger a series of damaging chemical and/or microbial reactions. Changing the environment can help to delay spoilage (e.g. storing foods at low temperatures).

Packaging helps to protect food against harmful contaminants in the environment or conditions that promote food spoilage including light, oxygen and moisture. The type of packaging is a key factor in ensuring that the food is protected. Packaging of foods in cans, jars, cartons, plastics or paper also serves to ensure food safety if it is intact, because it provides protection against the entry of microorganisms, dust, dirt, insects, chemicals and foreign material.

Danger signs of unsafe food

Food type	Food items	Danger signs
Fresh foods	Fish, meat, dairy products, fruit and vegetables, roots, cooked food, milk and milk products, eggs	Bad smell, Visible signs of mould Fish with dull eyes, loose scales, soft flesh, pale gills Meat with a bad smell or greyish color
Dry food	Flour, grains, nuts, legumes, sugar	Damp, Mouldy
Oils and fats	Vegetable oils, butter, lard	Unusual taste, rancidity

General measures for keeping food safe and clean in the household

Safe food-preparation practices should be respected. People have to observe the following measures for keeping food safe and clean in the household:

1. Hands should always be clean whenever food is handled. Hot water and soap should be used to wash hands after going to the bathroom, before handling cooked foods, and after handling raw food.

2. A person who is ill should not prepare food.
3. During food preparation, contact between hands and the mouth, nose, or hair should be avoided. Likewise, coughing and sneezing over foods are forbidden. Tissues or handkerchiefs should be used to prevent contamination.
4. Tasting food with fingers and utensils used during preparation is not advised, even if the cooking temperature is very hot.
5. Buy fresh foods on the day of consumption when possible, or use before the expiry date (if indicated).
6. Do not buy foods with any of the danger signs
7. Frozen food should be thawed in a refrigerator, not put in warm water or left out to thaw.
8. Store foods at the right temperature and covered.
9. Eat meals as soon as possible after preparation.
10. Use clean covered containers for fetching water.
11. Use a safe water supply, or else boil all water before use.
12. Wash hands with soap and water before food preparation, before eating meals, and after touching animals, dirty areas, or soil or after visiting the bathroom.
13. Keep food covered.
14. Cook food thoroughly or to the correct internal temperature.
15. Wash all food preparation and eating utensils thoroughly with water and soap before use.
16. Wash all fruit and vegetables before peeling or eating.
17. Do not cough, spit, or touch the body during food preparation.
18. Keep rubbish bins closed at all times.
19. Keep animals away from food preparation areas.

Self-assessment 1.1 0

1. Describe at least 5 routes of contamination of foods
2. Identify the general measures for preventing food spoilage?

1.11. Food preservation and storage

Learning activity 1.11

Observe the pictures below:



A B

1. What do pictures A and B communicate to you?
2. What do you expect to learn from this lesson?

1.11.1. Food preservation

Food preservation refers to the different techniques that are applied to food to prevent it from spoiling. The science behind food preservation involves either: (1) the destruction of micro-organisms responsible for causing food spoilage; (2) reducing/eliminating the water (moisture) content from food; and (3) altering the temperature and other conditions that favor the growth of food microorganisms, and thereby retarding microbial growth and replication (thus delaying food spoilage). Simple household **food preservation** techniques are the following:

a. Drying

A number of foods (fruits, vegetables, tubers-cassava, and potatoes) which cannot be stored for long in their fresh state without spoiling can be preserved by drying. Before drying, there should be enough sunshine and foods should be sliced in small pieces for them to dry faster. Dried fruits can be eaten in their dry state (e.g. dried jackfruit), vegetables and potatoes need to be cooked by boiling in water while dried cassava can be ground into flour and used later.

b. Smoking

Smoking meat and fish is a highly recommended method for prolonging their storage life. The fish is first cooked over a high fire and then smoke-dried in one to five days (and nights) over a low fire. Fresh-dried fish keeps for up to a week, while hard-dried fish (keeping fish in salt for several weeks) keeps for several months.

c. Salting

Salting is a simple food preservation method that can be used to prolong the shelf life of food for a few days. When added to foods, salt takes out moisture and retards microbial growth and replication.

d. Boiling

Boiling of foods kills food microbes. Perishable foods can be boiled, cooled and kept in clean containers and then used within a day.

1.11.2. Food storage

Storing food in the right way can be a great help in ensuring a household's food security. Food storage broadly refers to the different means through which food can be kept for longer periods without the food spoiling. The shelf life of a food is the length of time a food remains safe and fit for human consumption. It is essential to store food properly to ensure the following: food remains in good condition for as long as possible. Food is protected from flies, dust and other organisms that can spoil and/or contaminate food. Food is protected from organisms like insects and rats that eat and spoil food.

a. Category of foods

Foods should be stored differently on the basis of how fast they will spoil. Foods can be categorized into 3 groups:

- **Perishable foods** (e.g., eggs, milk, and cream, fresh meat and raw fish) have the shortest shelf life and must be used within a few days. These should be stored in a clean cool place. In the absence of refrigerators, such foods can be placed in clean containers, saucepans or pots. The containers can then be placed in a basin of cold water covered with a clean piece of cloth. In all circumstances, milk and meat should be consumed within 2 days.
- **Semi-perishable foods** (e.g., bread, cakes, grain, fresh fruit and vegetables): Breads and cakes should be stored in a bread bin or tin. Fruit and vegetables may be stored in a rack or basket. When put in storage, care should always be taken to remove and discard the particular foods that start showing signs of spoilage so as to avoid cross-contamination.
- **Non-perishable foods:** e.g., dry, bottled and tinned foods can be stored in a cupboard on their own or in airtight containers.

The recommended storage conditions for foods often vary; the variations even differ for the same foods depending on the freshness or dryness of the particular food. The following are the further food categories and their storage methods:

b. Storage of cereals, bread, flour, and rice:

Bread needs to be stored in its original package at room temperature. It should be used within 5 to 7 days or else it will grow moulds (a sign of spoilage). Cereals - depending on the quantities and level of dryness - may be stored at room temperature in tightly closed containers to keep out moisture and insects. Properly dried cereals packaged in sacs can be stacked on racks in a dedicated food store. Due attention should be taken to keep out rats that normally feed on stored food. Grain raw rice can be stored in closed containers at room temperature and used within one year. Once cooked, rice should be eaten immediately in the absence of refrigeration.

c. Storing fresh vegetables:

Proper storage of fresh vegetables helps to maintain their quality and retain nutrient value. Most fresh vegetables need to be stored under low temperatures in areas which are neither humid nor damp. If available, fresh vegetables can be stored in a clay pot fridge.

d. Storing fresh fruits:

All fresh fruits generally need to be stored in a cool area, preferably in a clay pot fridge. Fruits have a tendency to either be contaminated by other foods and or to absorb odors from other foods. They therefore need to be kept separately.

e. Storing milk and milk products:

Milk is a highly perishable food and yet very nutritious. To prolong its shelf life, milk should never be left at room temperature for a long time as it spoils quickly. Care must be taken to keep milk in clean covered containers that should be left to stand in a cool place. Unrefrigerated milk should be used within a day.

f. Storing meat and fish:

Meat (including poultry), fish, eggs and milk are the best sources of proteins in the human diet. Given their high protein and moisture content, these products are highly perishable. It is for this reason that these products will spoil faster than others - however well prepared and stored. One big contributor to the faster spoilage of fresh cuts of meat is the fact that these usually contain spoilage bacteria on the surface that can grow quickly, producing slime and causing spoilage after a few days. Meat should be prepared and eaten within 24 hours of purchase/slaughter.

Thinly cut pieces of meat are more susceptible to spoilage given the larger surface area for bacterial action. Meat and meat products should be used within a few days. If the meat cannot be used within a day, it is advisable to dry, smoke or salt it before storing it.

Like meat, fresh fish should be eaten immediately. Never store fish in water as this leads to loss of nutrients from the fish. In order to store fish for longer, it should be smoked.

g. Storing Root Tubers (Cassava, Sweet Potatoes):

Most root tubers may not be stored well for long after harvest; however, root tubers keep longer than other vegetables, fruits, meat, milk, etc. When tubers will not be prepared within a few days, care should be taken to avoid bruising them.

Cassava tubers can also be piled into plenty and watered daily to keep them fresh or coated with a paste of mud to preserve their freshness. They can keep for about 4-7 days.

Un-bruised sweet potatoes can be kept in a cool, dry place for up to 4-7 days. Care should be taken to remove any developing buds.

Self-assessment 1.11

1. Describe 4 simple household food preservation techniques
2. Explain the storage methods of the following food categories:(a) Storage of cereals, bread, flour, and rice; (b) Storing fresh vegetables (c) Storing fresh fruits (d) Storing milk and milk products (e) Storing meat and fish (f) Storing Root Tubers (Cassava, Sweet Potatoes).

1.12. Food habits

Learning activity 1.12

Observe the pictures below:



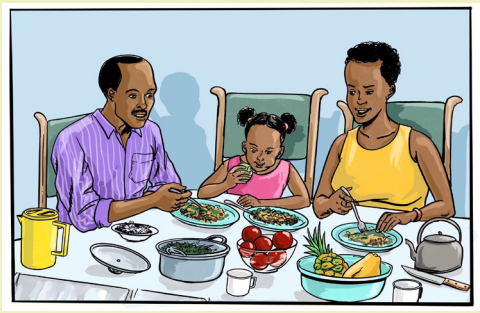
A



B



C



D

1. Describe the above-mentioned pictures A, B, C, and D
2. What are the differences between Pictures A and C; pictures B and D.
3. What do you think is the lesson of today?

As humans need to fit into society, it follows naturally that people often adopt a dietary practice to demonstrate a sense of belonging. For example, people of the African diaspora may choose to eat African foods on certain occasions or at parties as an expression of ethnic identity. Food can be linked to status, and this is plainly seen when people's dietary habits change as they move up the socio-economic hierarchy. They tend to go beyond mere consumption of basic essential items for survival to the purchase and intake of more expensive and indeed unusual forms of diet that are prestigious and can adequately "match" their status. Foods that are considered within their own culture as "food for the poor" are consciously excluded from the daily diet as these could "taint" their achieved social position. In general, eating with particular people connotes social equality with those people – many societies regulate who can dine together as a means of establishing class. Moreover, a gendered dimension is seen in some cultures where women and children eat apart from men.

1.12.1. Conservatism of Cuisine

Another aspect of the culture-food interaction is the concept of "conservatism of cuisine." Although what people eat is based in part on what has traditionally been available to them, food habits are also culturally defined. Thus, some food items, although edible and nutritious, remain taboo among certain population groups. In essence, what determines consumption of a particular food is not only its availability (and our ability to purchase it) but, importantly, its cultural acceptability.

Food preferences, while sometimes purely personal, are strongly determined by culture and tradition: what is considered acceptable as food is dictated to a large extent by cultural norms. This explains why people are often reluctant to try foods that are unfamiliar to them and why they tend to be conservative in their choice of cuisine.

1.12.2. Food Taboos

A food taboo refers to the act of abstaining from certain foods by reason of culture or religion. Food taboos dictate what may or may not be eaten, and by whom, at what periods certain foods may or may not be eaten, and which foods can or cannot be eaten together. Cultural guidelines may also exist regarding how a particular crop is to be harvested or how a certain type of animal is to be slaughtered, cooked, and served. For example, in most Western cultures, the idea of eating dog or horse meat is unacceptable, as is the thought of eating insects, which are considered a delicacy in some cultures.

Food taboos can also be tied to the reproductive cycle. Pregnant women, for example, may be allowed to eat certain foods but not others. Cultural values and beliefs can also affect infant feeding practices, including the practice of breast-feeding, in ways that may have either a positive or negative impact on a child's nutritional status. For example, in some cultures, mothers are told that a child with diarrhoea should abstain from food in order to "cleanse" the belly. Another widely held belief in some cultures is that colostrum is "dirty" and should be discarded, and a baby should therefore not be suckled until the "white milk" appears.

1.12.3. Etiquette

Proper etiquette for serving and eating food also shows great variation between different cultures. In many cultures, only the right hand may be used for eating, because the other hand (the left) is, culturally, not suitable, as it is designated for sanitation purposes. While meals must be eaten silently in some cultures, in others mealtimes are looked forward to as a period for family discussion and interaction. In considering all these possibilities, it should be accepted that there are no absolute right or wrong food habits, as conclusions can only be made within the perspective of one's own culture – provided that the food habits in question are of nutritional benefit to the consumers.

Self-assessment 1.12

1. What does a food taboo refer to?
2. Give 2 examples of food etiquette

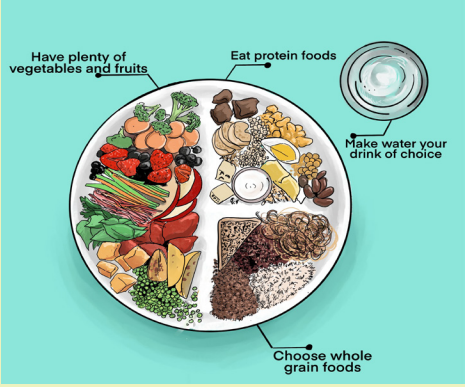
1.13. Factors affecting the choice of food

Learning activity 1.13

Observe the following pictures and answer the questions mentioned below



A



B

1. What do pictures A and B communicate to you?
2. How would you organize your meal plate in order to be healthy?
3. Use library books of nursing nutrition or internet and write short notes on the physical/environmental, physiological, social, economic, psychological, religious and cultural factors influencing food choices

PHYSICAL FACTORS	PHYSIOLOGIC FACTORS
Available food supply, food technology, geography, agriculture, and distribution, sanitation and housing, season and climate, season and climate, storage and cooking facilities	Allergies, disability, health and disease, status, heredity, nutrient and energy needs, therapeutic diets.
SOCIAL AND ECONOMIC FACTORS	**PSYCHOLOGIC FACTORS**
Advertising and marketing, culture, general and nutrition education, income, political and economic policies, religion and social class, social problems, poverty, alcoholism, and drug abuse	Habits, preferences, emotions, cravings, personal food acceptance, positive or negative experiences and associations.

Why do people eat what they eat? Food is necessary to sustain life and health, but people eat certain foods for many reasons other than good health and nutrition, although these are important factors. Eating behaviors develop from cultural, societal, and psychological patterns. These patterns, reflecting food habits that have been transmitted from preceding generations, are the heritage of any given ethnic group. They may be influenced by interactions with other groups, so that some intermingling of patterns is inevitable, but modifications are worked into the total structure over long periods of time and are acceptable only if they fit the existing customs.

Food patterns reflect a people's social organization, including their economy, religion, beliefs about the health properties of foods, and attitudes about family. Great emotional significance is attached to the consumption of certain foods.

1.13.1.Biological food needs

The biological food needs of a person throughout the life cycle have one requirement. The food consumed must provide essential chemical substances – nutrients which the body can digest, absorb, and metabolize. To maintain life and health, the nutrients must reach the cells.

Adequate nutrient intake depends on many factors, including age, sex, activity, size, and individual variations. The amounts of required nutrients may vary, but the types and kinds of nutrients established as being essential to life and health will remain the same throughout life. Research may add other, as yet unrecognized, essentials as scientific investigation progresses.

1.13.2. Cultural development of food habits

Each particular society that identifies itself with a common denominator (e.g., ethnicity, religion, geographic location, and lifestyle) has its own unique cultural food pattern.

Culture involves much more than the major and historic aspects of a person's communal life (e.g., language, religion, politics, location). It also develops from all of the habits of everyday living and family relationships, such as preparing and serving food. In a gradual process of conscious and unconscious learning, cultural values, attitudes, customs, and practices become a deep part of individual lives. Although part of this heritage may be revised or rejected as adults, people are ultimately responsible for shaping their own lives and passing traditions on to the subsequent generations as they see fit.

Food habits are among the oldest and most deeply rooted aspects of a culture. An individual's cultural background largely determines what is eaten as well as when and how it is eaten. All types of customs, whether rational or irrational or beneficial or injurious, are found in every part of the world. Many foods take on symbolic meanings related to major life events (e.g., birth, death, weddings). From ancient times, ceremonies and religious rites involving food have surrounded certain events and seasons. Food gathering, preparing, and serving have followed specific customs, many of which remain intact today.

Many different cultural food patterns are part of family and community life. These patterns have contributed special dishes or modes of cooking to people eating habits. Older members of the family use traditional foods more regularly, with younger members of the family using them mainly on special occasions or holidays.

Nevertheless, traditional foods have strong meanings and bind families and cultural communities in close fellowship. Individual tastes and geographic patterns will vary, but general food patterns are connected with culture and have a strong influence on how people eat.

Assumptions about dietary patterns cannot be made, but knowledge of the variety of unique traditional foods provides a rudimentary understanding of the range of possible food choices. Such an understanding of various cultural food patterns is valuable when providing dietary guidance as a health care professional.

1.13.3. Religious Aspects

Food plays different, important roles in many religious faiths and practices. These roles are usually rigid and tenaciously held by the adherents of the faiths. Then again, these roles may vary within a faith or philosophy. For instance, most Buddhists are vegetarians so as to avoid killing animals. Some Buddhists avoid meat and dairy products, while others only avoid beef.

Many Hindus are vegetarian but this is not obligatory. Muslims follow a list of foods that are allowed (halal, Arabic for "permitted" or "lawful") and those that are prohibited (haram), such as pork and alcohol.

Christian practices vary by denomination and sect. While Catholic and Orthodox Christians observe several feast and fast days during the year, most Protestants observe only Easter and Christmas as feast days and don't follow ritualized fasting. Some Christians do not drink alcohol, including many members of various Protestant churches. Seventh Day Adventists avoid both caffeinated and alcoholic beverages, and they are vegetarians.

1.13.4. Social effects

In any society, social groups are largely formed by factors such as economic status, education, residence, occupation, and family. Accordingly, values and practices differ among groups. Subgroups also develop on the basis of region, religion, age, sex, social class, health issues, special interests, ethnic backgrounds, politics, and other common traits such as group affiliations.

Food habits, like any other form of human behavior, are gradually established with influences from every direction.

Food is a symbol of acceptance, warmth, and friendliness in social relationships. People tend to accept food or food advice readily from friends, acquaintances, and people who they view as trusted authorities. This guidance is especially strong in family relationships.

Food habits that are closely associated with family sentiments often stay with people throughout their lives. During adulthood, certain foods may even trigger a flood of childhood memories and are valued for reasons apart from any nutritional importance.

1.13.5. Psychological influences

Understanding dietary patterns begins with the recognition of the psychological influences that are involved. Many of these psychological factors are rooted in childhood experiences. For example, when a child is hurt or disappointed, parents may offer a cookie or a piece of chocolate to distract the child. Then, when adults feel hurt, they may turn to similar comfort foods to help them cope. Certain foods, especially sweets and other pleasurable flavors, stimulate “feel good” body chemicals in the brain called endorphins that give a mild “high” that may actually help ease pain.

1.13.6.Food and psychosocial development

From infancy to old age, emotional maturity grows along with physical development. At each stage of human growth, food habits are part of both physical and psychosocial development. For example, a 2-year-old toddler who is taking his first steps toward eventual independence from his parents may learn to control his parents through food by refusing to eat at meal times or otherwise being a demanding eater. Psychologists believe that food neo-phobia may also be involved. This normal developmental trait may be an instinct from the evolutionary past that protected children from eating harmful foods when they were just becoming independent from their mothers.

1.13.7. Marketing and environmental Influences

Food habits are also manipulated by television, radio, magazines, and other media messages. Influences from peers, availability of convenience items, marketing at the local grocery store, and many other factors of persuasion may sway the decision-making process for food choices throughout life. Advertising strategies that make use of brand mascots and cartoon media characters on food packages greatly impact children's eating patterns by increasing the preference for products. Marketing trends and media also influence what a culture views as beautiful and such provocations may dictate food choices, meal composition, lifestyle, and body-image expectations.

1.13.8.Economic Influences

Economics is a very strong factor in the determination of food consumption. The costs of producing, transporting, and distributing food determine how much and what types of food are available. Lack of money affects not only the prices that people can pay for food but also the kinds of storage facilities they can afford to have within the household. Poor people often must buy cheap foods in small quantities and purchase items that do not require special storage facilities such as freezers or refrigerators.

The cost of transportation may prohibit going to a large market, where volume purchases permit cheaper prices. Poverty is sometimes classified as a subculture in our society, and different attitudes and adaptations about foods emerge from this class than those found in the middle or upper classes. Nurses should have an extensive knowledge of these differences.

Self-evaluation 1.13

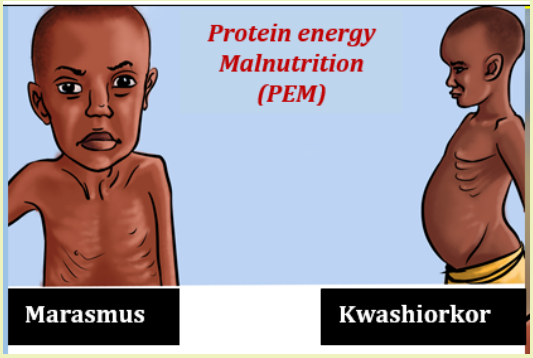
Analyze your eating patterns. Be as objective as possible. Answer the following questions about your behaviors.

1. What are the determining factors in the way you eat?
2. What are the determining factors in the amount you eat?
3. What determines your likes and dislikes?

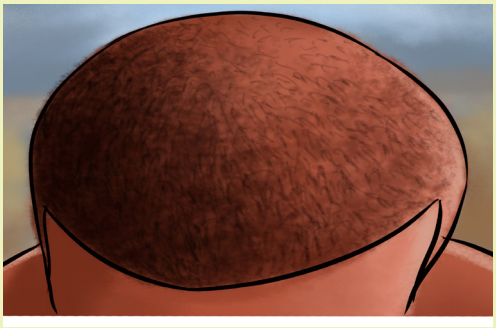
1.14. Protein-energy malnutrition

Learning activity 1.14

See the following images and attempt the questions that follows



A



B

1. Differentiate the persons in picture A and B based on their physical characteristics?
2. Describe the hair of the person in Picture B
3. What do you expect to learn from this lesson?

1.14.1. Introduction

An appropriately nourished individual is well equipped to resist disease, recover from illness, reach an optimal fitness level and enjoy a better quality of life.

Malnutrition is a common problem worldwide. Malnutrition encompasses the inadequacy of any nutrient in the diet. It includes **under–nutrition** (in people with a limited or restricted food intake) and **over-nutrition** associated with excessive food intake.

The consequences of malnutrition include an increased risk of diseases and death, poor productivity of the malnourished individuals as well as poor academic performance and loss of attendance of children from school. Other consequences are poverty perpetuation (a vicious circle) and an intergenerational cycle of malnutrition. Death from protein-energy malnutrition and other nutritional deficiencies occurs within 60 to 70 days of total starvation in normal weight adults, but over a shorter period of time in those who are already malnourished. Depletion of nutrient stores also occurs more rapidly in the ‘metabolically stressed patient’.

1.14.2.Protein-energy malnutrition

Protein-energy malnutrition (PEM) is the inadequate intake of protein, mainly seen in developing countries. Within a hospital setting in developed countries, protein energy malnutrition may be due to poor nutritional intake in alcohol misusers or in those suffering from anorexia nervosa. It may be seen in some conditions, because of an inability either to adequately absorb nutrients, such as with Coeliac disease, or to utilize that which is absorbed, such as in cirrhosis. Protein loss can occur following excessive losses of protein in the urine, such as in nephritic syndrome or other renal disorders, and in acute surgical trauma or burns, owing to catabolism. Finally, increased utilization and therefore protein intake requirements occur in fevers and hyperthyroidism.

Malnutrition can occur in the hospital setting, particularly in older patients who are in hospital for a number of weeks, owing to poor attention to their nutritional needs, for example lack of nutrition screening, food left out of the patient's reach, not providing appropriate assistance to eat or drink etc.

Kwashiorkor and Marasmus are serious diseases of Protein Energy Malnutrition (PEM) which develop in young children between 1-3 years of age. They are due to (a) an inadequate diet, that is a diet lacking in proteins and calories and (b) Infections such as diarrhea, measles, bronchitis which lead the child into malnutrition.

1.14.3. Kwashiorkor

Kwashiorkor is a form of malnutrition caused by protein deficiency in the diet, typically affecting young children.

a. Causes of Kwashiorkor

The main cause of kwashiorkor is not eating enough protein or other essential vitamins and minerals.

b. Sign and symptoms

The Signs and symptoms of kwashiorkor are: change in skin and hair color (to a rust color) and texture, fatigue, diarrhea, loss of muscle mass, failure to grow or gain weight, edema (swelling) of the ankles, feet, and belly; damaged immune system, which can lead to more frequent and severe infections; irritability; flaky rash and shock.

c. Prevention and treatment

Prevention, is mainly done through health education of the parents about nutrition and breastfeeding; exclusive breastfeeding for the first 6 month is the best; children should breastfeed up to at least 2 years and the food is introduced slowly from 6 months starting from the soft ones; Immunization, family planning and early treatment of any disease.

Curative:

a) Hospitalization.

b) Rehydration: by oral fluids & solution to maintain electrolytes. In severe cases blood transfusion (10ml/kg) may be prescribed.

d. Complications

Kwashiorkor results in: muscle wasting, a low serum albumin resulting in peripheral edema (which may make the muscle wasting less obvious) and fatty liver with hepatomegaly. There is also a reduction in immunity and infections may also be present. It is usually seen in children and so there is also growth retardation. All these features are reversible with an adequate protein intake:

1. Secondary immune deficiency.
2. Sever water & electrolytes disturbances.
3. Hypoglycemia.
4. Hypothermia.
5. Heart failure: due to severe anemia, septicemia or due to over hydration during treatment.
6. Bleeding tendency: due to low vit. K.
7. Blindness due to sever vit.A deficiency.
8. Mental retardation: if Kwashiorkor occurs before 6 months of life.

1.14.4.Marasmus

Definition

It is due to both protein and energy deficiencies; it can occur in anyone with severe malnutrition but usually occurs in children.

Clinical manifestations: it is characterized by the classic features of starvation, including: growth reduction, absence of body fat (loss of sub-cutaneous fat, and marked wasting of muscles (the child is reduced to “skin and bones”).

Treatment:

1) **Preventive:** as mentioned in Kwashiorkor.

2) **Curative:**

- Treatment of causes. b) Treatment of complications.
- Diet: Increase calories & protein (of high biological value).
- Increase vitamins & minerals. Vegetables & fruit.
- Parental fluid & blood transfusion.
- Antibiotics & anti diarrhea drugs.

Complications:

- Hypothermia.
- Hypoglycemia.
- Infection.
- Gastro enteritis & dehydration.
- Edema: Marasmic Kwashiorkor.
- Bleeding tendency
- Congestive heart failure.

1.14.5.Marasmus Kwashiorkor

Definition: This form of edematous Protein Energy Malnutrition (PEM), combines clinical characteristic of Kwashiorkor and Marasmus.

Clinical signs

The main features are the edema of Kwashiorkor, with or without its skin lesions, and muscle wasting, loss of subcutaneous fat of Marasmus. Biological features of both Marasmus and kwashiorkor are seen, but alterations of severe portion deficiency usually predominate.

Kwashiorkor and marasmus affect not only the physical growth but also mental development of the child. They can also cause death.

Protein Energy Malnutrition need to be prevented by means of:

- Proper antenatal care of mothers, because a healthy mother give birth to a healthy baby.
- Promotion of breast feeding.
- Proper weaning of the child.
- The child should be given nutrition supplement starting around the age 6 months as breast milk alone is not sufficient to sustain the growth of the child. Nutritional supplements can be easily prepared at home using low-cost foods that are locally available. They are foods such as cereals, millets, ground nuts and sugar. Proper use of these supplements helps in preventing malnutrition during the weaning period.
- Nutrition education of the mother.
- Immunization of the child against child hood diseases.
- Food hygiene practices to prevent infections.
- Economic development to decrease poverty.
- Improved environmental sanitation.
- Nutrition and health education.
- Family planning.

Main three lines in treatment of Protein Energy Malnutrition (PEM):

1) Rehydration 2) Medication 3) Provide of adequate nutrition.

Nursing care plan to PEM:

Nursing diagnosis:

1. Imbalanced nutrition less then body requirements related to lack of parents knowledge, economic factors, and inability to absorb nutrition or inadequate food intake.
2. Deficit fluid volume related to diarrhea & vomiting.
3. Subnormal body temperature caused by loss of body heat related to loss subcutaneous fats.
4. Risk for infection related to malnutrition, decrease immunoglobulin.

The usual approach to treatment

1. First phase is the stabilization phase (24-48 Hours): correction of dehydration and antibiotic therapy to control infection
2. Second phase (an additional week to 10 days): continued antibiotic therapy And initial diet administration: to provide maintenance requirements of energy and protein (75 cal/ kg/24hrs and 1 gm /kg /24hrs). Lactose free milk may be initially given, followed by humanized milk. Correct the electrolyte & vitamin deficiency
3. Third phase: The child's appetite is returning and the infections are usually under control. A diet provide up to 150 kcal/ kg/24hrs and 4 gm /kg /24hrs of protein. Iron therapy. Blood transfusion is required in case of anemia, serious infection and bleeding tendency (15- 20 ml/kg).

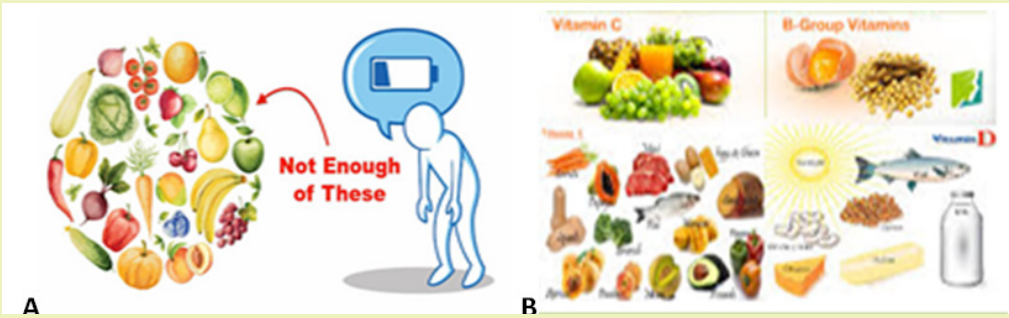
Self-assessment 1.14

1. Differentiate Kwashiorkor from Marasmus in terms of their clinical features, prevention and nursing management

1.15. Specific vitamin deficiencies

Learning activity 1.15

Observe the image below



A B

1. Identify the types of foods shown in the picture A and B
2. Characterize the physical appearance of the person in picture A
3. What do you think is the lesson of today?

Vitamins and minerals are essential nutrients in human body because they act in concert, they perform hundreds of roles in the body. They help shore up bones, heal wounds, and bolster your immune system. They also convert food into energy, and repair cellular damage. Their deficiencies affect the whole-body function. Their main food sources include vegetables and fruits, food from animals (eggs, meat, milk, etc).

1.15.1.Vitamin A deficient

The absorption of vitamin A is related to fat absorption in the gut, and requires protein for synthesis. Therefore, a deficiency of fat, protein or a gut-related illness can result in vitamin A deficiency. Deficiency results in growth reduction and visual problems. Xerophthalmia may occur in vitamin A deficiency and is characterized by conjunctivitis, abnormal and severe dryness of the surface of the cornea and conjunctiva.

Bitot's spots (white, soft deposits on the conjunctiva) and night blindness may also occur. Where a deficiency exists, there may be a reduction in immunity.

In a previously adequately nourished individual, there are usually enough stores of vitamin A within the liver to last approximately nine months, so it is not unusual for patients to present late in chronic illness.

Good dietary sources of vitamin A (and beta-carotene, a precursor to vitamin A) include: carrots, oily fish, liver and liver products. They also include fortified margarine and fat spreads, fish liver oils, dairy products (milk, cheese, cream and butter), egg yolks, peaches, apricots and mangoes, tomatoes and red peppers and dark-green leafy vegetables (such as spinach).

1.15.2.Vitamin B1 (thiamine) deficiency

Vitamin B1 deficiency may be seen in individuals who abuse alcohol, although it is present in many foodstuffs, vitamin B1 is not present in alcohol. In addition, the body does not store vitamin B1, as it is a water-soluble vitamin. Thiamine is mainly required during the metabolism of carbohydrates, fat and alcohol. Diets high in carbohydrate require more thiamine than diets high in fat. The deficiency is commonly known as beriberi. '**Dry beriberi**' refers to the development of neurological problems, such as Wernicke's encephalopathy (ataxia, confusion, nystagmus and sixth cranial nerve palsy), peripheral and motor neuropathy. '**Wet beriberi'** refers to the development of neurological problems with additional heart failure. The problems are reversible if sufficient thiamine is given, intravenously if necessary.

Sources of thiamine: Thiamine is not evenly distributed in cereal grains – most of it is present in the outer 'germ' layer. Other good sources include: yeast and yeast extract, wholegrain cereal foods, pork, nuts and pulses.

Many breakfast cereals are fortified with thiamine.

1.15.3.Vitamin B2 (riboflavin)

Vitamin B2 is water-soluble and is found in small amounts in many foods. However, levels rapidly decrease under serious illness or with the intake of some drugs, for example amitriptyline, imipramine, chlorpromazine or oral contraceptives. A deficiency of riboflavin results in lesions on the muco-cutaneous surfaces of the mouth (angular stomatitis, atrophic lingual papillae and magenta tongue), cracked, bleeding lips and glossitis. Itchy perineum and hair loss may be seen. There may also be neurological sequelae with photophobia and ataxia.

Riboflavin deficiency is often accompanied by iron deficiency – possibly as a result of impaired absorption.

Good dietary sources of riboflavin include: yeast and yeast extract, liver and offal meats, green, leafy vegetables, eggs, milk and dairy products and cereals and cereal products.

1.15.4.Vitamin C (ascorbic acid)

Vitamin C is water-soluble and easily destroyed in cooking. It is biochemically active in collagen synthesis, iron absorption and in immunologic function. Therefore, not

surprisingly, a deficiency in vitamin C, better known as 'scurvy', is characterized by swollen, bleeding gums, wiry hair, anaemia and a predisposition to infections, and easy bruising. People with poor diets devoid of fresh food, and those with increased vitamin C requirements, such as cigarette smokers or post-operative patients, are likely to have suboptimal levels. Owing to its role in collagen synthesis, adequate vitamin C is essential for wound healing.

Good dietary sources of vitamin C include:

- Fruits and fruit juices (particularly citrus fruits, strawberries, kiwi fruit, berries, currants and guava)
- Some green vegetables (such as green peppers, broccoli, cabbage and spring greens); however, significant losses can occur during storage and cooking.

Self-assessment 1.15

1. Discuss the physical characteristics of the people with the following vitamin deficiency: Vitamin A, B1 (thiamine), B2 (riboflavin) and C
2. What are the good dietary sources of the following vitamins: Vitamin A, B1 (thiamine), B2 (riboflavin) and C

1.16. Specific mineral deficiencies

Learning activity 1.16

See the picture A and B mentioned below:



A



B

1. Find out the types of foods displayed in picture A
2. Characterize the health status of the lady in picture B
3. What do you think may be the consequences of lacking the foods in picture A in human body organism?

1.16.1. Folic acid

Folic acid is the parent molecule of a large number of derivatives collectively known as 'folates'. The role of folic acid is also known in preventing neural tube defects in early pregnancy. In deficiency states, it causes megaloblastic anaemia, atrophic tongue and growth retardation.

Deficiency is most likely to occur as a result of:

- Mal absorption (e.g., in coeliac disease): The use of certain drugs interferes with folic acid metabolism (notably methotrexate to treat rheumatoid arthritis and anticonvulsants used in the treatment of epilepsy).
- Cell proliferation: Some disease states can cause an increase in cell proliferation (e.g., leukaemia).

Good dietary sources of folates include: liver, green vegetables, yeast extract, pulses and some fruits (oranges and orange juice).

1.16.2.Zinc

A deficiency in zinc may occur in patients who require long-term administration of parenteral or enteral feeding, if they have high requirements, with only standard amounts being provided. There are very small body stores of zinc; so, problems can arise if it is not present within the diet on a regular basis. Conditions which predispose people to zinc deficiency are related to:

- Reduced intake (perhaps associated with an eating disorder)
- Reduced absorption/bioavailability (owing to an inhibitor, such as a high-phytate diet)
- Increased losses (such as in diarrhoea or excessive vomiting)
- Increased requirement associated with growth (also in pregnancy/lactation) and are Secondary to conditions such as alcoholism.

Deficiency results in poor hair quality and hair loss. Changes in the skin result in crusty lesions around the nose and mouth, followed by fingers, toes and the perineal area. The patient may go on to develop diarrhoea, mental confusion and depression. There is also an increased susceptibility to infections, as zinc has a critical role in immune-competence.

Zinc deficiency in childhood results in stunted growth. Zinc is also thought to play a role in taste acuity, and a loss of taste (hypogeusia) may result from zinc deficiency.

Zinc has a critical role in protein synthesis and in structural proteins; hence, a deficiency may impair wound healing. It has been postulated that zinc is related to appetite, as it is not unusual to have a loss of appetite with subclinical zinc deficiency.

Good dietary sources of zinc include: red meat, fish and shellfish, milk and milk products, poultry, and eggs. Other sources of zinc include bread and cereal products, green, leafy vegetables and pulses, although these all have a lower bioavailability.

1.16.3.Iron

Iron is an essential component of haemoglobin and myoglobin, with its major function being that of carrying oxygen. Many enzymes contain or require iron, and it is required for many metabolic processes. In contrast to other minerals, no mechanism exists in the body to excrete iron, therefore body levels of iron are regulated by absorption. Iron deficiency results in a reduced ability to transport oxygen around the body. This can have many harmful effects on cardiovascular and respiratory systems, brain and muscle function, and wound healing.

Both a deficiency and excess of iron are associated with an increased susceptibility to infection. Iron deficiency, with or without anemia, results in a wide range of defects in immune function.

Good dietary sources of iron include:

- Red meat, liver and offal, poultry and fish (contain smaller amounts)
- Cereal products and fortified breakfast cereals; these can contribute significant amounts of non haem iron, but this is less well absorbed than iron from meat products (haem iron).
- Other good sources of non-haem iron include green leafy vegetables, dried fruit, pulses, nuts and seeds.

Having a good source of vitamin C (for example fruit or fruit juice) with foods that contain non haem iron can enhance the absorption of iron. Tannins and phytates can inhibit the absorption of non-haem iron.

Iron and zinc compete for absorption, which is why it can be a disadvantage for people to self-supplement with either of these nutrients unless there is a proven deficiency and they are under medical supervision.

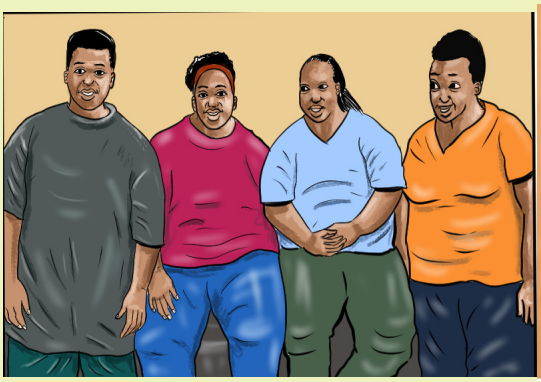
Self-assessment 1.16

1. Discuss the consequences resulting from the lack of the following minerals in human body: folic acid, zinc, and iron
2. What are the good dietary sources of (a) folic acid, (b) zinc and (c) iron

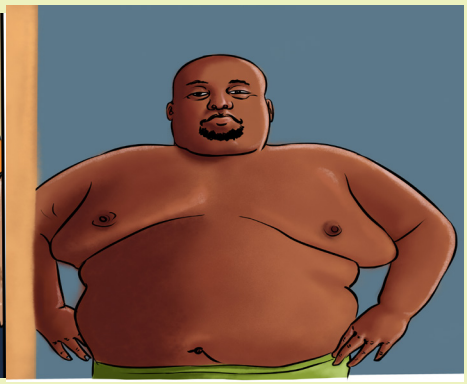
1.17. Over-nutrition conditions

Learning activity 1.17

Observe the pictures below:



A



B



C



D

1. What does each of the pictures A, B, C, and D communicate to you?
2. Identify the groups of foods included in picture A and their importance.
3. What do you expect to learn from this lesson?

Over-nutrition overview

Over-nutrition is a growing health problem globally. Obesity often coexists with under-nutrition in developing countries and is a complex condition, with serious social and psychological dimensions, affecting virtually all ages and socio-economic groups.

The reproductive risks of over-nutrition or obesity include infertility or difficulty with conception, gestational diabetes, hypertension (pregnancy-induced), premature birth, and increased rates of caesarean section, as well as a birth weight of greater than 4000 grams. Overweight and obesity are important risk factors for most of the chronic disorders. Indeed, there is a strong interrelationship between many of chronic disorders and risk factors.

Early identification by means of nutritional screening, dietary treatment, and monitoring of obese pregnant women as part of standard prenatal care may affect outcomes for the mother and infant.

Overweight is defined as having a BMI that is more than 25. It is related to an excessive body weight, not necessarily excessive body fat. Muscle, bone, fat, and water all contribute to body weight. **Obesity,** on the other hand, is defined as having a BMI ≥30, a condition characterized by excess accumulation of body fat.

Overweight and obesity are important risk factors for most of the chronic disorders. Indeed, there is a strong interrelationship between many of chronic disorders and risk factors.

1.17.1.The Causes of Obesity

Obesity is a completely unnatural human condition. Dozens of studies from around the world have convincingly shown that obesity is absent when people eat the traditional diet for their region. The disorder appeared when people began to adopt a more modern, Westernized lifestyle.

A major factor leading to obesity is **reduced physical activity.** This occurs as a result of the combination of urbanization and labor-saving machinery. A few decades ago, the majority of people in developing countries lived in villages and engaged in agricultural work or other occupations that require much physical labor. Over recent decades, many tens of millions have relocated to cities. Most jobs today require far less expenditure of energy. At the same time, thanks to the availability of cars and buses, people today typically walk much less than people used to.

Another major cause of obesity is the widespread **availability of highly palatable, energy-dense food** (i.e., high quantity of kcal per gram). A large amount of accumulated evidence demonstrates how such food leads to excess intake of food energy – in other words, over-nutrition. Such foods have four key features: a high fat content, high refined sugar content, low fiber content, and a high energy density.

These features of the modern, Western diet should not be viewed singly: they act synergistically.

Let us start with dietary fat. The majority of human studies indicate that **a high-fat diet** induces excessive energy intake and hence weight gain. The next heavy factor

in the obesity epidemic is sugar. In particular, **sugar-sweetened beverages** have a similar effect on energy balance as does dietary fat: consuming these drinks leads to spontaneous overconsumption of food. With respect to weight control fruit juices, as far as is known, have no advantage over soft drinks.

Another important dietary component with respect to obesity is **fibre.** Fibre has the opposite action in the body of sugar and fat; the presence of fibre in foods tends to induce satiation (a feeling of fullness), thereby bringing about a halt to eating. This can be illustrated by comparing a slice of whole wheat bread, a slice of white bread, and 170 mL of cola drink (about half a tin). They each have 170 kcal. Compared with whole wheat bread, the white bread has only half as much fiber, and cola is lacking of fiber altogether. This difference is clear when these foods are eaten: white bread can be eaten more quickly than whole wheat bread and produces less satiation. The cola can be consumed even more quickly and produces minimal satiation.

The role of fiber in retarding the development of obesity is supported by strong epidemiologic evidence. Detailed comparisons have been made between the satiating effects of the major components of food. In general, fat has the least satiating action, next is carbohydrate, then protein, while fiber has the most.

An important factor that determines the satiating ability of a particular food is its energy density. Foods with more concentrated energy (more kcal per gram) have less satiating power (i.e., little appetite satisfaction relative to energy consumed), and they are therefore more likely to lead to overconsumption of food energy. This may be a major reason why food fat causes weight gain: because fat has more than twice as much energy per gram as either protein or carbohydrates, fat-rich foods tend to be energy dense. Conversely, foods with high water content have a low energy density and can therefore satiate the appetite before much food energy has been consumed. Many types of fruit and vegetables, such as apples, melon, carrots, and cabbage, have high water content and are therefore particularly good at satisfying the appetite.

We can summarize as follows: Doughnuts and biscuits (cookies) are a mixture of fat, sugar, and refined flour, with a minimal content of water and fiber. They are the type of food that readily causes people to overeat and become overweight. In stark contrast, no one ever became overweight by eating too many carrots or by drinking too much tomato soup!

One more factor deserves mention in a discussion of the causes of obesity is portion sizes. These have been steadily expanding for the past 40 years. For example, plates in restaurants are significantly larger now than they were a few decades ago. In the case of bottle sizes for cola drinks, these are now three or four times larger. This is potentially important because evidence shows that when people have more

food placed in front of them, they eat more. This problem appears to be additive when combined with increased energy density.

An accepted wisdom concerning obesity is that most people who try to lose weight fail, and of those that do lose weight, most regain it. By comparison, avoiding obesity in the first place is a much easier goal to accomplish.

1.17.2.Complications of Obesity

Obesity significantly increases mortality and morbidity. It is associated with a wide variety of comorbidities, including diabetes, hyperlipidemia, fatty liver disease, obstructive sleep apnea, gastro-esophageal reflux disease, vertebral disk disease, osteoarthritis, and increased risk of certain cancers. **Abdominal obesity**, part of the **metabolic syndrome,** increases the risk of coronary heart disease and type 2 diabetes. Obesity increases the risk of complications during and after surgery and the risk of complications during pregnancy, labor, and delivery. Higher body weights are associated with higher mortality from all causes. Obesity increases the risk of complications during and after surgery and the risk of complications during pregnancy, labor, and delivery. Higher body weights are associated with higher mortality from all causes.

Obesity presents psychological and social disadvantages. In a society that emphasizes thinness, obesity leads to feelings of low self-esteem, negative self-image, depression, and hopelessness Negative social consequences include stereotyping; prejudice; stigmatization; social isolation; and discrimination in social, educational, and employment settings.

1.17.3.The Treatment of Obesity

A lifestyle approach that includes nutrition therapy, physical activity, and behavior modification is the basis of comprehensive weight management. Pharmacotherapy and surgery may be used in conjunction with lifestyle interventions, based on the individual's body mass index (BMI) and the presence of comorbidities.

Attempts to lose weight (i.e., body fat) usually achieve little success. It is important that people wishing to lose weight have realistic goals. An appropriate goal is to lose between 200 and 900 grams per week, or 10% of body weight over 6 months. Setting more ambitious goals is a recipe for disappointment. Moreover, rapid weight loss increases the probabilities of later regaining the weight. Many overweight people dream of achieving a shape that requires losing 30% of their weight. When they fail to achieve this, they feel they have failed. In reality, losing 10% of body weight is a success because it results in significant improvement to long-term health, such as a decrease in blood pressure or blood cholesterol, or an improvement in ability to walk quickly.

The first step in losing weight is the **adoption of an energy-reduced diet**. An appropriate target is to cut energy intake by **500 to 1000 kcal per day.**

It is of prime importance to recognize the major causes of obesity and put these into reverse. In other words, a person should follow a healthy lifestyle that includes a diet that has a generous content of **fiber-rich foods, is moderate in fat, is low in sugar, and has a low energy density.**

Exercise is especially important. There is much evidence that achieving weight loss – and long-term avoidance of weight regain – requires around 60 or 90 minutes of exercise every day, such as walking at a brisk pace. If the intensity is greater, as in the case of jogging for example, then the time required is reduced to 30 to 45 minutes per day. One of the secrets for losing weight is to engage in high levels of physical activity (approximately 1 hour per day), eating a low-calorie, low-fat diet, **eating breakfast regularly, self-monitoring weight,** and maintaining **a consistent eating pattern** across weekdays and weekends. Moreover, weight loss maintenance may get easier over time; after individuals have successfully maintained their weight loss for 2 to 5 years, the chance of longer-term success greatly increases.

Here are additional rules that are helpful for people trying to lose weight:

1. Eat small portions.
2. Eat breakfast every day.
3. If a person wishes to have sweet-tasting beverages, then replace sugar with synthetic sweeteners.
4. Avoid buying foods that encourage overeating, and don't have the "wrong" foods easily accessible. If you can't resist chocolate, then keep chocolate out of easy reach.
5. Stay away from buffets or other locations where overeating is made easy.
6. Try to identify factors that trigger overeating. For example, many people react to stress by overeating. Reducing stress is one example of changing behavior so that overeating is avoided.
7. Buy a pedometer. These devices count the number of steps walked. An appropriate goal is 10,000 steps per day.
8. Join a group that actively supports weight loss, increased fitness, and healthful eating. This could be, for example, a commercial organization or a group of friends.
9. Eating at regular, frequent intervals may help prevent extreme hunger and reduce the risk of binge eating. Meal patterns should be individualized.
10. Measure weight frequently,
11. Watching TV for a limited period of time,
12. Letting a small weight gain become a big weight gain, and

13. Pharmacotherapy is adjunctive therapy in the treatment of obesity. Drugs are not effective in all people, and they are only effective for as long as they are used.
14. Surgery to promote weight loss therapy involves limiting the capacity of the stomach. Gastric bypass also circumvents a portion of the small intestine to cause mal absorption of calories. Both types effectively promote weight loss but are tools, not magic strategies.
15. Bariatric surgeries require lifelong changes in eating behaviors to ensure continued success. The postsurgical diet progresses from clear liquids to pureed food to a soft diet. Small, frequent meals are necessary to avoid overstretching the pouch. Sugars are avoided to decrease the risk of dumping syndrome. Nutritional deficiencies are a lifelong risk, requiring preventative supplementation.
16. Perhaps most important of all: be determined!

Self-assessment 1.17

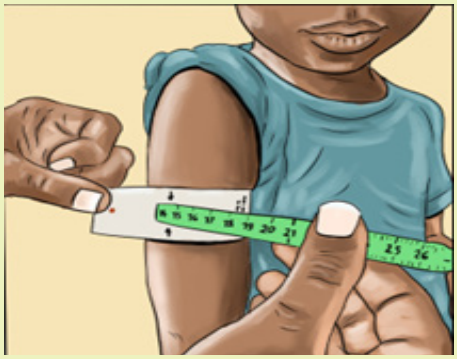
1. What are the complications that result from obesity?
2. Discuss the dietary management of obesity?

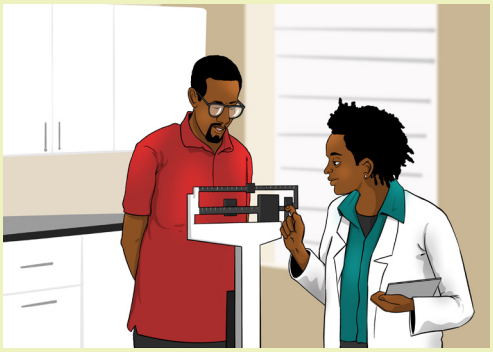
1.18. Assessment of nutritional status of a client

Learning activity 1.18

Observe the pictures below:









1. Describe the activity which is being performed by a health care provider on each of the pictures above mentioned.
2. What do you think may be the purpose of those activities?

Nutritional assessment is a systematic process used for collecting client's nutrition information, interpreting them in order to make decisions about the nature and cause of nutrition related health issues that affect the person. Nutritional assessment focus on the interpretation of anthropometric, biochemical (laboratory), clinical and dietary data to determine whether a person or groups of people are well nourished or malnourished (over-nourished or undernourished). Nutritional assessment can be done using the ABCD methods. These refer to the following:

A: Anthropometry; B. Biochemical methods; C: Clinical methods; D: Dietary methods

The type of data needed for health and diet history is subjective and involves interviews and food records. The accuracy of both approaches depends on the skill of the interviewer and the client's memory, perception, and cooperation. It is important that the interviewer learn something about the client's life and the factors that influence his or her eating habits (such as money, storage facilities, transportation, and ethnicity).

1.18.1. Anthropometric assessment

Anthropometry is the measurement of the size, weight, and proportions of the body. Common anthropometric measurements include weight, height, MUAC, head circumference, skinfold and body mass index (BMI).

a. Weight

Weighing is usually the first step in anthropometric assessment and a prerequisite for finding weight-for-height z-score (WHZ) for children and BMI for adults. Weight is strongly correlated with health status. Unintentional weight loss can mean

poor health and reduced ability to fight infection. Low pre-pregnancy weight and inadequate weight gain during pregnancy are the most significant predictors of intrauterine growth retardation and low birth weight.

b. Height

Measuring length or height requires a height board or measuring tape marked in centimeters (cm). Measure the length for children who are under 2 years of age or less than 87 cm long. Measure height for children of 2 years and older who are more than 87 cm tall and for adults.

c. The head circumference (HC)

HC is the measurement of the head along the **supra orbital ridge** (forehead) interiorly and **occipital prominence** (the prominent area on the back part of the head) posterior. It is measured to the nearest millimeter using flexible, non-stretchable measuring tape around 0.6cm wide. HC is useful in assessing chronic nutritional problems in children under two years old as the brain grows faster during the first two years of life.

d. Mid-Upper Arm Circumference (MUAC)

MUAC is the circumference of the left upper arm measured at the mid-point between the tip of the shoulder and the tip of the elbow, using a measuring or MUAC tape. MUAC measurements in millimeters (mm) are more accurate than measurements in cm. Use MUAC to measure all pregnant women and women up to 6 months postpartum. MUAC is not currently recommended for infants under 6 months and should not be used to assess nutritional status in people with edema.

e. Skinfold measurement

Skinfold measurement is a technique to estimate how much fat is on the body. It involves using a device called a caliper to lightly pinch the skin and underlying fat in several places. This quick and simple method of estimating body fat requires a high level of skill to get accurate results. The seven skin sites for skinfold measurement are the followings: triceps, chest/pectoral, midaxillary, subscapular, suprailiac, abdominal, and thigh.

f. Body Mass Index (BMI)

BMI is an anthropometric indicator based on weight to-height ratio. It is used to classify malnutrition in non-pregnant/non-postpartum adults. BMI is not an accurate indicator of nutritional status in pregnant women or adults with edema.

BMI=Weight (Kg)/Height2 (m)

Table 1.18.1 Body Mass Index ranges

BMI	Nutritional status
<18.5	Underweight
18.5–24.9	Normal weight
25.0–29.9	Overweight
30.0–39.9	Obesity
>40.0	Severely obese

1.18.2. Clinical methods

In this part the nurse will assess clinical signs and symptoms that might indicate potential specific nutrient deficiency. Special attention is given to organs such as skin, eyes, tongue, ears, mouth, hair, nails, and gums. Clinical methods of assessing nutritional status involve checking signs of deficiency at specific places on the body or asking the patient whether they have any symptoms that might suggest nutrient deficiency.

Table 1.18.2 Clinical signs and symptoms of nutritional deficiencies based on physical examination

Body system	Signs/symptoms
General	• Changes in height, weight, body mass index, waist circumference, percent weight change (underweight, overweight, obese)
Skin, hair, and mucous membranes	• Dermatitis (may suggest marasmus, deficiency of: niacin, riboflavin, zinc, biotin, essential fatty acid, vitamin A) • Pigmentation changes (may indicate: marasmus, niacin deficiency) • Pressure ulcers/delayed wound healing (may show kwashiorkor, diabetes) • Pallor (deficiency of iron, copper, folic acid, vitamin B_{12} or E)
Head	• Dyspigmentation, easy pluckability (protein), alopecia (zinc, biotin deficiency) • Delayed closure of fontanelle (pediatric under nutrition or growth retardation)

Eyes	• Night blindness, xerophthalmia, Bitot's spots, keratomalacia (vitamin A deficiency)
Mouth	• Angular stomatitis (riboflavin, iron deficiency) • Bleeding gums (vitamins C, K, riboflavin deficiency) • Cheilosis (riboflavin, niacin, vitamin B_6 deficiency) • Dental caries (fluoride deficiency) • Discoloration of teeth (fluoride toxicity)
Neck	• Hypogeusia (zinc, vitamin A deficiency) • Goitre (iodine deficiency)
Thorax	• Thoracic rosary (vitamin D deficiency)
Abdomen	• Diarrhoea (niacin, folic acid, vitamin B_{12} deficiency; marasmus) • Ascites (kwashiorkor, alcoholism)
Genital/ urinary	• Delayed puberty (marasmus) • Hypogonadism (zinc deficiency)
Extremities	• Bone ache, joint pain (vitamin C deficiency) • Oedema (thiamine and protein deficiency) • Muscle wasting and weakness (vitamin D deficiency, protein-energy undernutrition)
Nails	• Softening of bone (vitamin D, calcium, phosphorus deficiency) • Spooning (iron deficiency)
Neurologic	• Dementia, delirium, disorientation (niacin, thiamine, vitamin B_{12}, vitamin E deficiency) • Loss of reflexes, wrist drop, foot drop (thiamine deficiency) • Tetany (vitamin D, calcium, magnesium deficiency)

1.18.3. Biochemical assessment

Biochemical assessment means checking levels of nutrients in a person's blood, feces, urine or other tissues that have a relationship with the nutrient. Laboratory test results provide to health care professionals useful information about medical problems that may affect appetite or nutritional status.

Table 1.18. 3 Blood tests useful for determining nutritional status

Nutrient	Laboratory Test	Acceptable Limits
1. Carbohydrate	Plasma glucose	70–120 mg/100 ml
2. Fat	a. Serum cholesterol	140–220 mg/100 ml
	b. Serum triglycerides	60–150 mg/100 ml
3. Protein	a. Visceral serum protein	above 6.5 g/100 ml
	b. Immune functions: (Total lymphocyte count)	above 1200
4. Fat-Soluble Vitamins		
Vitamin A	a. Serum vitamin A	20–45 μg4/100 ml
	b. Serum carotene	40–300 μg/100 ml
Vitamin D	a. Serum alkaline phosphatase	35–145 IU5/l
	b. Plasma 25 hydroxycholecalciferol	10–40 IU/l
Vitamin E	Plasma vitamin E	above 0.6 mg/100 ml
Vitamin K	Prothrombin time	12 seconds
5. Water-Soluble Vitamins		
a. Vitamin C	Serum ascorbic acid	above 0.3/100 ml
b. B complex:		
1. Thiamin	Red blood cell transketolase	0–15%
2. Riboflavin	Red blood cell glutathione	below 1.2
3. Niacin	Urinary nitrogen	above 0.6 mg/g creatinine
4. Vitamin B6	Tryptophan load	below 50 μg/24 hrs.
5. Vitamin B12	Serum B12	above 200 pg7/100 ml
6. Folacin above	Serum folacin	6.0 ng8/100 ml
6. Minerals		
Iodine	Serum protein bound iodine (PBI)	4.8–8.0 μg/100 ml
Iron	a. Hemoglobin	male 14 mg/100 ml female 12 mg/100 ml
	b. Hematocrit	male 44% female 33%
Calcium	Serum calcium	9.0–11.0 mg/100 ml

Phosphorus	Serum phosphorus	2.5–4.5 mg/100 ml
Magnesium	Serum magnesium	1.3–2.0 mEq/l
Sodium	Serum sodium	130–150 mEq/l
Potassium	Serum potassium	3.5–5.0 mEq/l
Chloride	Serum chloride	99–110 mEq/l
Zinc	Plasma zinc	80–100 μg/100 ml

Many parameters are useful in assessing nutrition status, including anthropometric, laboratory, physical, and historical data. These data form the basis for interpreting nutrient needs and determining how they will be met. Each client's individual needs in all the areas must be considered. The Needs can change as people change—aging, recovering from diseases, or adopting different lifestyles are some of the important changes that require different nutritional patterns.

1.18.4.Dietary methods

Assessing food and fluid intake is an essential part of nutrition assessment. It provides information on dietary quantity and quality, changes in appetite, food allergies and intolerance, and reasons for inadequate food intake during or after illness.

The first methods use is called 24-hour recall. This technique is used to quantify or assess the average dietary intake. The patient is asked to remember in detail every food and drink consumed along the previous 24 hours. It may be repeated on several occasions in order to count day to-day variation in intake. The nurse will ask the patient to remember what they ate or drank for a specified period of time or activities.

The second method for dietary assessment is food frequency questionnaire which provide information that establishes usual dietary intake. It is designed to obtain information on overall dietary quality rather than nutrient composition and intake. The food frequency questionnaire examines how often someone eats certain foods, and sometimes the size of the portions. It consists of a list of foods and a selection of options relating to the frequency of consumption of each of the foods listed (e.g., times per day, daily, weekly, monthly).

Another way to do dietary assessment is called food group questionnaire which focus on showing clients' pictures of different food groups (often available from national nutrition authorities) and ask whether they ate or drank any of those foods the previous day.

a. Weighed food records

The 7-day weighed food record is frequently regarded as the "gold standard" against which other methods are compared, because it uses many days of recording –

which is more likely to capture the usual intake of an individual – and provides exact measures for portion sizes. Prior to consumption, subjects or investigators are required to weigh each item of food and drink. A detailed description of the food (individual ingredients, brand name, method of preparation, etc.) and its weight are recorded.

b. Estimated food records

Estimated food records are similar to weighed food records, the difference being the way in which individuals or investigators quantify food intake. Intake is estimated, rather than weighed, and then converted into amounts that can be used to calculate food and nutrient intake

c. Household food surveys

A number of surveys are meant to collect information about dietary intake at the household level. This method has been used to monitor long-term dietary intake and provide information on food expenditure and food and nutrient intake trends over a period of time.

Examples of questions that are used for nutrition history

1. How many meals and snacks do you eat each day?

   Meals---------- Snacks----------

2. How many times a week do you eat the following meals away from home?

   Breakfast-------- Lunch---------- Dinner

   What type of eating places do you frequently visit? Fast food Diner?cafetaria Restaurant---- other---------

3. On average, how many pieces of fruit or glasses of juice do you eat or drink each day?

   Fresh fruit----------juice ----------

4. On average, how many servings of vegetables do you eat each day? ----------

5. On average, how many times a week do you a high-fiber breakfast cereal? ------

6. How many times a week do you eat red meat (beef, lamb, veal) or pork?----------

7. How many times a week do you eat chicken or turkey?-------

8. How many times a week do you eat or shellfish?--------

9. How many hours of television do you watch every day?---------

   Do you usually snack while watching television? Yes----No----

10. How many times a week do you eat desserts and sweets?------

11. What types of beverages do you usually drink? How many servings of each do you drink a day?

Water----	Milk:	Alcohol:
Juice----	Whole milk:----	Beer----------
Soda------	1%milk----------	Wine----------
Diet soda ------	skim milk--------	hard liquor---
Sports drinks		
Ice tea-------		
Iced tea with sugar------		

Self-assessment 1.18

1. What are the common anthropometric measurements?
2. Identify the clinical signs and symptoms of nutritional deficiencies based on physical examination of the following organs:

a. Skin, hair, and mucous membranes
b. Eyes
c. Abdomen

3. What are the laboratory tests and acceptable limits that are useful for determining malnutrition problems relating to the following nutrients?

a. Carbohydrate
b. Iron
c. Calcium

1.19. Oral feeding

Learning activity 1.19

Observe the pictures below:



A



B

1. What do you see on pictures A and B?
2. Differentiate pictures A and B in terms of the activities that are being performed.
3. What do you expect to learn from this lesson?

Nutrition is a basic component of health that affects a patient's rate of recovery from short-term and chronic illness, surgery, and injury. The lack of attention to a patient's nutritional status leads to malnutrition.

Associate nurse collaborates with a variety of health care professionals regarding the nutritional health of patients and participate in nutritional screenings and assessments. He/she also assess and help patients with feeding and identify patients at risk for difficulty swallowing and aspiration during feeding.

Nutritional screening must be completed within 24 hours of admission to a hospital, within 14 days of admission to a long-term care facility, or within a facility-defined period of time in ambulatory and home care settings.

Hospitalized patients receive a number of different oral diets that require a health care provider's order. A therapeutic diet treats many illness and disease states. A regular diet can be modified in two ways: quantitatively or qualitatively. Qualitative diets include modifications in consistency, texture, or nutrients such as clear or full liquid. Quantitative diets include modifications in number or size of meals served or amounts of specific nutrients such as six small feedings or calorie diets. You can supplement any diet with oral nutrition supplements. You prepare a patient so he or she can be comfortable and not interrupted during a meal.

Helping adults with oral nutrition requires time, patience, knowledge, and understanding. Most people eat without assistance. For other people assistance is required to get food from the plate and into the mouth. When they are ill, many patients require assistance either to feed themselves or, if necessary, to be fed by another person if unable to eat independently.

Altered dentition, improperly fitted dentures, oral lesions or infections, or diseases causing impaired digestion limit the types and consistencies of foods tolerated. Hemiplegia, fractured arm, quadriplegia, debilitating illness, or generalized weakness limits self-feeding ability and appetite.

Equipment for oral feeding:

- Stethoscope and tongue blade for assessment
- Washcloths and towels
- Tongue blade

- Adaptive utensils as necessary for self-feeding
- Oral hygiene supplies

Table 1.19 1 Implementation of oral feeding

Steps	Rationale
1. Prepare patient's room for mealtime:	
a. Perform hand hygiene. Clear over-bed table.	Reduces transmission of microorganisms and prepares room for food tray.
b. Help patient to sit in comfortable position in chair or place bed in high-Fowler's position. If patient is unable to sit, turn him or her on side with head of bed elevated.	Upright position facilitates swallowing. It reduces aspiration risk. Conditions such as pressure ulcer, traction, or spinal surgery prevent positioning with head elevated.
2. Prepare patient for meal: a. Help patient with pain relief and elimination needs and help him or her perform hand hygiene before meals.	Increases patient's comfort and enjoyment of meal, which helps increase patient's nutritional intake.
b. Help patient put in dentures and put on eyeglasses or insert contact lenses if used.	Enhances patient's ability to see, bite, chew, and swallow food.
3 Ask in which order patient would like to eat his or her meal. Ask about desired seasonings. Help patient to cut food in bite size pieces if unable to do independently.	Allows patient more independence and control. Small pieces are easier to chew and minimize risk for aspiration.
4 Use adaptive eating and drinking aids as needed according to your assessment (e.g., two-handled cup with lid, plate with plate guard, utensils with splints, and utensils with enlarged handles).	Eating and drinking aids help to place, direct, and control food bolus (saliva-softened mass of chewed food) and liquid and to maintain proper head posture.
5 Identify food placement for disoriented, visually impaired, or easily fatigued patients by locating on plate as if plate were a clock.	Helps patient locate food items; may be able to feed self if given adequate information about food placement on tray.
6 Feed patient in manner that facilitates chewing and swallowing:	

a. Older adult: Feed small amounts at a time, observing biting, chewing, swallowing, and fatigue between bites; be sure that patient has swallowed food.	Chewing and sitting up for feeding accelerates onset of fatigue
b. Neurologically impaired patient: Feed small amounts at a time and assess for ability to chew, manipulate tongue to form bolus, and swallow. Check for food left inside cheeks (pocketing).	Some patients with limited tongue strength and control are unable to move food to back of mouth for swallowing. Checking for "pocketed" food in mouth prevents aspiration.
7. Provide fluids as requested. Encourage patients not to drink all liquid at beginning of meal.	Helps with swallowing. Prevents patient from filling up on liquids.
8 Talk with patient during meal.	Meal should be a pleasant event. Conversation promotes socialization. Involve family if possible.
9 Use meal as opportunity to educate patient (e.g., topics related to nutrition, postoperative exercises, discharge plans).	Education can occur whenever nurse and patient are together.
10 Help patient with hand hygiene and performing mouth care.	Maintains comfort.
11 Help patient to return to resting position, leave head elevated 30-45 degrees for 30-60 minutes after meal.	Patient may feel tired after full meal. Elevation of head reduces risk for aspiration.
12 Return patient's tray to appropriate place and perform hand hygiene.	Reduces spread of microorganisms.

Self-assessment 1.19

1. What is the rational for putting the patient in high-Fowler's position during oral feeding?
2. Why should the associate nurse or family talk with patient during meal?
3. What is the required equipment for oral feeding?

1.20. Nasogastric tube feeding

Learning activity 1.8

Observe the pictures below:



A



B



C



D

1. What information do you get from the above pictures?
2. Describe the activities that are being done in pictures B, C, and D mentioned above.
3. What do expect to be the today's lesson?

In order to help patients who are not able to swallow, a nasogastric tube is required. Nasogastric tube feeding is a method for providing nutrients to patients who are not able to meet their nutritional requirements orally. As a rule, candidates for enteral nutrition must have a sufficiently functional gastrointestinal (GI) tract to absorb nutrients.

1.20.1. Indications for Nasogastric tube feeding

Indications for Nasogastric tube feeding include the following:

- Situations in which normal eating is not safe because of high risk for aspiration: Altered mental status, swallowing disorders, impaired gag reflex, dependence on mechanical ventilation, certain esophageal conditions (strictures, or dysmotility), and delayed gastric emptying – inability to safely and adequately consume oral intake.
- Clinical conditions that interfere with normal ingestion or absorption of nutrients or create hypermetabolic states: Surgical resection of oropharynx, proximal intestinal obstruction or fistula, pancreatitis, burns, and severe pressure ulcers.
- Short-term feeding (< 6 weeks) with functional gastrointestinal tract
- Conditions in which disease or treatment-related symptoms reduce oral intake: Anorexia, nausea, pain, fatigue, shortness of breath, or depression.

1.20.2. Advantages and disadvantages for Nasogastric tube feeding

Advantages

It is easy to place and remove tube. It uses stomach as reservoir. It can use intermittent feedings. Dumping syndrome is less likely than with naso-intestinal (NI) feedings.

Disadvantages

It is contraindicated for clients at high risk for aspiration. It is potentially irritating to the nose and esophagus. It may be removed by uncooperative or confused patients. It is not appropriate for long-term use. It is unaesthetic for patient.

1.20.3. Technique of nasogastric feeding

a. Preparation

Before starting feeding procedure, the nurse will have to prepare him/herself as follow:

- Wear clean uniform (dress or gown)
- Tie hair properly
- Remove watch and jewelry
- Wash hands
- Be aware of food reactions, its side effects and its interactions with the treatment at hand.
- Check patient's medical prescription

The next step will be the assessment:

- Identify the patient.
- Assess patient's clinical status to determine potential need for tube feedings, decreased level of consciousness, nutritional deficits, head or neck surgery, facial trauma, or impaired swallow, patient's ability to understand and co-operate, physical and psychological condition.
- Assess patient for food allergies.
- Perform physical assessment of abdomen, including auscultation for bowel sounds before feeding.
- Obtain baseline weight and review serum electrolytes and blood glucose measurement.
- Assess patient for fluid volume excess or deficit, electrolyte abnormalities, and metabolic abnormalities (e.g., hyperglycemia).
- Verify health care provider's order for type of formula, rate, route, and frequency.
- Check expiration date of feed and check for damage

The preparation of patient will focus on:

- Respect of patient's privacy
- Evaluate the patient's ability to understand and co-operate
- Inform and explain the patient/family: objective, procedure, etc. of care
- Get patient's consent

Equipment

- Trolley or disinfected tray
- A container with liquid or semi liquid food at room temperature or a disposable feeding bag, tubing, or ready-to-hang system
- 50-60mL or larger "Janet" Syringe
- Clean gloves
- Protection for the patient
- A cup of clean water to rinse the catheter
- Clean gauze / tissue to wipe the patient's mouth, if necessary
- Stethoscope
- Kidney dish
- Enteral infusion pump for continuous feedings if applicable
- pH indicator strip (scale 0.0 to 11.0)

- Document (file) for recording the frequency and administered quantity
- Prescribed enteral formula

b. Implementation

1. Identify patient using two identifiers (i.e., name and birthday or name and account number) according to agency policy. Compare identifiers with information on patient's identification bracelet.
2. Perform hand hygiene. Apply clean gloves
3. Obtain formula to administer: Verify correct formula and check expiration date; note condition of container. Provide formula at room temperature.
4. Prepare formula for administration:

a) Use aseptic technique when manipulating components of feeding system (e.g., formula, administration set, connections).

b) Shake formula container well. Clean top of canned formula with alcohol swab before opening it.

c) For closed systems, connect administration tubing to container. If using open system, pour formula from brick pack or can into administration bag (see illustration).

5. Open roller clamp and allow administration tubing to fill. Clamp off tubing with roller clamp. Hang container on intravenous (IV) pole.
6. Place patient in high-Fowler's position or elevate head of bed at least 30 degrees (preferably 45 degrees). For patient forced to remain supine, place in reverse Trendelenburg's position.
7. Verify tube placement. Observe appearance of aspirate and note pH measure.
8. Check gastric residual volume (GRV) before each feeding (for bolus and intermittent feedings) and every 4 to 6 hours (for continuous feedings):

– Draw up 10 to 30mL air into syringe and connect to end of feeding tube.

– Inject air into tube. Pull back slowly and aspirate total amount of gastric contents.

– Return aspirated contents to stomach unless volume exceeds 250mL.

– Do not administer feeding when a single GRV measurement exceeds 500mL or when two measurements taken 1 hour apart each exceed 250mL.

– Flush feeding tube with 50mL of water

9. Before attaching feeding administration set to feeding tube, trace tube to its point of origin. Label administration set, "Tube Feeding Only."

Intermittent gravity drip:

- Pinch proximal end of feeding tube and remove cap. Connect distal end of administration set tubing to feeding tube and release tubing.
- Set rate by adjusting roller clamp on tubing or attach tubing to feeding pump. Allow bag to empty gradually over 30 to 45 minutes. Label bag with tube-feeding type, strength, and amount. Include date, time, and initials.
- Change bag every 24 hours.

Continuous drip method:

a) Connect distal end of administration set tubing to feeding tube as in Step 10a.

b) Thread tubing through feeding pump; set rate on pump and turn on.

10. Advance rate of tube feeding gradually, as ordered.

11. Flush tubing with 30mL water every 4 hours during continuous feeding, before and after an intermittent feeding. Have registered dietitian recommend total free water requirement per day and obtain health care provider's order.

12. When patient is receiving intermittent tube feeding, cap or clamp end of feeding tube when not being used.

13. On completion of feed, flush the tube with 10-20 CC of water or until the tube is clear (or volume as recommended on dietetic regimen). The plunger must be used for flushing to achieve optimum flushing of the tube and prevent blockage.

14. Close the clamp on the NG tube then disconnect the syringe and recap the feeding port.

15. Wipe the mouth

c. Completion of the procedure

- Position the patient comfortably and appropriately
- Arrange personal effects of the patient and put them within reach.
- Thank the patient for his or her collaboration
- Eliminate waste
- Dispose of supplies and perform hand hygiene
- Provide a health education related to the patient's health condition
- Wash hands
- Record and sign the administration of food on the monitoring document by providing clear specifications as follows: feeding hour, administered quantity, patient's reactions, and possible residues.

Self-assessment 1.20

1. What are the indications for nasogastric tube feeding?
2. Within the skills laboratory, prepare the material for nasogastric tube feeding. By using simulation mannequin (model), perform nasogastric feeding with respect of all recommended steps.

End unit assessment 1

1) Recommendation for protein during pregnancy is:

a. 60 g daily
b. 14 g daily
c. 32 g daily
d. 75 g daily

2) It is recommended that pregnant women get at least 1000mgs/day of ..., to help build healthy bones for mother and baby.

a. Calcium
b. Folic acid
c. Iron
d. Thiamine

3) Reduces the risk of birth defects of the brain and spinal cord; referred to as the “neural tube”

a. Calcium
b. Folic Acid
c. Potassium
d. Fiber

4) Which supplement helps prevent anemia and supports the baby’s growth and development

a. zinc
b. vitamin D
c. DHA
d. iron

5) Discuss the factors that influence eating habits to promote a healthy lifestyle

6) Discuss the different nutritional disorders found in children aged less than five years and their management

7) Explain the specific diets for management of the adolescents with Anorexia nervosa and Bulimia

8) Explain how to prevent iron deficiency anemia to an infant?

9) What nutrients should be mostly recommeded for promoting the growth of children

10) What will you discourage to eat or drink to a lactating Woman?

11) Discuss the food components and their sources that should be emphasized in the diets of older Adults.

12) What are the causes of food insecurity?

13) Identify the general measures for preventing food spoilage

14) Describe 4 simple household food preservation technique

15) Explain the storage methods of fruits; vegetables; cereals, milk, sweet and potatoes.

16) Discuss shortly the food habits

17) What are the cultural factors affecting food choices

18) Differentiate Kwashiorkor from Marasmus in terms of their clinical features, prevention and management.

19) What are the clinical characteristics of the people with the following vitamin deficiencies: vitamin A and C

20) What are the good dietary sources of the following vitamins: Vitamin A; B1 (thiamine); and C

21) What are the good dietary sources of (a) folic acid (b) iron (c) Zinc?

22) Discuss the dietary management of obesity

23) What are the common anthropometric measurements?

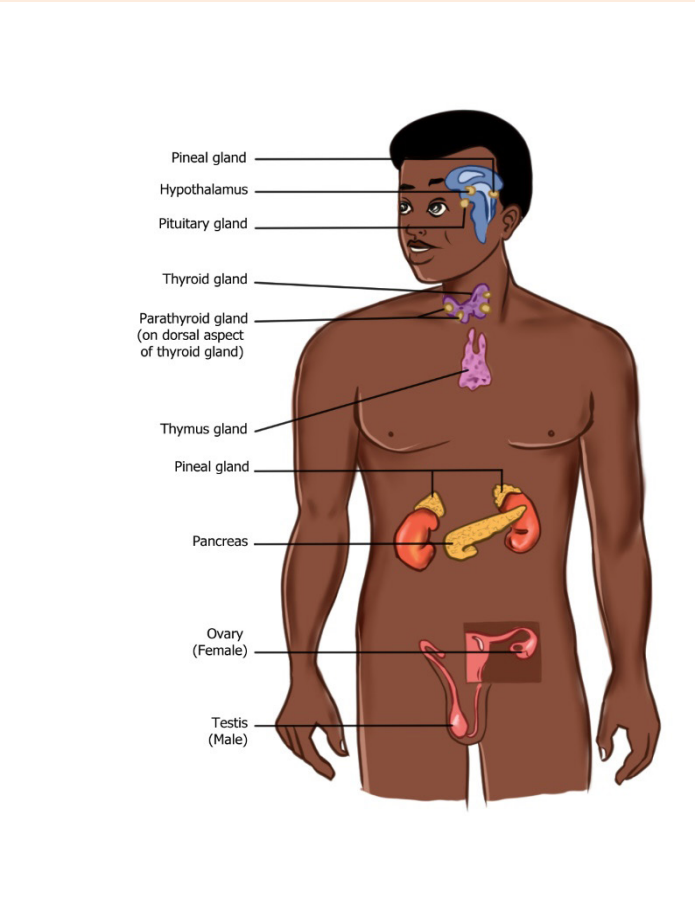
24) What is the rational for putting the patient in high fowler's position during oral feeding?

25) What are the indications for nasogastric tube feeding?

UNIT 2

NURSING ASSESSMENT OF ENDOCRINE SYSTEM

Introductory activity 2



Observe the picture above and answer the following questions:

1) What do you see on the picture above?
2) On your point of view, what is the role of each part mentioned on the picture above?
3) You receive a patient suspected of having endocrine disorder. What is general assessment you are going to perform

2.1. Specific History Taking on Endocrinology System

Learning activity 2.1



Observe the picture above and answer below questions:

1) What do you see on the picture above?
2) What are history to collect when suspecting a problem arising from the endocrine system?

2.1.1. Overview of history taking of endocrine system

The endocrine system is a series of glands and tissues that produce and secrete hormones, which are used by the body to regulate and coordinate vital bodily functions, including growth and development, metabolism, sexual function and reproduction, sleep and mood.

At the time of taking history of the patient focusing on endocrine system, the history regarding illness, personal history, family history and social history will be asked to patient. Furthermore, both subjective and objective data are assessed. Endocrine disorders and diseases usually manifest according to which endocrine hormone is being overproduced and secreted, or under-produced, at any given age.

History taking in endocrine system follows the general client history and focus on history regarding illness, personal history, family history, social history as well as subjective and objective data.

a. History regarding illness

The health care professional asks the patient how and when the disease started. What are aggravating factors and what are alleviating factors of the disease.

b. Personal history

A personal history in endocrinology system is similar like other assessment and may include information about allergies, illnesses, surgeries, immunizations, and results of physical exams, tests, and screenings.

c. Family history

Family history is crucial in endocrinology system because a mutated gene causes different endocrine glands in the body to develop benign and cancerous neuroendocrine tumors. Endocrine glands secrete hormones, so tumors arising from these glands may also overproduce hormones that result in symptoms. Hence it can provide insight into a patient's risk for developing certain cancers or even give a hint as to how aggressively a particular patient's cancer might behave. Furthermore, many endocrinology systems develop along with a family because some families are exposed to develop a given disease example of diabetes. Health care provider asks a patient on history of the endocrinology disease in a given family.

d. Social history

The social history covers the patient's lifestyle, such as marital status, occupation, education, and hobbies. It may also include information about the patient's diet, use of alcohol or tobacco, and sexual history. Along with the chance to connect with the patient as a person, the social history can provide vital early clues to the presence of disease, guide physical exam and test-ordering strategies, and facilitate the provision of cost-effective, evidence-based care.

2.1.2. Subjective and objective data

After taking patient history, continue with subjective data and objective data

Ask the patient symptoms he /she is feeling and the patient can accuse one or more of the following symptoms: dizziness, fatigue or lethargy, weight gain or loss, changes in vision, feelings of depression, irritability, or anxiety, decreased libido, change in appetite, pain, nausea and vomiting, changes in urinary or bowel habits, intolerance to heat or cold.

Objective data will focus on endocrinology system which will be discussed in this unit. Always assess patient from head to toe.

Note: A patient with one endocrine disease (e.g., Hashimoto's thyroiditis) is at greater risk for the development of other endocrine disorders (e.g., adrenal, testicular, or ovarian failure).

Self-assessment 2.1

1) The key to discovering the nature of the symptoms found during assessment is lying in understanding of the functions of the endocrine hormones.

a. True
b. False

2) Which sign will indicate a health professional to assess the endocrine system?

a. Fever
b. Bleeding
c. Frequent urination
d. Abdominal pain

2.2. General Survey in Endocrinology System

Learning activity 2.2

Observe the picture below and answer questions



A



B

1) Considering the height, do the images A and B look normal?
2) While assessing these people, what are general survey to conduct in order to know origin of their problems?

The general appearance of a patient may provide diagnostic clues to the illness, severity of disease, and the patient's values, social status, and personality. By gathering general survey in a person with endocrine system observing and focusing carefully on facies, features and expression, build & stature, nutrition, decubitus, neck vein, neck glands, anemia, cyanosis, clubbing, jaundice, edema, pulse, respiration, Temperature, BP, generalized skin & nail and extremities.

Note: stature and habitus: observe the patient's body build. **Very short stature** will be seen in dwarfism, pseudo hypoparathyroidism, Turner's syndrome, or prepubertal steroid therapy. V**ery tall and lanky** people with long, thin extremities suggest **Marfan's syndrome.**

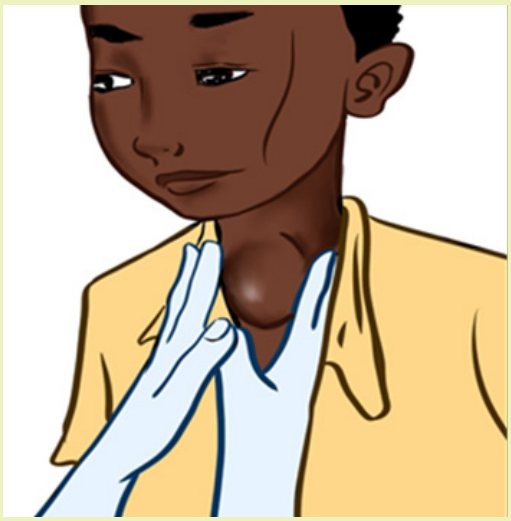
Self-assessment 2.2

1) What should you focus more while conducting general survey on endocrine system?
2) You receive a 30-year-old male with 90cm of height, what is the first disorder you think on your first sight?

2.3. Physical exam of endocrine system

Learning activity 1.9

Observe the image below



1) What do you see on the image above?
2) What are possible findings post the action done on this above picture?

Physical examination techniques in a focused endocrine assessment follows the same steps used in a general exam and it made of inspection, auscultation, percussion and palpation.

2.3.1. Inspection

During inspection, a health professional inspect overall patient and note any abnormalities. He/she looks for generalized appearance, skin color, any lesion and its location, bruises or rashes, body shape and symmetry, size of body parts, any abnormal sounds, any abnormal odors, inspect the neck from the front.

2.3.2. Auscultation

Auscultation is done before palpation and percussion.

2.3.3. Palpation

Palpation is done to assess endocrine system on the area where the organs linked to endocrine system are located. It can be light or deep palpation. Palpation helps health care professional to assess for texture, tenderness, temperature, moisture, pulsations, masses, and internal organs.

When palpating the neck where located thyroid gland, the patient sits with the neck muscles relaxed and stand behind him. Health care provider palpate gently the thyroid on the front of the patient's neck, with index fingers just touching lateral to the trachea where the thyroid is located. In normal conditions, thyroid gland is not palpable.

Shape and surface: Simple goiter is relatively symmetrical in their earlier stages but often become nodular with time

Mobility: Most goiters move upwards with swallowing. Very large goiters may be immobile, and invasive thyroid cancer may fix the gland to surrounding structures.

Consistency: Nodules in the substance of the gland may be large or small, and single or multiple, and are usually benign. A very hard consistency suggests malignant change in the gland.

Large: firm lymph nodes near a goiter suggest thyroid cancer.

Tenderness: Diffuse tenderness is typical of viral thyroiditis, whereas localized tenderness may follow bleeding into a thyroid cyst.

Thyroid bruit: This can be found during auscultation and indicates abnormally high blood flow and can be associated with a palpable thrill. It occurs in hyperthyroidism. A thyroid bruit may be confused with other sounds. A bruit arising from the carotid artery or transmitted from the aorta will be louder along the line of the artery. Transient gentle pressure over the root of the neck will interrupt a venous hum from the internal jugular vein.

Endocrine organs namely **testes** and **thyroid glands** are the only endocrine glands that may be accessible for physical examination.

2.3.4. Percussion

Percussion helps to produce tenderness or sounds that point to underlying problems. When percussing directly over suspected areas of tenderness, monitor the patient for signs of discomfort.

Examples of area to percuss in endocrine disorder: enlarged pancreas, a pleural effusion associated with specific endocrine abnormalities, or a hormone-secreting tumor.

Self-assessment 2.3

1) Outline 2 examples of organs that can be assessed during palpation in endocrine system.
2) Name other endocrine organs of the human body

2.4. Interpretation of specific findings in endocrine system

Learning activity 10

Observe the image below



1) The image above shows a male patient, what are particularities seen on this patient?

A comprehensive physical examination and its interpretation is required in endocrine system. Symptoms of endocrine disturbance are varied and non-specific, and affect many body systems.

The main endocrine glands are the pituitary, thyroid, parathyroid, pancreas, adrenals and gonads (testes and ovaries). These glands synthesize hormones which are released into the circulation and act at distant sites.

Examination sequence

The initial greeting may suggest a diagnosis. Inspect the face for a '**spot**' endocrine diagnosis

Observe the patient behavior: if the patient restless and agitated (hyperthyroidism)? or slow and lethargic (hypothyroidism)?

Examine the entire skin surface, looking for abnormal pallor (hypopituitarism), vitiligo, plethora (Cushing's or carcinoid syndrome) or pigmentation (Addison's disease).

If the patient is obese, is the adiposity centrally distributed (Cushing's syndrome and growth hormone deficiency)?

Observe the body hair in quality and amount: look for hirsutism in females with menstrual disturbance, especially on the face, chest and abdomen

Examine the hands for excessive sweating, soft tissue overgrowth (acromegaly), skin crease pigmentation (Addison's disease) and wasting of the thenar muscles due to carpal tunnel syndrome. Assess the pulse rate, rhythm and volume. Record the blood pressure because **hypertension** is a feature of several endocrine conditions. Check for postural hypotension with lying and standing blood pressures if you suspect adrenal insufficiency.

Examine the eyes in all thyroid patients for external inflammation, proptosis, diplopia and visual function. Assess visual acuities and fields in patients with suspected pituitary tumors, to detect bitemporal hemianopia due to compression of the optic chiasm. Examine the fundi for optic atrophy in patients with longstanding optic pathway compression.

Examine the patient face and note any hirsutism (Hirsutism results in excessive amounts of stiff and pigmented hair on body areas where men typically grow hair, including the face, chest and back, Hirsutism can result from excess male hormones, called androgens.

Examine the neck for goiter. If this is present, record its size, surface and consistency. Look for **gynaecomastia** (enlargement of a men's breasts, usually due to hormone imbalance or hormone therapy) and for evidence of milk production in a man or non-

breastfeeding woman (galactorrhoea). Inspect the axillae for acanthosisnigricans or loss of axillary hair

Examine the male external genitalia. Inspect the amount of pubic hair and make a pubertal staging of all adolescents. Record testicular consistency and volume. Inspect the legs for evidence of pretibial myxoedema (Graves' disease), proximal muscle wasting and weakness (Cushing's syndrome and hyperthyroidism).

Self-assessment 2.4

1) Hypertension is a feature of several endocrine conditions

a. True

b. False

2) The initial greeting of a patient suffering from endocrine system may suggest a diagnosis.

a. True

b. False

3) Differentiate hirsutism from gynecomastia

2.5. Identification of client problem

Learning activity 2.5



A B C

A: Grave's hyperthyroidism,typical face

B: Hypothyroidism

C: Hirsutism

1) Identify the problem found on patient A, B and C

Common endocrine disorders are: **diabetes mellitus** (a disease in which the body's ability to produce or respond to the hormone insulin is impaired, resulting in abnormal metabolism of carbohydrates and elevated levels of glucose in the blood),**acromegaly**(overproduction of growth hormone), **addison's disease** (decreased production of hormones by the adrenal glands), **cushing's syndrome** (high cortisol levels for extended periods of time), **graves' disease** (type of hyperthyroidism resulting in excessive thyroid hormone production), **hashimoto's thyroiditis** (autoimmune disease resulting in hypothyroidism and low production of thyroid hormone), **hyperthyroidism** (overactive thyroid), **hypothyroidism** (underactive thyroid), **prolactinoma**(overproduction of prolactin by the pituitary gland). The Treatments depend on the specific disorder but frequently focus on regulating hormone balance using synthetic hormones.

Serious symptoms that might indicate a life-threatening condition

In some cases, endocrine disorders can be life threatening. The patient can have symptoms/signs like: confusion or loss of consciousness for even a brief moment, dangerously low blood pressure (extreme hypotension), dangerously slow heart rate, dehydration, depression or anxiety, difficulty breathing, eye problems, including dryness, irritation, pressure, pain or bulging severe fatigue or weakness, severe, unexplained headache, severe vomiting and diarrhea, sleep disturbances.

Self-assessment 2.5

1) Define the term acromegaly
2) Outline five Serious symptoms that might indicate a life-threatening endocrine condition

2.6. Nursing intervention based on client problem

Learning activity 2.6

A 35 years old patient, was admitted in medical word complaining of generalized body weakness, increased sensitivity to cold, constipation, dry skin, weight gain, puffy face, hoarseness, muscle weakness, pain, stiffness or swelling in joints, slowed heart rate, depression, impaired memory and enlarged thyroid gland (goiter).

1) What is the suspected diagnosis (problem) for this patient?

2.6.1. Interventions

Nursing intervention in endocrine system depends the client disorder.

For diabetic patient, **Monitor the patient's signs of hyperglycemia and hypoglycemia and intervene accordingly. Monitor the patient weight to avoid obesity and** help assess the adequacy of nutritional intake and **vitals signs monitoring**

Education the importance of physical activity. Education on how to self inject insulin if any and how to take other medications. Physical activity helps lower blood glucose levels. Regular exercise is a core part of diabetes management and reduces the risk for cardiovascular complications.

Monitor patient for evidence of excess physical and emotional fatigue because **hyperthyroidism** results in protein catabolism, over activity, and increased metabolism leading to exhaustion.

Monitor cardiorespiratory response to activity (e.g., tachycardia, other dysrhythmias, dyspnea, diaphoresis, pallor, blood pressure [BP], and respiratory rate) because decompensation of cardiopulmonary function can occur with **hypermetabolism.**

Assist with regular physical activities (e.g., ambulation, transfers, turning, and personal care) to make certain patient's daily needs are met.

Assist the patient to understand energy conservation principles (e.g., the requirement for restricted activity or bed rest) to avoid fatiguing patient.

Assist the patient to schedule rest periods and avoid care activities during scheduled rest periods to promote adequate rest.

2.6.2. Nutrition Management

Determine, in collaboration with the dietitian, the number of calories and type of nutrients needed to meet nutrition requirements.

Ascertain patient's food preferences to determine extent of the problem and plan appropriate interventions.

Provide patient with high-protein, high-calorie, nutritious finger foods and drinks that can be readily consumed because **hyperthyroidism** increases metabolic rate with resulting need to prevent muscle breakdown and weight loss.

Offer snacks (e.g., frequent drinks, fresh fruits/juice) to maintain adequate caloric intake.

Monitor recorded intake for nutritional content and calories to evaluate nutritional status.

Weigh patient at appropriate intervals to evaluate effectiveness of nutritional plan.

Provide appropriate information about nutritional needs and how to meet them to promote self-care.

Assist the patient in receiving help from appropriate community nutritional programs.

2.6.3. Weight Management

Discuss with individual the medical conditions that may affect weight to reassure patient that optimal weight can be maintained with treatment of **hypothyroidism.**

Discuss with individual the relationship between food intake, exercise, weight gain, and weight loss to promote understanding of weight management.

Determine the individual's ideal body weight to plan weekly weight loss goals.

Assist in developing well-balanced meal plans consistent with level of energy expenditure.

Develop with the individual a method to keep a daily record of intake, exercise sessions, and/or changes in body weight to promote progress toward final goal.

2.6.4. Constipation/Impaction Management

Encourage increased fluid intake (e.g., 2-3 L of fluids per day) to maintain soft stool.

Instruct patient/family on high-fiber diet to increase knowledge of how to increase fecal mass.

Monitor bowel movements, including frequency, consistency, shape, volume, and color, to plan appropriate interventions.

Suggest use of laxatives/stool softeners to stimulate bowel evacuation.

Teach patient/caregivers about timeframe for resolution of constipation because elimination patterns will improve with treatment of hypothyroidism.

2.6.5. Reality Orientation

Monitor for changes in orientation, cognitive and behavioral functioning, and quality of life to determine appropriate interventions.

Inform patient of person, place, and time to decrease confusion.

Provide a low-stimulation environment for patient in whom disorientation is increased by overstimulation.

Speak to patient in slow, distinct manner with appropriate volume to allow patient to understand.

Avoid requests that exceed the patient's capacity (e.g., abstract thinking when patient can think only in concrete terms, decision making beyond preference or capacity) to decrease frustration and loss of self-esteem.

Use environmental cues (e.g., signs, pictures, clocks, calendars) to maintain orientation to time and day.

2.6.6. Infection Protection

Monitor for systemic and localized signs and symptoms of infection so infection can be detected early and treatment initiated promptly.

Provide private room.

Maintain asepsis for patient at risk.

Screen all visitors for communicable diseases to reduce the risk of infection exposure.

Monitor absolute granulocyte count, WBC count, and differential results to detect infection and plan treatment.

Obtain cultures as indicated to identify and treat infectious organisms.

Inspect skin and mucous membranes for redness, extreme warmth, or drainage because other signs and symptoms of infection may be minimal or absent.

Teach patient and family members how to avoid infections (e.g., hand washing).

Teach the patient and family about signs and symptoms of infection and when to report them to the health care provider.

2.6.7. Self-Esteem Enhancement

Encourage patient to identify strengths to promote awareness of capabilities.

Reinforce the personal strengths that patient identifies.

Make positive statements about the patient to boost morale by providing positive feedback.

Encourage increased responsibility for self to improve patient's appearance and self-esteem.

2.6.8. Teaching: Disease Process

Provide reassurance about patient's condition (e.g., explaining physical and emotional changes will resolve with hormonal balance) to increase their understanding and assist with coping.

2.6.9. Skin Surveillance

Observe extremities for color, warmth, swelling, pulses, texture, edema, and ulcerations for early detection of skin impairment.

Monitor for sources of pressure and friction to prevent injury to easily traumatized tissue.

Monitor skin for rashes and abrasions to promote early treatment.

Monitor skin and mucous membranes for areas of discoloration, bruising, and breakdown to provide early treatment.

Document skin or mucous membrane changes to provide early intervention.

2.6.10.Skin Care: Topical Treatments

Provide support to edematous areas to promote circulation to edematous areas.

Use devices on the bed (e.g., sheepskin) that protect the patient.

Self-assessment 2.6

1) Outline 5 action of nurse in prevention of infection for the patient with endocrine disorders.

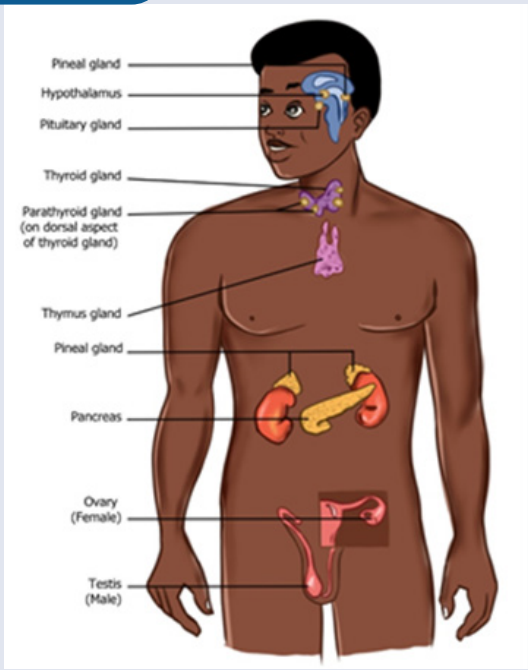
2) The nurse should ensure skin Surveillance in order to

a. Maintain skin color

b. Detect early signs of skin impairment.

c. Keep the skin clean

End unit assessment 2



1) Explain the hormones produced by each gland in the diagram above and its role in human body.

2) What is the result of overproduction and hypo production of each gland shown in this diagram in human body?

3) Explain the component of history taking in endocrine assessment

4) Observe the table below and match a disease with its cause

Diseases	Causes
1. acromegaly	A. type of hyperthyroidism resulting in excessive thyroid hormone production
2. addison's disease	B. overproduction of growth hormone
3. cushing's syndrome	C. autoimmune disease resulting in hypothyroidism and low production of thyroid hormone
4. graves' disease	D. high cortisol levels for extended periods of time
5. hashimoto's thyroiditis	E. decreased production of hormones by the adrenal glands
6. hyperthyroidism	F. underactive thyroid
7. hypothyroidism	G. overactive thyroid),

UNIT 3

NURSING ASSESSMENT OF NEUROLOGICAL SYSTEM

Key Unit Competence

Take appropriate action based on findings of nursing assessment of neurological system

Introductory activity 3

Neurological assessment is a sequence of questions and tests to check brain, spinal cord, and nerve function. The exam checks a person's mental status, coordination, ability to walk, and how well the muscles, sensory systems, and deep tendon reflexes work.

Observe the pictures below and answer the asked questions:



A



B

1) What do you see on picture A?
2) What do you see on picture B?
3) On your point of view, what are connections between picture A and the action which is being done on picture B?

3.1. Specific history taking on Neurological system

Learning activity 3.1

Observe the picture below:



1) Based on the picture above, what is problem does have this person?
2) What are possible questions can you ask to this person to know well about that problem?

Taking the patient's history is habitually the first step in practically every clinical meeting. Taking a detailed history and performing a careful examination can help the health care provider to determine the site of a specific neurological lesion and reach a diagnosis.

Always start with demographic data such as name, age, sex, educational background, marital status, religion and address. Ask the patient history of the presenting illness or chief complaint should include the following information: Symptom onset (acute, sub-acute, chronic, insidious), duration, course of the condition (static, progressive, or relapsing and remitting), associated symptoms (other features of neurological disease): Headache, Numbness, pins and needles, cold or warmth, Weakness, unsteadiness, stiffness) nausea, vomiting, vertigo, numbness, weakness, and seizures.

Firstly, observe the patient's gait as he/she enters the room. Note any abnormalities in gait and any involuntary movement.

Ask about the symptoms: What are they? Which part of the body do they affect? Are they localized or more widespread? When did they start? How long do they last for? Were they sudden, rapid or gradual in onset? Is there a history of trauma? Ask about any associated symptoms (other features of neurological disease): Headache, Numbness, pins and needles, cold or warmth, Weakness, unsteadiness, stiffness)

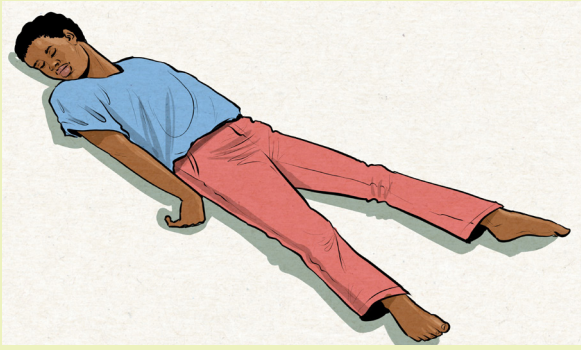
Self-assessment 3.1

1) Outline at list 5 questions you can use to ask patient about his/her symptoms

3.2. Specific physical examination of neurological system

Learning activity 3.2

Observe the image below and answer the questions



1) What do you see on image above?
2) What steps to follow in performing specific physical assessment for the above patient?

A complete neurological assessment consists of seven steps which are mental status exam, cranial nerve assessment, reflex testing, motor system assessment, sensory system assessment, coordination and Gait.

3.2.1. Mental Status

Changes in memory or mood, ability to care for oneself, ability to balance a checkbook, difficulty with language, geographical orientation,

3.2.2. Cranial nerve assessment

Abnormalities in vision, hearing, smell, taste, speech or swallowing, Facial weakness or numbness.

3.2.3. Reflex testing

Reflex testing occurs when an initial test result meets pre-determined criteria (e.g., positive or outside normal parameters), and the primary test result is inconclusive without the reflex or follow-up test. It is performed automatically without the intervention of the ordering physician.

3.2.4. Motor system assessment

History of muscular weakness, tremor, difficulty in initiating movements, loss of muscle bulk.

3.2.5. Sensory system assessment

Numbness, tingling, or altered sensation in any limbs.

3.2.6. Coordination

Clumsiness, difficulty with hand writing or carrying out coordinated tasks.

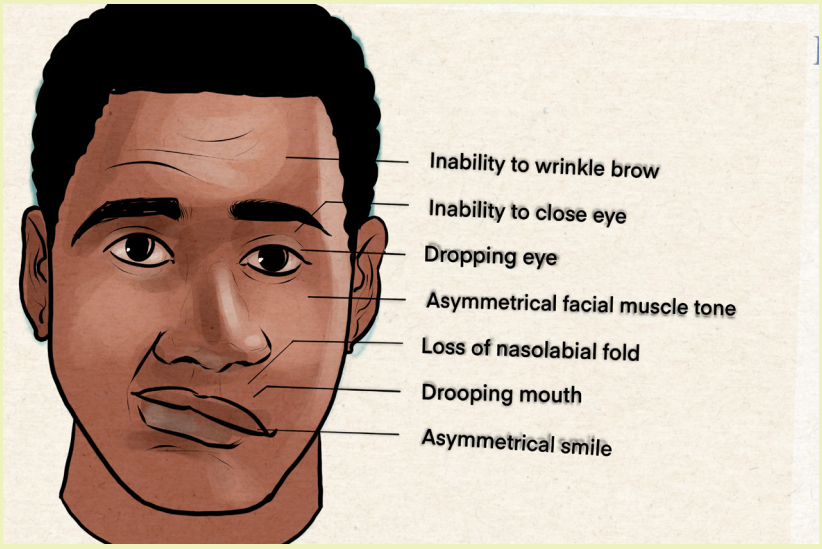
3.2.7. Gait and station

Abnormalities of gait, frequent falling, difficulty maintaining balance.

3.3. Interpretation of specific findings on Neurological system

Learning activity 3.3

Observe the image below



1) The picture above shows a patient with facial palsy with asymmetrical facial muscle tone. What is the most probable cranial nerve being more affected?

Interpretation of specific finding in neurological system is a very crucial step to guide diagnosis and treatment. It is necessary to assess each of the seven items assessed as discussed in previous lesson.

3.3.1. Mental status

The patient's attention span is assessed first; an inattentive patient cannot cooperate fully and hinders testing. Any hint of cognitive decline requires examination of mental status which involves testing multiple aspects of cognitive function. Assess the patient orientation to time, place, and person.

Assess the patient attention and concentration, memory, verbal and mathematical abilities, judgment and reasoning

3.3.2. Cranial nerve assessment

Each cranial nerve has a well-defined function and any abnormality in cranial nerve system should be assessed, reported and treated accordingly.

Table 3.3 1 Cranial nerves

Number and name of cranial nerve	Function to be assessed for interpretation
1st Cranial nerve (olfactory)	Smell: sensory nerve that functions for the sense of smell.
2nd Cranial nerve (optic)	Vision: it transmits sensory information for vision in the form of electrical impulses from the eye to the brain.
3rd cranial nerve (oculomotor)	Eye position: helps to adjust and coordinate eye position during movement
4th cranial nerve(trochlear)	Eye movement: Motor function, controlling external eye movements
5th cranial nerve(trigeminal)	Sensory and motor innervation to the face: responsible for sending pain, touch and temperature sensations from your face to your brain
6th cranial nerve (Abducens Nerve)	Somatomotor function including: Eye movement and abduction of the eyes Sensory functions including: Proprioception
7th cranial nerve (Facial Nerve)	Facial movement and expression: carries nerve fibers that control facial movement and expression. The facial nerve also carries nerves that are involved in taste to the anterior 2/3 of the tongue and producing tears (lacrimal gland).

8th Cranial nerve (Vestibulocochlear Nerve)	Special senses of hearing and balance: responsible for the special senses of hearing (via the cochlear nerve), and balance (via the vestibular nerve).
9th cranial nerve (Glossopharyngeal Nerve)	Facial movement, facial expression, and tongue taste and tears production: Control facial movement and expression. It also carries nerves that are involved in taste to the anterior 2/3 of the tongue and producing tears (lacrimal gland).
10th cranial nerve (Vagus Nerve)	Internal organs regulation: responsible for the regulation of internal organ functions, such as digestion, heart rate, and respiratory rate, as well as vasomotor activity, and certain reflex actions, such as coughing, sneezing, swallowing, and vomiting
11th cranial nerve (Accessory Nerve)	Motor and voice: Provide motor function (movement) to two muscles essential to neck and shoulder movement, the sternocleidomastoid (SCM) and the trapezius, as well as to the larynx (voice box) and other structures in the throat
12th cranial nerve (Hypoglossal Nerve)	Tongue movement.: it controls the hyoglossus, intrinsic, genioglossus and styloglossus muscles. These muscles help you speak, swallow and move substances around in your mouth

3.3.3. Reflextesting:

A reflex is an involuntary and nearly instantaneous movement in response to a stimulus. The reflex is an automatic response to a stimulus that does not receive or need conscious thought as it occurs through a reflex arc.

The muscle contraction should be seen and felt and compared side-to-side. If reflexes are diminished or absent, try reinforcing the reflex by distracting the patient or having the patient contract other muscles (e.g., clench teeth). Note, however, that symmetrically brisk, diminished, or even absent reflexes may be found in normal people. The muscle stretch reflexes that are the most clinically relevant and that you should know how to obtain include the biceps, triceps, knee, and ankle. The superficial (cutaneous) reflexes are elicited by applying a scratching stimulus to the skin. The only superficial reflex that you need to know other than the corneal is the plantar reflex. An abnormal plantar reflex (extension of the great toe with fanning out of the other toes upon stimulation of the plantar surface of the foot) is a specific

indicator of corticospinal tract dysfunction and may be the only sign of ongoing disease or the only residual sign of previous disease.

3.3.4. Motor system assessment

The motor exam is affected not only by muscle strength, but also by effort, coordination, and extrapyramidal function. Tests of dexterity and coordination are most sensitive to picking up upper motor neuron and cerebellar abnormalities, whereas direct strength testing is more sensitive to lower motor neuron dysfunction. Other aspects of the motor exam include (1) patterns of muscle atrophy or hypertrophy, (2) assessment of muscle tone (e.g., spastic or clasp knife, rigid or lead pipe, flaccid) with passive movement of joints by the examiner, (3) disturbances of movement (e.g., the slowness and reduced spontaneity of movement in parkinsonism), (4) endurance of the motor response (e.g., the fatigability of myasthenia gravis), and (5) whether any spontaneous movements are present (e.g., fasciculation or brief twitches within the muscle).

3.3.5. Sensory system assessment

Explain to the patient what you are going to do and what you expect of them, then have them close their eyes for the testing. Be aware of the fact that patients may report differences in sensation in the presence of normal sensory function because of actual differences in the stimulus intensity applied.

3.3.6. Gait

Since walking requires integration of motor, sensory, cerebellar, vestibular, and extrapyramidal function, assessment of gait can provide important information to guide the focus of the rest of the exam and can obviate the need for specific testing. It is for this reason that health care provider should watch the patient walk at the very beginning of the exam.

Pay attention to the following;

- Posture of body and limbs (Is the patient stooped over or leaning to one side? Is a limb held in a funny position?);
- Symmetry of arm swing (Is one side decreased?);
- Length, speed, and rhythm of steps (does the patient lurch? Are the legs stiff and scissoring?); 4) base of gait (Are the legs held far apart because the patient is unstable?);
- Steadiness; and
- Turns (How many steps does the patient take to turn?). More informative still is if the patient can run and hop on one foot.

Self-assessment 3.3

1) During assessment of mental health status, a nurse should assess the patient orientation on three aspects. What are they?
2) Give names and function of the following cranial nerves

a. 1st Cranial nerve
b. 2nd Cranial nerve
c. 4th cranial nerve
d. 11th cranial nerve
e. 12th cranial nerve

3.4. Identification of client problems

Learning activity 3.4

You receive a 36 years old female with balance difficulties; eyesight changes; weakness of face muscles; left arm weakness and difficult in speech since 5 hours ago.

What do you suspect?

Identification of client problem in neurological system is a key action very necessary to lead an appropriate diagnosis and treatment. The following are six common neurological disorders

3.4.1. Headaches

Headaches are one of the most common neurological disorders and can affect anyone at any age. The sudden onset of severe headache as well as headache associated with a fever, light sensitivity and stiff neck are all red flags of something more serious such as intracranial bleeding or meningitis.

3.4.2. Epilepsy and Seizures

Epilepsy is a common neurological disorder involving abnormal electrical activity in the brain that makes a patient more susceptible to having recurrent, unprovoked seizures. Unprovoked means the seizure cannot be explained by exposure to or withdrawal from drugs or alcohol, as well as not due to other medical issues such as severe electrolyte abnormalities or very high blood sugar.

3.4.3. Stroke

A stroke is usually due to a lack of blood flow to the brain, oftentimes caused by a clot or blockage in an artery. Many interventions can be done to stop a stroke these days, but time is brain (not money) in this case. The B.E. F.A.S.T. mnemonic is helpful to remember to recognize the signs of a stroke: B: Balance difficulties; E: Eyesight changes; F: Face weakness; A: Arm weakness; S: Speech; and T: Time. These signs and symptoms don't always mean someone is having a stroke, but it's very important to request help right away.

3.4.4. Amyotrophic Lateral Sclerosis (ALS)

Amyotrophic Lateral Sclerosis, also known as Lou Gehrig's disease, is a somewhat rare neuromuscular condition that affects the nerve cells in the brain and spinal cord. The cause is not well known, but factors that may cause ALS include genetics and environmental factors. Symptoms include muscle weakness and twitching, tight and stiff muscles, slurred speech, and difficulty breathing and swallowing. Unfortunately, this condition is difficult to diagnose and often requires the evaluation of a neuromuscular neurologist.

3.4.5. Alzheimer's disease and Dementia

Memory loss is a common complaint, especially in older adults. A certain degree of memory loss is a normal part of aging. For example, walking into a room and forgetting why may be totally normal. However, there are signs that may indicate something more serious, such as dementia or Alzheimer's disease. These symptoms may include getting lost, having difficulty managing finances, difficulties with activities of daily living, leaving the stove on, forgetting the names of close family and friends or problems with language. Behavioral changes along with these memory changes could also raise concerns. Dementia is a slowly progressive condition. While there is no cure, there are medications and therapies that can help manage symptoms.

3.4.6. Parkinson's disease

Parkinson's disease is a progressive nervous system disorder that primarily affects coordination. Generally, it becomes more common as a patient get older.

Symptoms of Parkinson's disease usually get worse over time. Patient may experience changes in posture, walking and facial expressions early on in the disease, and cognitive and behavioral problems could develop later in the disease.

Self-assessment 3.4

1) Memory loss is a common complaint:

a. True

b. False

2) Parkinson's disease is a progressive nervous system disorder that primarily affects coordination

a. True

b. False

3) State six common neurological disorders

3.5. Nursing intervention based on patient's problem.

Learning activity 3.5

You have received a 27years old male with epileptic disorder. He is seizing.

1) What are your interventions after seizure stop?

Nursing interventions in patient with neurological disorders are very crucial to alleviate the client discomforts. Any client complaints should be monitored and treated accordingly.

3.5.1. Interventions for Headache

- Encourage the client to rest in a quiet, dark room.
- Avoid noises
- Encourage relaxation techniques
- Collaborate with other health professionals to identify and treat the cause of headache

3.5.2. Interventions for Epilepsy/Seizure

The patient will be placed in a horizontal plane and care will be taken that he does not receive trauma to the skull, with the head tilted and the clothing lopsided.

Control and assess in the patient: assess the duration of the seizure, type of seizure, the level of consciousness, the coloring of the skin and mucous membranes.

Monitor vital signs :(Heart rate, breathing frequency, blood pressure, O2 saturation…), perform capillary blood glucose.

a. Tonic-clonic onset seizures

In those patients with previous epileptic seizures or with significant risk factors in treatment with antiepileptic drugs, severe brain injury, exposure to drugs and hallucinogens, etc.:

- Maintain the necessary material for oxygen therapy and aspiration, in optimal conditions.
- Facilitate the accessibility of calls to the nursing staff, especially if there are prodromes.
- Provide a suitable and safe environment, free of furniture and objects that can cause harm during the epileptic seizure.
- Protect the patient from all potentially harmful objects.
- Maintain a patent venous line if necessary.
- Inform the patient and the family about the action before the appearance of prodromes:
- Remove the teeth or other objects from the mouth.
- Remove the eye lenses.
- Lay him down on the floor or in bed.

b. During tonic-clonic onset epileptic seizures

- Keep calm and serenity as much as possible and we will transmit it to the patient, relatives.
- Identify that it is a tonic-clonic epileptic seizure.
- Alert: Notify the doctor on duty.
- Protect the patient:
- If the patient is out of bed, help him to lie down if possible, or lay him on the floor; avoiding as much as possible the fall.
- Do not leave the patient alone under any circumstances and monitor him.
- Remove nearby objects and / or furniture with which it may hit.
- Loosen clothing that is tight.
- Remove the glasses if you wear them.
- Do not immobilize or restrain the patient by force during the epileptic seizure, but control and guide their movements to avoid injuries.
- Protect the head by placing a pillow or a towel underneath.

c. Guarantee the patency of the airway:

- Remove, if possible, dentures and dental implants that are not permanent.
- Remove food from the mouth in case this process is carried out.

- Aspirate secretions, if necessary.
- Perform other nursing intervention are necessary such as oxygen administration, a peripheral line should be installed as soon as the seizures stop, monitoring of vital signs: (temperature, blood pressure, heart rate, breathing frequency), carry out the complementary tests as requested by the doctor.
- It is very important to control and assess the duration of the tonic-clonic phase, type of epileptic seizure, where does the movement or begin contracture, eye position and / or eye movements, the pupils (relationship between them, size and reactivity) and time the patient is unconscious. Assess any urinary and fecal incontinence. When the epileptic seizures cease, place the patient in the recovery position.
- Do not administer anything by mouth.
- If after the crisis he is excited, calm him down and reassure him.
- Administer the drug directed by the doctor.
- If there is any bleeding lesion, press with a sterile compress until the bleeding stops.
- Ensure that the environment is quiet and safe, without excessive lighting or noise.
- Carry out a new check of vital signs and serum glycemia.
- In case of incontinence, proceed to clean the patient.
- In case of drowsiness, let him rest.
- When he wakes up, redirect and reassure him.
- Carry out the complementary tests requested by the doctor.
- Control and assess: Duration of the post-seizure phase, assessment of the level of consciousness (GLASGOW SCALE), degree of confusion, if he is drowsy, let him sleep and do not wake him up or shake him, color of the skin and / or mucous membranes, whether he speaks or not. If there is paralysis or weakness in the arms and / or legs.

3.5.3. Interventions for stroke

- When a patient is having stroke, immediately call for ambulance because as he/she delays to get appropriate treatment, more serious complications develop
- Note the time the first symptom occurs
- Provide appropriate positioning.
- Prevent flexion and adduction
- Monitor closely vital signs

3.5.4. Interventions for Amyotrophic Lateral Sclerosis (ALS)

- Assess motor strength; presence of spasticity, flaccidity and presence contracture.
- Assess skin daily, especially those areas susceptible to breakdown.
- Promotion of activity and exercise.
- Encourage continuation of daily routines and activities.
- Range-of-Motion (ROM) exercises to prevent contracture and pain in joints; first Active ROM, then passive.
- When weakness in the extremities begins to compromise mobility, safety, or independence in Activities of daily living (ADL), refer to a physical or occupational therapist.
- Promotion of proper positioning to prevent decubitus ulcers. Use as many different positions as possible when in bed. Change positions every two hours, or on skin tolerance. After each change of position, check for redness over bone prominences, and provide an eggshell or circulating mattress when immobility prevents independent repositioning.
- Repositioning in the wheelchair based on the patient's skin tolerance. Use of a wheelchair cushion to prevent skin breakdown.
- Proper positioning when ambulating or in a wheelchair, i.e., use of a sling for a weak upper extremity.
- Promote adequate nutritional intake.

3.5.5. Interventions for Alzheimer's disease and Dementia

- Frequently orient client to reality and surroundings.
- Encourage caregivers about patient reorientation.
- Enforce with positive feedback and discourage suspiciousness of others.
- Avoid cultivation of false ideas
- Monitor client closely

3.5.6. Interventions for Parkinson's Disease

- Improving functional mobility and independence in performing activity of daily living.
- Assess bowel elimination and encourage patient on good diet to avoid constipation
- Improve and maintaining acceptable nutritional status,
- Promote effective communication and developing positive coping mechanisms.

Self-assessment 3.5

1) When the epileptic seizures cease, what is the best position to give to the patient?
2) Give 2 primary nursing interventions for each of following

a. Headache
b. Epilepsy/Seizure
c. Stroke

End unit assessment 3

1) Memory loss is a common complaint:

a. True
b. False

2) Parkinson's disease is a progressive nervous system disorder that primarily affects coordination

a. True
b. False

3) State six common neurological disorders
4) Give 2 primary nursing interventions for each of following

a. Headache
b. Epilepsy/Seizure
c. Stroke

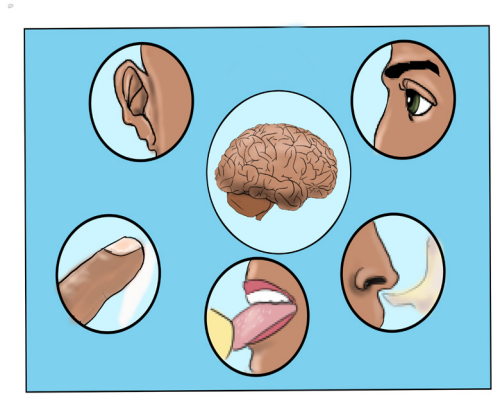
5) Outline at list 5 questions you can use to ask a neurological patient about his/her symptoms.
6) List 7 steps of complete neurological assessment

UNIT 4 NURSING ASSESSMENT OF SENSORY SYSTEM

Key Unit Competence

Take appropriate action based on findings of nursing assessment of Sensory system.

Introductory activity 4



A



B

1) How many images do you see in the picture A? List them
2) What is the role of each image in the picture A?
3) Which relationship between the image in the center of picture A and the surrounding images?
4) Which image in picture A corresponding to the action of nurse in picture B

A sensory system is a part of the nervous system consisting of sensory receptors that receive stimuli from the internal and external environment, neural pathways that conduct this information to the brain and parts of the brain that processes this information. We have 5 senses (vision, hearing and equilibrium, taste, smell, touch) and related sensory organs (eye, ear, tongue, nose and skin)

4.1. Specific history taking on sensory system

Learning activity 4.1



Observe the image above and respond to the following question

1) Describe people presented on the above figure.
2) What may be wrong with a person touching his head?
3) Enumerate the steps of a patient- health professional interaction during consultation

4.1.1. Assessment of the head

In clinical settings, health assessment of a patient is made of history taking and physical examination. It is up to clinicians to develop empathetic listening, ability to interview patients of all age, technique to assess different body part and ability to sum up the information obtained to identify the patient's health problem. A well-done health history should follow a chronological order as follow: identifying data, chief complaints, history of presenting illness, past health related history, family history, personal and social history and review of systems.

Usually, the assessment of the head goes together with the neck as the share together the important structures such as cranial nerves, sensory organs and major blood vessels. Headache is a very common symptom presented by patient during the assessment of the head. Other common symptoms the head and neck are change or loss of vision, eye pain, redness, tearing, double vision, hearing loss, earache, ringing in the ears, dizziness, vertigo, nosebleed, Sore throat, hoarseness, swollen cervical glands and enlarged thyroid gland.

Headache is defined as the pain in any region of the head. A patient complaining about headache will be asked to clarify on its location, severity, character, circumstances in which it occurs, remitting or exacerbating factors, associated manifestations and duration. Headache is subdivided into two main categories which are primary headache and secondary headache. The primary headache is said when it comes by its own, not a symptom of any diseases whereas secondary headache happens as a symptom to an underling medical condition. In fact, primary headache originates from over-activity of the structures of the head and the neck such as nerves, muscles, blood vessels and specific areas of the brain. The causes of secondary headache may be pregnancy, stroke, brain tumor, hypothyroidism and systemic infections. If a patient is complaining about headaches, we have to be careful and collect detailed information because it may be a sign of a very serious health conditions. **Migraine** is a form of on side headache with a severe pulsating sensation. Other types of primary headache include **cluster, tension and chronic daily headache.** A headache which is severe, persistent, occur regularly, does not improve with medication, accompanied with other clinical manifestations such as fever, confusion, sensory changes and neck stiffness need to seek for medical attention.

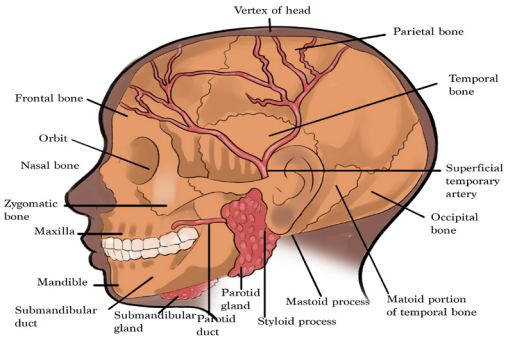
Interview guide when taking history of the head

- Ask the patient to allocate the area of pain or discomfort. Location and radiation patterns will allow the examiner to classify and to guide his or her diagnosis
- Is the headache severe and of slow or sudden onset? Guide the patient to rate the pain by explaining the rational of pain score from 0 to 10.
- How long does it last?
- Is it episodic? Does the headache recur at the same time every day?
- Chronic and recurring? Is there a recent change in pattern?
- Any associate factors such as nausea, vomiting, fever, confusion and so on? Nausea and vomiting are common in migraine but may be seen in brain tumor and subarachnoid hemorrhage.
- Ask about any unusual feeling before the occurrence of a headache. Weakness, dizziness, vision changes are some of the preliminary signs for some form of headache.
- Get to know about aggravating and alleviating factors. Sneezing, coughing, changing position may aggravate headache in case of acute sinusitis.

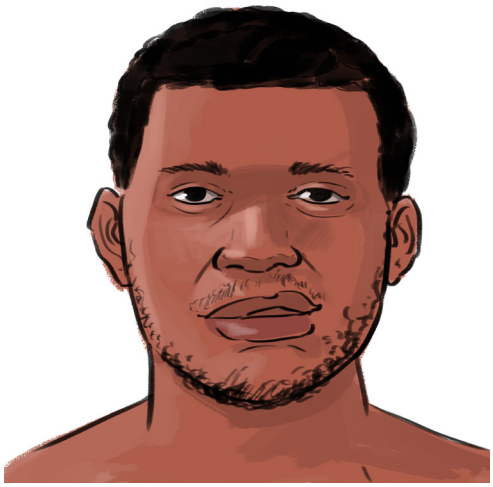
– Ask about personal means to manage the headache. If a patient is using medications for more than 2 days a week as a symptomatic treatment of a chronic headache, consider this situation as medication overuse.

– Family history is another important key to ask for to compare the patient's situation to his or her family member. Migraine is a good example of headache that runs in families.

4.1.2. Physical examination of the head



Anatomical structure of the head



Facial palsy causing asymmetry of the face

The physical assessment of the head involves the inspection and palpation of the parts of the head which in turn are named in accordance to the bone of the skull. We also assess the salivary glands: a pair of **parotid glands** located superficial to behind the mandible and submandibular sited deep to the mandible. The assessment of the head includes palpation of superficial temporal artery passing in front of the ear, it is easily identified to its pulsation.

To assess the head, we systematically follow this order: **hair, scalp, skull, face and the skin.** Remember to always ask the patient to remove head covers and hair pieces should be removed. You may note movable fragments of dandruff. Fine hair is observable during hyperthyroidism whereas coarse hair is seen during hypothyroidism. The tiny ovoid granules adhere to the hair may be lice eggs. For the scalp, displace the hair in several directions and search for scars, lumps, nevi and any other particularity. The redness and scaling may suggest seborrheic dermatitis or psoriasis whereas nevi that raises indicate melanoma. On the skull, observe the contour and its size. **Microcephaly** is an abnormally small head while macrocephaly is an abnormally large head. Consider any deformity, depression, lump or tenderness. Get to know normal irregularity of the skull such presence of fontanelles and sutures in infancy. The enlarged skull indicates hydrocephalus or Paget disease of the bone. Tenderness while palpating the skull suggests possible

trauma. For the face, check for patient's facial expression and contour. Note any identified asymmetry, involuntary movement, edema and mases. Look at the skin of the face and the head to objectivate any change in color, texture, thickness, hair distribution and lesions.

Self-assessment 4.1

1) What are the physical assessment techniques used to assess the head?
2) Name possible abnormalities which can be seen on the face during physical examination.
3) Conduct an history taking for a patient complaining about a headache.
4) Mr. M was riding a bicycle, abruptly he loses control and hits the border of the road. His neighbor took him to the nearest health center. During a complete physical assessment, the nurse realizes tenderness on the left parietal region.

a. What does tenderness mean?
b. Briefly list other important point to be assessed on the head.

5) An 18-year-old male college student wake up this morning complain about headache, weakness and perspiration which prevent him to attend class today. We took him to the school clinic for treatment, the nurse conducted an assessment and blood smear collection and realize that these symptoms are linked to malaria. She then provided a dose of analgesic and anti-malarial medication.

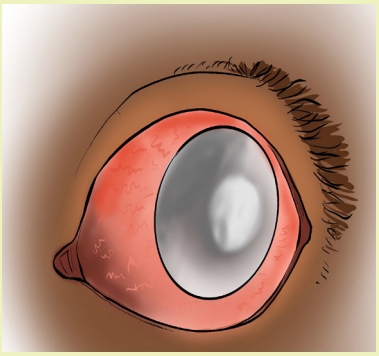
a. Which type of headache is appropriate for the above situation?
b. What are the possible causes of a headache depending on their types?
c. What will be your focal points when conducting an interview for someone with a headache?

4.2. Assessment of the eye

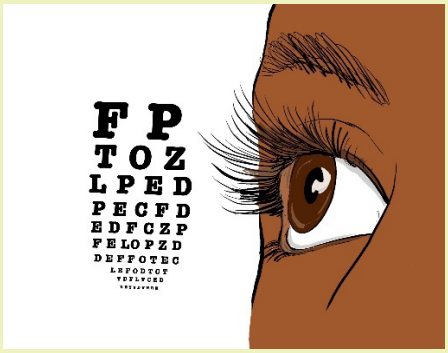
Learning activity 4.2



A



B



C

Observe image A, B and C and respond the following question

1) Describe the images A, B and C
2) Compare the eyes seen on the image B and C
3) What is the meaning of the letters illustrated on the picture C?

4.2.1. Overview of the assessment of the eye

The eye is our organ of sight. The visual system consists of the external tissues and structures surrounding the eye, the external and internal structures of the eye, the refractive media, and the visual pathway. The external structures are the eyebrows, eyelids, eyelashes, lacrimal system, conjunctiva, cornea, sclera, and extraocular muscles. The internal structures are the iris, lens, ciliary body, choroid, and retina.

The entire visual system is important for visual function. Light reflected from an object in the field of vision passes through the transparent structures of the eye and, in doing so, is refracted (bent) so that a clear image can fall on the retina. From the retina, the visual stimuli travel through the visual pathway to the occipital cortex, where they are perceived as an image.

4.2.2. Taking history

An eye assessment is a series of tests performed to assess vision and ability to focus on and discern an object. Failure to take eye history can lead to missing vision or life-threatening conditions. The structure of ophthalmological history taking is no different than for other systems; however, it is important to take particular note of the following:

Demographic data: Ask patient's name, age, sex, religion, disability, Patient's occupation, daily tasks and hobbies. During the initial observation, observe the patient's overall facial and ophthalmic appearance. The eyes should be symmetric and normally placed on the face. The globes should not have a bulging or sunken appearance.

Chief complaints: watering/discharge from the eyes, redness, pain, itching, burning sensation, foreign body sensation, loss of vision, double vision or swelling of an eyelid all are the common reasons for consultation.

History of present illness- mode of onset, Sudden or gradual. Eg: Sudden visual loss suggests retinal detachment, vitreous hemorrhage, or occlusion of the central retinal artery, duration, severity and progression of eye disease.

a. Past eye history

Ask for detail about any previous eye problems such as:

- **History of similar eye complaints in the past.** This is important in recurrent conditions such as herpes simplex keratitis, allergic conjunctivitis, uveitis and recurrent corneal erosions.
- **History of eye surgery or trauma.** It is important to ask about any ocular surgery in the past such as cataract extraction, muscle surgery, glaucoma, or retinal surgery
- **Other symptoms.** Ask whether the patient has any other specific eye symptoms.

b. General medical history

Ask about any current and past medical conditions such as diabetes, hypertension, arthritis, HIV, syphilis, asthma and eczema.

Family history: ask patient about familial predisposition of inheritable ocular disorders

It is important to ask the patient whether any other member of the family has a similar

condition or another eye disease. This can help to establish familial predisposition of inheritable ocular disorders like glaucoma, retinoblastoma or congenital eye diseases, diabetes and hypertension.

c. Medication history

Ask about present and past medications for both ocular and medical conditions as some medications are important in the etiology of ocular conditions.

It is also helpful to ask whether the patient has been able to use the medication as prescribed (their compliance). If a medication is ineffective, you want to know whether the patient is actually using the medication as prescribed. find out if access to medication prescribed is easy. Assess whether a cost or other concerns are a potential reason for non-compliance. There could also be practical issues, such as difficulty instilling eye drops or forgetting to do so. Do not forget to ask in a non-judgmental way about traditional/herbal medication use. Consider that many cold preparations contain a form of epinephrine (e.g., pseudoephedrine) that can dilate the pupil. Note the use of any antihistamine or decongestant, since these drugs can cause ocular dryness. In addition, specifically ask whether the patient uses any prescription drugs such as corticosteroids, thyroid medications, or agents such as oral hypoglycemics and insulin to lower blood glucose levels. Long-term use of corticosteroid preparations can contribute to the development of glaucoma or cataract.

d. Other history

Ask about any allergies to medications or other substances. Social history- ask the patient about smoking habit, illegal substances and alcohol. For children, the birth history (prematurity) and immunization status can be important.

4.2.3. Inspection of the eye

To maintain optimum vision, people need to have their eyes examined regularly throughout life. It is recommended that people under age 40 have their eyes tested every 3 to 5 years, or more frequently if there is a family history of diabetes, hypertension, blood dyscrasia, or eye disease (e.g., glaucoma). After age 40, an eye examination is recommended every 2 years. Examination of the eyes includes assessment of **the external structures, visual acuity (the degree of detail the eye can discern in an image), extraocular muscle movement, and visual fields (the area an individual can see when looking straight ahead).** Most eye assessment procedures involve inspection.

Eye should be examined from outside to inside in systematic approach as follow

a. External structure inspection

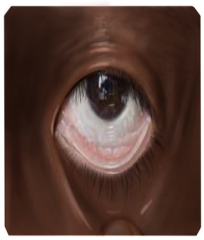
Assessment	Normal findings	Abnormal findings
1. Inspect the **eyebrows** for hair distribution and alignment and skin quality and movement (ask client to raise and lower the eyebrows).	Hair evenly distributed; skin intact eyebrows symmetrically aligned; equal movement.	Loss of hair; scaling and flakiness of skin Unequal alignment and movement of eyebrows.
Inspect the **eyelashes** for consistency of distribution and direction of curl.	Equally distributed; curled slightly outward	Turned inward
Inspect the **eyelids** for surface characteristics (e.g., skin quality and texture, position, lesions, crusting, redness, swelling, bruising or lacerations), position in relation to the cornea, ability to blink, and frequency of blinking. Inspect the lower eyelids while the client's eyes are closed.	Skin intact; no discharge; no discoloration, Lids close symmetrically, approximately 15 to 20 involuntary blinks per minute; bilateral blinking When lids open, no visible sclera above corneas, and upper and lower borders of cornea are slightly covered.	Redness, swelling, flaking, crusting, plaques, discharge, nodules, lesions, lids close asymmetrically, incompletely, or painfully Rapid, monocular, absent, or infrequent blinking, ptosis, ectropion, or entropion; rim of sclera visible between lid and iris.
Inspect **the palpebral conjunctiva** for color, texture, and the presence of lesions. The conjunctiva and sclera can be inspected by having the individual look up while retracting the upper or lower eyelid.	Transparent; capillaries sometimes evident; sclera appears white (darker or yellowish and with small brown macules in dark-skinned clients)	Jaundiced sclera (e.g., in liver disease); excessively pale sclera (e.g., in anemia); reddened sclera (marijuana use, rheumatoid disease); lesions or nodules (may indicate damage by mechanical, chemical, allergenic, or bacterial agents.

Inspect the **cornea** for clarity and texture. Ask the client to look straight ahead. Hold a penlight at an oblique angle to the eye, and move the light slowly across the corneal surface.	Transparent, shiny, and smooth; details of the iris are visible. In older people, a thin, grayish white ring around the margin, called arcussenilis, may be evident	Surface not smooth, arcussenilis in clients under age 40, iris may be difficult to see, scarring, milky line, localized opacity, foreign body, rust ring, abscess or laceration.
Inspect the **pupils** for color, shape, and symmetry of size. Assess each pupil's reaction to accommodation: Hold an object (a penlight or pencil) about 10 cm (4 in.) from the bridge of the client's nose and ask the client to look at that object while coming towards the tip of the nose. Observe the pupil response.	Black in color; equal in size; react to light– central and round, normally 3 to 7 mm in diameter; smooth border. Pupils constrict when looking at near object; pupils dilate when looking at far object. Normal accommodation is when the eyes constrict and converge towards the object directed to the tip of the nose. Pupils converge when near object is moved toward nose. To record normal assessment of the pupils, use the abbreviation **PERRLA** (pupils equally round and react to light and accommodation).	Cloudiness, may be unequal, dilated or constricted, not reacting to light, irregular not central. Absent responses One or both pupils fail to constrict, dilate, or converge.

After the inspection, palpation of the orbital rim may also be desirable, depending on the presenting signs and symptoms. The sclera and conjunctiva are the only parts to be easily assessed. Vision tests and ophthalmoscopic test need an advanced level of practice. Ophthalmoscope is used to examine the anterior chamber, lens, vitreous and internal surface of the retina.

Below are the images illustrating some common features of the eyes

Table 4.2 1 Common features of the eye problems

Normal eyes	Exophthalmos	Icterus	Conjunctiva redness
			

b. . Visual acuity examination

Visual acuity is the eye ability to detect fine details and is the quantitative measure of the eye's ability to see an in-focus image at a certain distance. The commonly used tool for visual acuity is the Snellen Chart. Document the patient's visual acuity before the patient receives any ophthalmic care. Position the person on a mark exactly 20 feet or 6 meters away from the Snellen eye chart. If the person wears glasses or contacts, leave them on. Cover one eye at a time during the test. Ask the person to read down the lines of the chart to the smallest line of letters possible. Record the result using the numeric fraction at the end of the last successful line read. Indicate whether any letters were missed and if corrective lenses were worn (e.g., "Left eye, 20/30- 2, with contacts"). Next ask the patient to cover the other eye, and repeat the process. Normal visual acuity is 20/20. The numerator indicates the distance the person is standing or sitting from the chart; the denominator is the distance at which a normal eye can read the particular line. The larger the denominator the poorer the vision. A vision poorer than 20/30 need to be referred to the ophthalmologist. Legal blindness is defined as the best-corrected vision in the better eye of 20/200 or less.

Self-assessment 4.2

1) In which condition a patient may manifest yellow eyes?

a. Bacterial conjunctivitis
b. Liver diseases
c. Trauma of the eyes
d. Congenital defect of the eyes

2) The normal finding of the pupil examination is:

a. Pupil should be equal, round, reactive to light and accommodate

b. Pupil should be equal, square, reactive to light and accommodate
c. Pupil are white, dry, reactive to light and accommodate
d. Pupil is intact, pink, ovoid and reactive to light

3) Increased intraocular pressure may occur as a result of

a. Edema of the corneal stroma.
b. Dilation of the retinal arterioles.
c. Blockage of the lacrimal canals and ducts.
d. Increased production of aqueous humor by the ciliary process

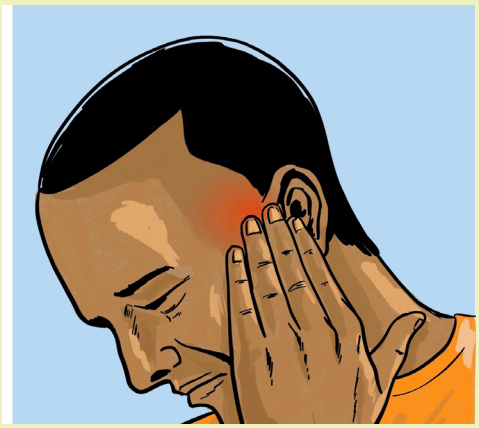
4) What are the normal findings when assessing the eyebrows?

5) Which parts of the eyes can we assess by using inspection?

6) Why do we ask for other health conditions to a patient consulting for eye problem?

4.3. Assessment of the ear

Learning assessment 4.3



A



B

Observe the image A and B and respond the following questions

1) What is the attitude of person in image A and what do you think may be the cause

2) Give the similarities of image A and B

3) What is the name and importance of material used by Doctor in image B?

4.3.1. Overview of the assessment of the ear

The auditory system is composed of the peripheral auditory system and the central auditory system. The peripheral system includes the structures of the ear itself: the external, middle, and inner ear. This system is concerned with the reception and perception of sound. The inner ear functions in hearing and balance. The central system integrates and assigns meaning to what is heard. This system includes the vestibulocochlear nerve (Cranial nerve 8) and the auditory cortex of the brain. The brain and its pathways transmit and process sound and sensations that maintain a person's equilibrium. The role of the external and middle portion of the ear is to conduct and amplify sound waves from the environment. This portion of sound conduction is termed air conduction. Problems in these two parts of the ear may cause conductive hearing loss, resulting in a decrease in sound intensity and/or a distortion in sound. Disturbances in equilibrium can impair coordination, balance, and orientation. Damage to or an abnormality of the inner ear or along the nerve pathways results in sensorineural hearing loss. Sensorineural hearing loss may affect the ability to understand speech or cause complete hearing loss. Impairment within the auditory pathways of the brain causes central hearing loss. This type of hearing loss causes difficulty in understanding the meaning of words that are heard.

4.3.2. History taking

An ear history taking it is done to screen for ear problems, such as hearing loss, ear pain, discharge, lumps, or objects in the ear. These problems may be due to infection, too much earwax, or an object like a bean or a bead.

The following issues should be included:

- Classic symptoms of ear disease: deafness, tinnitus, discharge (otorrhoea), pain (otalgia) and vertigo.
- Previous ear surgery, or head injury.
- Family history of deafness.
- Systemic disease (eg., stroke, multiple sclerosis, cardiovascular disease).
- Ototoxic drugs (antibiotics (eg, gentamicin), diuretics, cytotoxics).
- Exposure to noise (eg, pneumatic drill or shooting).
- History of atopy and allergy in children.

4.3.3. Inspection of the ear

a. Inspecting the external ear

Inspect the external ear before examination with an otoscope/auriscope. Swab any discharge and remove any wax. Look for obvious signs of abnormality.

- Size and shape of the pinna.
- Extra cartilage tags/pre-auricular sinuses or pits.
- Signs of trauma to the pinna.
- Suspicious skin lesions on the pinna, including neoplasia.
- Skin conditions of the pinna and external canal.
- Infection/inflammation of the external ear canal, with discharge.
- Signs/scars of previous surgery.

b. Inspecting the ear canal and eardrum

The inspection of the ear canal and the tympanic membrane need anotoscope/ auriscope with its own light source to examine the ear. The examination technique involves grasping the pinna and pulling it up and backwards (posteriorly and superiorly), which helps to straighten the ear canal and for inspection of the tympanic membrane. For the infants, only pull the pinna downwards and backwards to be able to visualize into the ear. Enter the ear gently to avoid possible trauma, select a correct size of speculum to achieve the best view and detach it from the otoscope after examination for appropriate cleaning.

Note the condition of the canal skin, and the presence of wax, foreign tissue, or discharge. The mobility of the eardrum can be evaluated using a pneumatic speculum, which attaches to the otoscope. The drum should move on squeezing the balloon.

For the inspection of the ear drum, move the otoscope in order to see several different views of the drum. The drum is roughly circular (~1 cm in diameter). The normal drum is translucent with light-gray color or a shiny pearly-white. The common pathological conditions related to the ear include: perforations of the drum (note size, site and position), tympanosclerosis, middle-ear effusion, retractions of the drum, and hemotympanum (blood in the middle ear).

Check facial nerve function if ear pathology is serious.

4.3.4. Physical exam: Palpation

Palpate the pinna to looking for swelling or nodules and check for tenderness. Press the tragus towards the ear canal. Palpate around the ear for pre and post auricular, suboccipital and superior jugular lymph nodes and parotid glands.

4.3.5. Basic hearing test: Tuning fork tests: Weber's test and Rinne's test

A patient with normal hearing should hear equally as well in both ears.

a. Weber ‘s test

This test is performed to assess bone conduction by examining the lateralization (sideward transmission) of sounds. The vibrating fork is placed in the middle of the forehead and the patient is asked whether any sound is heard and, if so, whether it is equally heard in both ears or not. In a patient with normal hearing, the tone is heard centrally **(Weber negative).** If the patient has unilateral hearing loss and the sound is louder in the weaker ear, this suggests a conductive hearing loss mostly happening in otosclerosis, otitis media, perforation of the eardrum, and cerumen. If the sound is louder in the better ear, it is more likely to be a sensorineural hearing loss **(Weber positive).** (See Figure 4.3 1)

b. Rinne’s test

Rinne’s test used to compare air conduction to bone conduction: Hold the handle of the activated tuning fork on the mastoid process of one ear, A until the client states that the vibration can no longer be heard. Immediately hold the still vibrating fork prongs in front of the client’s ear canal. Making sure that it is not touching any hair. Ask whether the client now hears the sound. Sound conducted by air is heard more readily than sound conducted by bone. The tuning fork vibrations conducted by air are normally heard longer. This is a positive Rinne’s test. If the Rinne’s test is positive and there is hearing impairment, it is a sensorineural hearing loss and not a conductive problem. If there is a negative Rinne’s test with hearing loss, then the problem is a conductive. (See Figure 4.3 2 and Figure 4.3 3)

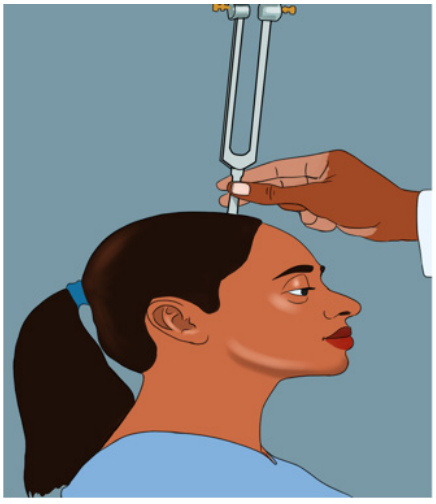


Figure 4.3 1 Placing the base of the tuning fork on the client’s skull (Weber’s test)



Figure 4.3 2 Placement of base of the tuning fork on the mastoid.



Figure 4.3 3 Tuning fork prongs placed in front of client's ears

4.3.6. Special population

a. Infant

To assess gross hearing, ring a bell from behind the infant or have the parent call the child's name to check for a response. Newborns will quiet to the sound and may open their eyes wider. By 3 to 4 months of age, the child will turn head and eyes toward the sound.

b. Children

To inspect the external canal and tympanic membrane in children less than 3 years old, pull the pinna down and back. Insert the speculum only 0.6 to 1.25 cm. Perform routine hearing checks and follow up on abnormal results.

In addition to congenital or infection-related causes of hearing loss, noise-induced hearing loss is becoming more common in adolescents and young adults as a result of exposure to loud music and prolonged use of headsets at loud volumes.

Teach that music loud enough to prevent hearing a normal conversation can damage hearing.

4.3.7. Identification of client's problems

While most people know about hearing loss, many other conditions can affect the ears too. Some are just irritating, but others can cause discomfort. What's more, these diseases can have a knock-on effect on your hearing or exacerbating any existing hearing loss that you may have.

a. Hearing loss

Conductive hearing loss is the result of interrupted transmission of sound waves through the outer and middle ear structures. Possible causes are a tear in the tympanic membrane or an obstruction, due to swelling or other causes, in the auditory canal.

Sensorineural hearing loss is the result of damage to the inner ear, the auditory nerve, or the hearing center in the brain.

Mixed hearing loss is a combination of conduction and sensorineural loss.

b. Otalgia (ear pain)

Pain that originates from the ear is called primary otalgia, and the most common causes are **otitis media and otitis externa.** Examination of the ear usually reveals abnormal findings in patients with primary otalgia. Pain that originates outside the ear is called secondary otalgia, and the etiology can be difficult to establish because of the complex innervation of the ear. The most common causes of secondary otalgia include **temporomandibular joint syndrome and dental infections** because the nerves innervating the ear have a shared distribution to include the head, neck, chest, and abdomen. The ear is innervated by several sensory nerves. The auricle is affected by cranial nerves V, VII, X, the external auditory meatus and canal by cranial nerves V, VII, and X; the tympanic membrane by cranial nerves VII, IX, and X; and the middle ear by cranial nerves V, VII, and IX. Irritation of any portion of these nerves can result in otalgia.

Primary otalgia is more common in children, whereas secondary otalgia is more common in adults. History and physical examination usually lead to the underlying cause.

c. External ear problem

Among the external ear problem, atresia defined as absence or closure of external ear canal being a birth defect, and accompanied by auricle malformation which is characterized by Conductive hearing loss. On clinical examination, usually the auricle is malformed and the external auditory canal is not patent or significantly narrowed.

Necrotizing external otitis

Infection involving primarily bony and cartilaginous external auditory canal and adjacent structures. It occurs usually in immunocompromised persons, especially elderly patients with diabetes mellitus, and is often initiated by self-inflicted or iatrogenic trauma to the external auditory canal. Clinically, patients complain of severe otalgia that worsens at night, and otorrhea. Otoscopic findings include granulation tissue in the external auditory canal, particularly at the bony-cartilaginous junction. On audiology there is conductive hearing loss.

d. Middle ear problem

- **Traumatic opacified middle ear**

Trauma to the temporal bone is usually the result of a blunt head injury. Patients with temporal bone fracture may present at the time of trauma with evidence of basilar skull fracture, such as battle sign, raccoon eyes, or hemotympanum. In

addition, they may complain of hearing loss or dizziness. If a temporal bone fracture initially goes unrecognized, delayed presentation may involve cerebrospinal fluid (CSF) otorrhea, hearing loss, or symptoms related to cranial nerve VII dysfunction.

- **Non-traumatic opacified middle ear:** Eustachian tube dysfunction (secretory otitis)

Persistent mucoid or serous middle ear effusion, in the absence of acute inflammation. Eustachian tube dysfunction is well known to be related in the pathogenesis of secretory otitis. Secretory otitis is the most common disease in children, sometime it can be seen in adults. In children, this can occur purely from enlarged adenoids, with no pain or bacterial infection. In adults, secretory otitis may be found when a growing tumor in the nasopharynx blocks Eustachian tube opening.

It is manifested by fluid filling the middle ear cavity causes tympanic membrane bulging with no signs of acute infection (redness, pain, oedema). Over time, middle ear fluid can become very thick and glue-like ("glue ear"), which increases the likelihood of conductive hearing loss.

- **Non-traumatic opacified middle ear:** *acute inflammation/infection*

Acute middle ear infection (acute otitis media) usually presenting with typical clinical image and in most cases not requiring imaging.Clinical manifestation include earache, fever, pain, otorrhea, conductive hearing loss. On otoscopy tympanic membrane is red and bulging.Both from clinical and radiological points of view, it is important to differentiate between acute otitis media and secretory otitis.

Secretory otitis means fluid in the middle ear cavity without signs or symptoms of infection; this is usually caused when the Eustachian tube patency is compromised and fluid is trapped in the middle ear. Signs and symptoms of acute otitis media occur when effusion in the middle ear becomes infected.

- **Non-traumatic opacified middle ear:** *chronic inflammation/infection*

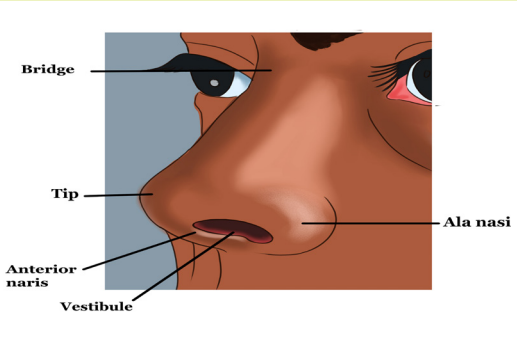
When the inflammation persists at least 6 weeks and is associated with otorrhea through a perforated tympanic membrane, chronic otitis media (COM) is diagnosed. Symptoms include conductive hearing loss, sometimes pain, vertigo, otorrhea.

Self-assessment 4.3

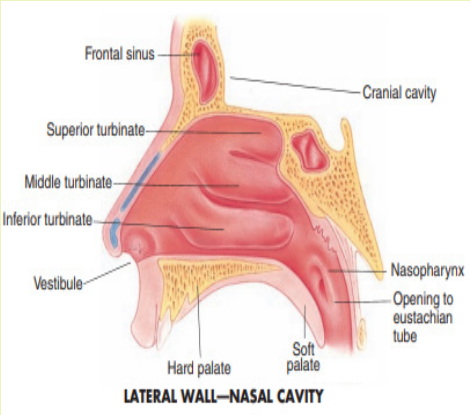
1) Enumerate possible signs and symptoms of a patient with ear problem
2) Which interview questions will you as to a patient with otalgia?
3) Distinguish conduction hearing loss to sensorineural hearing loss.
4) Elaborate possible clinical manifestations of acute otitis media.
5) Which tests used to measure hearing capacity of a patient

4.4. Assessment of the nose

Learning activity 4.4



A



B

1) Compare image A and B.
2) Which signs a patient with nose problems will manifest?
3) What are the physical examination used on the nose?

4.4.1. Nose assessment overview

The nose is an organ for **olfactory sense.** Mostly, the assessment of the nose goes together with sinuses but our emphasis will be on the nose. The most common patients' presenting signs and symptoms of the nose are **rhinorrhea, nasal congestion, loss of smell, pain, itching and epistaxis.** Rhinorrhea is a drainage from the nose while nasal congestion is sense of obstruction within the nose. These two symptoms can be followed by sneezing, watery eye, throat discomfort and itching of the eyes, nose and throat. They are caused by viral infection or rhinitis more precisely; itching is due to allergic causes. Periodic occurrence and presence of environmental factors of these symptoms suggest allergic rhinitis. Bleeding from the nose known as **epistaxis** can be confused to the bleeding from paranasal and nasopharynx but the latter passes in the throat and continue to the mouth or in the esophagus.

4.4.2. History taking

To conduct patient history on the nose, here are guiding questions:

- Do symptoms occur when colds are prevalent and last for less than seven days?

- Do the symptoms keep coming in the same period of the year (e.g: when pollen is in the air)?
- Are symptoms triggered by a specific animal (e.g: pet) at home or environmental exposure (e.g: dust)
- Ask about remedies, how long is it? And its effectiveness.
- Ask if any drug was used to control these symptoms.
- Get to know if nasal congestion comes after upper respiratory infection? In this condition the patient will experience purulent nasal discharge, loss of smell, facial pain aggravated by bending forwards, ear pressure, cough and fever.
- Ask if the patient is taking any medication including oral contraceptives, alcohol and cocaine
- Get to know if nasal congestion is only on one side or both. Sometimes, deviated nasal, nasal polyp, foreign body or cancer in that area.
- In case of epistaxis, ask the patient to pinpoint the source of bleeding and differentiate coughing of blood (hemoptysis) to vomiting of blood (hematemesis) because they all have different causes. The local causes of epistaxis are from trauma, inflammation, drying of nasal mucosa, tumor and foreign body in the nose.
- Ask the patient if epistaxis is a recurrent issue, and if there is easy bruising or bleeding elsewhere. Some medications such as anticoagulants, non-steroid anti-inflammatory drugs as well as diseases of coagulation and vascular diseases contribute to epistaxis.

4.4.3. Physical assessment of the nose

In the normal condition the breathing process starts when air enters the anterior naris on both sides then reaches the vestibule and continues to the pharynx and larynx to the trachea down to the lung. The physical assessment of the nose involves inspection and palpation. Inspect the external parts of the nose for skin status, sign of inflammation and symmetry. Consider any asymmetry or deformity of the nose. It is common to find a deviated lower septum and it is easily detected during inspection. With a gentle pressure on the tip of the nose, palpate lightly in the normal condition the nostrils will widens. In case of tenderness on the tip of the nose, be gentle to manipulate the nose as little as possible.

To check for nasal obstruction, press the ala nasi towards the nasal septum and ask the patient to breathe in, and repeat he same to the other side then note any degree of obstruction. To visualize the inner parts of the nose, use an otoscope with the largest ear speculum. Ask extend his or her neck and introduce the speculum into the vestibule each nostril and avoid touching the sensitive nasal septum. Enter the otoscope posteriorly then upwards in short steps to inspect the inferior and

middle turbinate and nasal septum. Normally the nasal mucosal lining the septum and turbinate is redder than oral mucosa. During examination, indicates the color, swelling, bleeding and exudate.

In case of exudate reports related characteristic such as clear, mucopurulent or purulent. In viral rhinitis the mucosa will be increasingly red and swollen whereas in allergic rhinitis the mucosa will be pale, blue or red. The epistaxis commonly originates to the lower anterior of nasal septum, so assess for any deviation, inflammation, perforation and ulceration. Inspect may objectivate fresh blood or clots while septal perforation may be due to trauma, surgery and intranasal use of cocaine or amphetamine. The latter two medications are also responsible for septal ulceration.

The saclike growth made of inflamed tissue which inhibit normal flow of air is known as nasal polyps sometimes are seen during inspection. Nasal polyps are identified in case of allergic rhinitis, aspirin sensitivity, asthma and chronic sinus infection. Rarely, the cancerous tumors found in the nasal cavity are linked to tobacco exposure or long-term toxin inhalation.

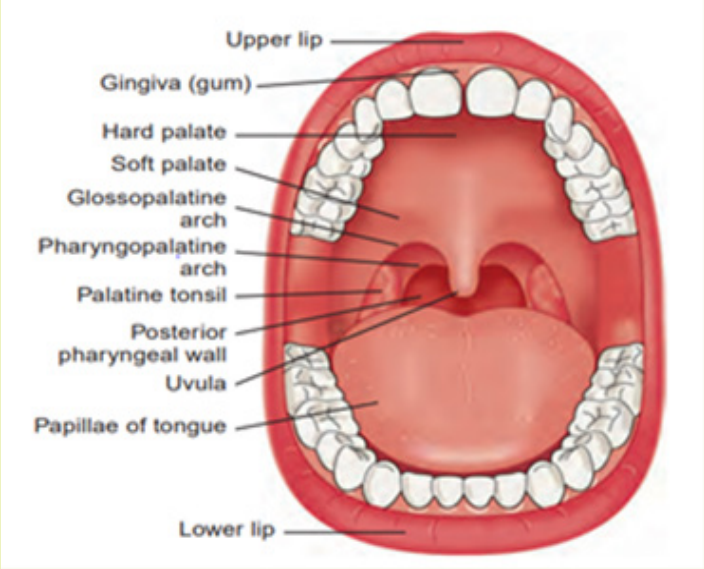
Remember to discard or clean and disinfect used speculum appropriately as per your institutional policy. Palpate the frontal sinuses on both sides under the bony brows while doing so, do not apply pressure on the eyes. Palpate also the maxillary sinuses located below the orbits downwards to the length of the nose. In case of tenderness in these sinuses associated with facial pain, pressure or fulness, purulent nasal discharge, nasal obstruction, smell difficulties suggest an acute bacterial rhinosinusitis involving frontal and maxillary sinuses.

Self-assessment 4.4

1) List 5 common causes of consultation of the nose
2) Which finding can we have while assessing the nose using otoscope?
3) State the questions you will ask a patient with rhinorrhea as chief complain?
4) Mention the causes of epistaxis

4.5. History taking of the mouth and pharynx

Learning activity 4.5



1) Which parts of the body here illustrated?
2) Enumerate at least 5 common consultation problems of the mouth.
3) Which technique of physical assessment will you use to assess the mouth and pharynx?

4.5.1. Review of anatomy and physiology of the mouth and pharynx

The mouth is considered as organ of taste. In anatomical position the lips made as muscular folds around the mouth, they are the only part of the mouth seen outside. When the lips are opened, we immediately see the teeth surrounded by the gingiva. The teeth are connected to maxillary and mandible bones in form of arch. The gingiva is pale in light skinned people; it is influenced by the individual level of melamine pigmentation which makes it brown to darker in black people. In the oral cavity seen when mouth is open, there is the tongue, hard and soft palate, uvula and two tonsils. The upper surface of the tongue present papillae which gives a rough surface, some of the papillae are a bit red than others. In normal circumstance, the tongue may be covered by a thin layer of white coat. On the lower surface of the tongue, there are no papillae. Just looking at that surface, we find midline lingual frenulum which attach the tongue to the floor of the mouth and the ducts of submandibular.

The paired sublingual glands lie just under the floor of the mouth mucosa.

Above and behind the tongue, there is an arch formed by anterior and posterior pillars, the soft palate and uvula. The posterior pharynx is visible behind the soft palate and the tongue. The uvula known as a hanged lobe in the middle of the posterior border of the soft palate. Tonsils are often smaller even absent in adults. The buccal mucosal covers the internal surface of the cheeks. The parotid ducts open onto the buccal mucosal near the upper second molar.

4.5.2. Physical examination of the mouth and pharynx

The physical assessment of the mouth and pharynx involve **inspection and palpation.** The examiner observes the lips for color, moisture, ulcers, cracking or trauma and note any deviance from normal anatomy. By using a new tongue depressor and bright light in hand, ask the patient to open the mouth widely. Inspect the gums for bleeding, ulcers, or swelling, and check to see if any teeth are missing, discolored, abnormal shaped, or loose. Redness of the gingiva and swelling of the interdental papillae are observed during **gingivitis.** Carefully inspect the buccal mucosa for ulcers, nodules, or white patches. To inspect the tongue, ask the patient to protrude the tongue and move it from side to side, assessing for symmetry, and inspect the color and texture of its dorsal surface. **Asymmetric protrusion of the tongue** suggests the lesion of hypoglossal nerve. **Oral cancers** most commonly develop on the sides and base of the tongue. Men of greater than 50 years, smokers and alcohol consumer are at high risk of tongue and oral cavity cancers. Have the patient touch the tongue to the hard palate, and carefully inspect its undersurface and the floor of the mouth. Using a gloved hand, gently grasp the tip of the tongue with a square piece of gauze and move it from side to side, inspecting carefully for ulcerations, plaques, masses, or discoloration.

To inspect the pharynx, the tongue will be back inside, have the patient open wide and say “ah” or yawn. If the pharynx cannot be seen clearly, have the patient repeat this maneuver while you firmly press down on the tongue with the tongue depressor. Take care not to gag the patient. Observe for the soft palate rise because it indicates the normal functioning of vagus nerve. Inability to rise the soft palate and deviated uvula are the signs of **vagus nerve paralysis**. Inspect the uvula, anterior and posterior pillars, tonsils (if present), and pharynx. When the patient is saying “Ah” Check for symmetry, discoloration, ulcerations, swelling, masses, or tonsillar exudate.

Self-assessment 4.5

1) While making oral cavity assessment, which findings will indicate you that the patient has gingivitis?
2) Mention at least 3 risk factors to develop oral cancer
3) Which features will you note on the patient's lips during inspection?
4) Draw an illustration of the oral cavity with all the parts.

4.6. Skin assessment

Learning activity 4.6

Observe the images below and respond the questions that follow



A



B



C

1) Compare the images A, B and C
2) Do you think the skin in image b is normal? Explain your answer
3) What are the characteristics of a normal skin?

Assessment of the skin involves **inspection and palpation**. The entire skin surface may be assessed at one time or as each aspect of the body is assessed. In some instances, the nurse may also use the olfactory sense to detect unusual skin odors.

4.6.1. History taking of the skin

Ask if the client has any history of the following: pain or itching; presence and spread of lesions, bruises, abrasions, pigmented spots; previous experience with skin problems; associated clinical signs; presence of problems in other family members; related systemic conditions; use of medications, lotions, home remedies; excessively dry or moist feel to the skin; tendency to bruise easily; association of the problem to season of year, stress, occupation, medications, recent travel, housing, and so on; recent contact with allergens (e.g., metal paint).

4.6.2. Physical examination of the skin

The entire skin surface should be examined as well as hair, nails and mucosal surfaces. Explain the necessity of complete examination to the patient. Use an appropriate light source and magnification. Identify the presenting complaint and incidental skin conditions. Always patient privacy should be respected during examination. Assess distribution, morphology and arrangement i.e. the number, size and color of skin lesions, which sites are involved, their symmetry, shape and arrangement. What types of lesions are present?

4.6.3. Inspection

- Inspect **skin color,** (Pallor, cyanosis, jaundice, erythema) (best assessed under natural light and on areas not exposed to the sun).
- Inspect **uniformity** of skin color. Generally, the skin must be uniform except in areas exposed to the sun; areas of lighter pigmentation (palms, lips, nail beds) in dark-skinned people. Areas of either hyperpigmentation or hypopigmentation indicate some abnormalities.
- Assess **edema,** if present (i.e., location, color, temperature, shape, and the degree to which the skin remains indented or pitted when pressed by a finger). Measuring the circumference of the extremity with a millimeter tape may be useful for future comparison.
- Inspect, palpate, and describe **skin lesions.** Apply gloves if lesions are open or draining. Palpate lesions to determine shape and texture. Freckles, some birthmarks that have not changed since childhood, and some longstanding vascular birthmarks such as strawberry or port-wine hemangiomas, some flat and raised nevi; no abrasions or other lesions.
- Touch the skin to palpate individual lesions and more diffuse rashes, noting surface and deep characteristics. Does the lesion involve epidermis, dermis? If scaly, does the surface flake off easily? If crusted, what is underneath?

- Look carefully for signs of systemic disease, such as xanthomas (hyperlipidaemia), café-au-lait macules (neurofibromatosis), acanthosisnigricans (insulin resistance) etc.
- **Various interruptions in skin integrity;** irregular, multicolored, or raised nevi, some pigmented birthmarks such as melanocystic nevi, and some vascular birthmarks such as cavernous hemangiomas. Even these deviations from normal may not be dangerous or require treatment.
- **Observe and palpate skin moisture.** Moisture in skin folds and the axillae (varies with environmental temperature and humidity, body temperature, and activity) Excessive moisture (e.g., in hyperthermia); excessive dryness (e.g., in dehydration).
- Palpate skin temperature. Compare the two feet and the two hands, using the backs of your fingers. Generalized hyperthermia (e.g., in fever); generalized hypothermia (e.g., in shock); localized hyperthermia (e.g., in infection); localized hypothermia (e.g., in arteriosclerosis)
- Note **skin turgor** (fullness or elasticity) by lifting and pinching the skin on an extremity or on the sternum. When pinched, skin springs back to previous state (is elastic); may be slower in older adults Skin stays pinched or tented or moves back slowly (e.g., in dehydration). Count in seconds how long the skin remains tented.
- **Examine the hair and nails.**
- Document findings in the client record using forms or checklists supplemented by narrative notes when appropriate. Draw location of skin lesions on body surface diagrams.

Common causes of skin disorders include: bacteria trapped in skin pores and hair follicles, fungus, parasites, viruses, a weak immune system, contact with allergens, irritants, or another person's infected skin, genetic factors, sun exposition, systemic conditions with skin effect such as thyroid, immune system, kidneys and so on.

4.6.4. Lifespan considerations

a. Infants

Physiological jaundice may appear in newborns 2 to 3 days after birth and usually lasts about 1 week. Pathologic jaundice, or that which indicates a disease, appears within 24 hours of birth and may last more than 8 days. Newborns may have milia (whiteheads), small white nodules over the nose and face, and vernixcaseosa (white cheesy, greasy material on the skin). Premature infants may have lanugo, a fine downy hair covering their shoulders and back.

In dark-skinned infants, areas of hyperpigmentation may be found on the back, especially in the sacral area. Diaper dermatitis may be seen in infants. If a rash is present, inquire in detail about immunization history.

Assess skin turgor by pinching the skin on the abdomen.

b. Children

Children normally have minor skin lesions (e.g., bruising or abrasions) on arms and legs due to their high activity. Lesions on other parts of the body may be signs of disease or abuse, and a thorough history should be taken. Secondary skin lesions may occur frequently as children scratch or expose a primary lesion to microbes. With puberty, oil glands become more productive, and children may develop acne. Most persons ages 12 to 24 have some acne.

Measles is a highly infectious, airborne caused by morbilivirus. It is very prevalent in babies who are too young to be vaccinated, pregnant people, and others who did not get vaccine. One symptom of measles is a red or brown rash that spreads down the body. Other symptoms include a fever, watery eyes and a runny nose, a cough, and small reddish spots inside the mouth. There is no cure, but treatment tend to address the symptoms and monitor to prevent complications.

Impetigo defined as a contagious bacterial infection is one of the most common skin infections in young children. It usually causes itchy sores and blisters to appear around the mouth and elsewhere on the face. These sores then burst and leave a crust. The crust dries and leaves a red mark that fades without scarring. Treatment usually involves an antibiotic.

Cellulitis is a bacterial infection in the deeper layers of the skin. It develops quickly and can spread rapidly throughout the body. The affected skin may be red, swollen, hot, and painful or tender. Cellulitis is most common in the legs but can occur anywhere in the body. Severe cellulitis may be life threatening, and the treatment generally involves antibiotics.

Acne, the most common skin disorder, can be a source of anxiety for every teen, caused by blocked hair follicles and sebaceous glands of the skin, often triggered by hormonal changes. Acne affects mostly the face and sometimes the back and chest. Acne needs to be treated by a dermatologist because untreated forms cause permanent scars and dark facial spots.

Atopic dermatitis is one of the most common forms of eczema seen in children. The exact cause of atopic dermatitis is not known, possibly it involves genetics, the environment, and/or the immune system. Atopic dermatitis can appear on the face especially in infants, hands, feet and folds of the skin. Clinically, the skin looks dry, scaly and itchy skin are the norm, and constant scratching may lead to a thickened area. Topical steroids are often used to control the symptoms.

Cutaneous candidiasis caused by overgrowth of the Candida albicansis manifested as lesions or small pustules. Candidiasis typically develops in skin folds, such as the armpit or around the groin, sometimes affect the face. People can usually prevent Candidiasis by improving their skin hygiene and avoiding

the overuse of antibiotics. The treatment consist of antifungal and corticosteroid creams.

c. Older adults

Changes in white skin occur at an earlier age than in black skin. The skin loses its elasticity and develop wrinkles. Wrinkles first appear on the skin of the face and neck, which are abundant in collagen and elastic fibers. The skin appears thin and translucent because of loss of dermis and subcutaneous fat.

The skin is dry and flaky because sebaceous and sweat glands are less active. Dry skin is more prominent over the extremities. The skin takes longer to return to its natural shape after being tented between the thumb and finger. Due to the normal loss of peripheral skin turgor in older adults, assess for hydration by checking skin turgor over the sternum or clavicle. Vitiligo tends to increase with age and is thought to result from an autoimmune response which trigger loss of skin pigmentation. Vitiligo generally causes white patches to appear on the skin, usually in areas exposed to sunlight, it is more remarkable in dark skinned people and currently no cure for vitiligo.

Shingles or Herpes Zoster results in a red, blistered rash that may wrap around the trunk or appear anywhere on your body. Other signs and symptoms include fever, fatigue and headache. Shingles is caused by the same virus that causes chickenpox - the varicella-zoster virus. People who suffered from chickenpox are at risk for shingles as the chickenpox virus lies dormant in their nervous system for years. The treatment of measles is symptomatic, the preventive measure is a vaccine called measles, mumps, rubella (MMR) vaccine.

Skin cancer involves uncontrollable skin cells growth. We have several types of skin cancer but common ones are basal cell carcinoma, squamous cell carcinoma and melanoma. Early recognition of cancer may allow its effective treatment. These cancers tend to occur after prolonged exposure to the sun. Darker skin produces more melanin, which gives the skin more protection from harmful sun rays. The Basal cell carcinoma which is the most common skin cancer. It typically develops on the neck, arms, or head but can affect any area of the body. In a person with lighter skin, basal cell carcinoma may appear as a pink, round bump or patch. In someone with darker skin, the bump may be brown or black and may look like a common mole.

Squamous cell carcinoma is the second most common type of skin cancer. The skin appears dry, scaly, patches called actinic keratoses. The late diagnostic will let it grow deeper into the skin and cause disfigurement. People with lighter skin tend to develop this cancer in areas often exposed to the sun whereas in darker skinned, it affects the legs, genitals, and anus. It is a good idea to consult for any lesion that grows, changes, bleeds or looks unusual in any other way.

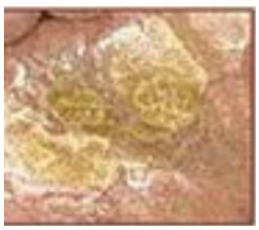
Melanoma is the most serious of the skin cancers because it spreads most easily to other parts of the body. It is can develop from a mole or another pigmented area of skin. If any mole is asymmetrical, has ragged edges or an uneven color, or changes in size, there is a need for medical attention. Melanoma may be harder to identify in darker skinned people, so checking carefully is important. Remember to include the toenails and fingernails, as this type of cancer is more common in these areas for People of color. The treatment of cancer involves radiotherapy, surgery, and chemotherapy.

4.6.5. Specific test of the skin

Specialized techniques used in examination of the skin include:

- Dermoscopy for pigmented lesions to diagnose melanoma.
- Skin biopsy for histology and direct immunofluorescence.
- Patch tests to identify type 4 contact hypersensitivity reactions.
- Skin scrapings or nail clippings for mycology (fungal infections).
- Wood's light (long wave UVA) examination for pigmentary changes and fluorescence resulting from certain infections.

Table 4.6 1How to describe a skin lesion

SKIN LESION	DESCRIPTION	IMAGE
Macule	flat lesion less than 1 cm, without elevation or depression	
Patch	flat lesion greater than 1 cm, without elevation or depression	
Plaque	flat, elevated lesion, usually greater than 1 cm	

Papule	elevated, solid lesion less than 1 cm	
Nodule	elevated, solid lesion greater than 1 cm	
Vesicle	elevated, fluid-filled lesion, usually less than 1 cm	
Pustule	elevated, pus-filled lesion, usually less than 1 cm	
Bulla	elevated, fluid-filled lesion, usually greater than 1 cm	

Other common skin images with different pathology

Acne	Eczema	Shingles	Contact dermatitis	Skin melanoma
				

4.6.6. Preventing skin disorders

Certain skin disorders aren't preventable, including genetic conditions and some skin problems due to other illnesses. However, it's possible to prevent some skin disorders by:

- Washing hands with soap and warm water frequently.
- Avoid direct contact with the skin of other people who have an infection.
- Clean things in public spaces, such as gym equipment, before using them.
- Don't share personal items, such as blankets, hairbrushes, or swimsuits.
- Sleep for at least seven hours each night.
- Drink plenty of water.
- Avoid excessive physical or emotional stress.
- Eat a nutritious diet.
- Get vaccinated for infectious skin conditions, such as chickenpox.

Noninfectious skin disorders, such as acne and atopic dermatitis, are sometimes preventable. Prevention techniques vary depending on the condition. Here are some tips for preventing some noninfectious skin disorders:

- Wash face with a gentle cleanser and water every day.
- Use moisturizer.
- Avoid environmental and dietary allergens.
- Avoid contact with harsh chemicals or other irritants.
- Sleep for at least seven hours each night.
- Drink plenty of water.
- Eat a healthy diet.
- Protect your skin from excessive cold, heat, and wind.

Self-assessment 4.6

1) What are the skin characteristics to note during physical examination?
2) What are the causes of acne?
3) Enumerate common skin conditions in children
4) Which physical assessment technique used to examine the skin
5) List the element of education for the prevention of skin conditions?

End unit assessment 4

1) List 5 infectious diseases of the skin
2) Why do old adults lose skin elasticity and develop wrinkles?
3) Why do we insert the otoscope differently in children and adult patients?
4) What does a deviated uvula present during buccal cavity assessment?
5) What are the inspectional findings of the lips?
6) Enumerate the signs and symptoms of tonsillitis
7) Which sinuses are palpable during physical examination?

UNIT 5 INTRODUCTION TO COMMUNITY HEALTH NURSING

Key Unit Competence:

Provide basic community interventions

Introductory activity 5

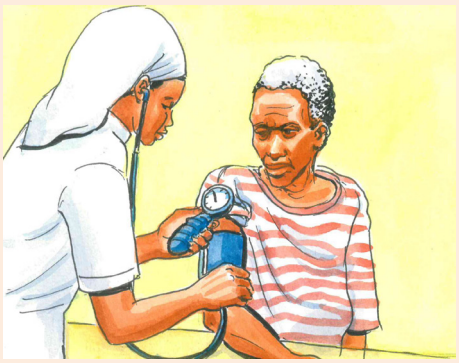
Observe the pictures A, B, C, and D



A



B



A



B

1) Describe the pictures A, B, C and D
2) According to you, what do you think is the focus of this unit 5?

Introduction

As a specialty field of nursing, community health nursing adds public health knowledge and skills that address the needs and problems of communities and aggregates and focuses care on communities and vulnerable populations. Community health nursing is grounded in both public health science and nursing science, which makes its philosophical orientation and the nature of its practice unique. It has been recognized as a subspecialty of both fields.

5.1. Overview of community health Nursing:

This sub-unit of overview of community health nursing discusses the Concepts definition, History of community health nursing, and objectives of Community health nursing. It also argues on characteristics of community health nursing, principles of community health nursing and community Health in Rwanda.

5.1.1. Concepts definition

Learning activity 5.1.1

With use of student text book of fundamentals of nursing (senior six) or the library text books of community health nursing / public health nursing, define the following terms/concepts: health, a community, an aggregate, social determinants of health, community health nursing, public health, primary prevention, secondary prevention, and tertiary prevention.

a. Health

Health is defined in the WHO constitution of 1948 as: A state of complete physical, social and mental well-being, and not merely the absence of disease or infirmity. Here below, there discussion of each of those components of health (that is physical, mental (or psychological), and social well-being).

Defining physical health

Physical health, which is one of the components of the definition of health, could be defined as the absence of diseases or disability of the body parts. Physical health could be defined as the ability to perform routine tasks without any physical restriction. The following examples can help you to understand someone who is physically unhealthy:

- A person who has been harmed due to a car accident
- A farmer infected by malaria and unable to do their farming duties
- A person infected by tuberculosis and unable to perform his or her tasks.

Psychological health

Sometimes it can be really hard from the outside to tell if the person is struggling with mental health issues, but at other times they show symptoms that suggest a lack of self-awareness or personal identity, or an inability of rational and logical decision-making.

At other times it might be apparent that they are not looking after themselves and are without a proper purpose in their life. They may be drinking alcohol and have a non-logical response to any request. You may also notice that they have an inability to maintain their personal autonomy and are unable to maintain good relationships with people around them. So how do we recognize a mentally healthy adult? The mentally healthy adult shows behavior that demonstrates awareness of self, who has purpose to their life, a sense of self understanding, self-value and a willingness to perceive reality and cope with its difficulties.

The mentally healthy adult is active, hardworking and productive, persists with tasks until they are completed, logically thinks about things affecting their own health, responds flexibly in the face of stress, receives pleasure from a variety of sources, and accepts their own limitations realistically. The healthy adult has a capacity to live with other people and understand other people's needs. It is sometimes considered that the mentally healthy person shows growth and maturity in three areas: **cognitive, emotional and social.** The next part will help you understand these three components of psychological health:

Cognitive component

The cognitive component of mental health is really to do with thinking and being able to work things out. It includes the ability of an individual to learn, to have awareness (consciousness) and to perceive reality. At a higher level it also involves having a memory and being able to reason rationally and solve problems, as well as being able to work creativity and have a sense of imagination.

Emotional component

When you are implementing a health extension program, you may encounter various feelings or emotions in households in your community such as happiness, anger or sadness. People might cry or laugh. The **emotional component** of health is the ability and skill of expressing emotions in an 'appropriate' way. The word "appropriate" means that the type of response should be able to match the problem.

In the previous section you have learned something about the physical and mental components of health. Social health is also an important component of overall health and in the next section you will consider the definition and some examples of social health.

Social component

A social role can be developed while taking part in communal activities such as harvesting or other activities where teamwork is important.

The **social component** of health is considered to be the ability to make and maintain 'acceptable' and 'proper' interactions and communicate with other people within the social environment. This component also includes being able to maintain satisfying interpersonal relationships and being able to fulfill a social role. Having a social role is the ability that people have to maintain their own identity while sharing, cooperating, communicating and enjoying the company of others. This is really important when participating in friendships and taking a full part in family and community life.

The following examples could be considered to contribute to social health:

1. Mourning when a close family member dies
2. Going to a football match or involvement in a community meeting
3. Celebrating traditional festivals within your community
4. Shopping in the market
5. Creating and maintaining friendship.

In reality all these events could have a social component and help towards building people's social view of health. They all involve interacting with others and gaining support, friendship and in many instances joy from being with other people.

b. Community

The definitions of community are numerous and variable. Before 1996, definitions of community focused on geographic boundaries combined with social attributes of people.

In recent nursing literature, community has been defined as "a collection of people who interact with one another and whose common interests or characteristics form the basis for a sense of unity or belonging".

Maurer and Smith (2013) further addressed the concept of community and identified three defining attributes: people, place, and social interaction or common characteristics, interests, or goals. Combining ideas and concepts, in this text, community is seen as **a group or collection of individuals interacting in social units and sharing common interests, characteristics, values, and goals.**

Maurer and Smith (2013) noted that there are two main types of communities: geopolitical communities and phenomenological communities. **Geopolitical communities** are those most traditionally recognized or imagined when the term community is considered. Geopolitical communities are defined or formed

by natural and/or manmade boundaries and include cities, counties, states, and nations. Other commonly recognized geopolitical communities are school districts, census tracts, and neighborhoods.

Phenomenological communities, on the other hand, refer to relational, interactive groups. In phenomenological communities, the place or setting is more abstract, and people share a group perspective or identity based on culture, values, history, interests, and goals. Examples of phenomenological communities are schools, colleges, and universities; churches, synagogues, and mosques; and various groups and organizations, such as social networks.

A **community of solution** is a type of phenomenological community. A community of solution is a collection of people who form a group specifically to address a common need or concern. The Sierra Club, whose members lobby for the preservation of natural resource lands, and a group of disabled people who challenge the owners of an office building to obtain equal access to public buildings, education, jobs, and transportation are examples. These groups or social units work together to promote optimal "health" and to address identified actual and potential health threats and health needs.

c. Aggregate

It is a population group with common characteristics. Aggregates are subgroups or subpopulations that have some common characteristics or concerns.

Depending on the situation, needs, and practice parameters, community health nursing interventions may be directed toward a community (e.g., residents of a small town), a population (e.g., all elders in a rural region), or an aggregate (e.g., pregnant teens within a school district).

d. Community-based nursing

Community-based nursing is setting-specific, and the emphasis is on acute and chronic care and includes such practice areas as home health nursing and nursing in outpatient or ambulatory settings. Community-based nursing practice refers to application of the nursing process in caring for individuals, families and groups where they live, work or go to school or as they move through the health care system.

At present, community-based nursing is defined as minor acute and chronic care that is comprehensive, coordinated, and delivered where people work, live, or attends school. Community-based nursing is an extension of illness care provided to clients and their families outside the acute care setting. Although the client's individual needs are met, the nurses may not be paying attention to family dynamics, environmental health, health education, and health promotion.

For the past few decades, the title community health nurse has been used to

designate nursing care in community settings that combines the practice of community-based nursing and public health nursing. The practice of community health nursing is the use of systematic processes to deliver care to individual people, families, and community groups with a focus on promoting, preserving, protecting, and maintaining health. In doing so, the care directed to the individual person, family, or community group contributes to the health of the population as a whole.

e. Community health nursing

It is the use of systematic processes to deliver care to individuals, families, and community groups with a focus on promoting, preserving, protecting, and maintaining health.

Community-based nursing and community health nursing have different goals. Community health nursing emphasizes preservation and protection of health, and community-based nursing emphasizes managing acute or chronic conditions. In community health nursing, the primary client is the community; in community-based nursing, the primary clients are the individual and the family. Finally, services in community-based nursing are largely direct, but in community health nursing, services are both direct and indirect.

f. Epidemiology

It is the study of the distribution and determinants of states of health and illness in human populations.

g. Evidence-based nursing

It is the integration of the best evidence available with clinical expertise and the values of the client to increase the quality of care.

h. Healthcare disparities

Gaps in healthcare experienced by one population compared with another.

i. Health information technology

It is comprehensive management of health information and its secure exchange between consumers, providers, government and quality entities, and insurers.

j. Public health

Contrasting with “medical care,” which focuses on disease management and “cure,” public health efforts focus on health promotion and disease prevention. Health promotion activities enhance resources directed at improving well-being, whereas disease prevention activities protect people from disease and the effects of disease.

C. E. Winslow is known for the following classic definition of public health: Public health is the Science and Art of (1) preventing disease, (2) prolonging life, and

(3) promoting health and efficiency through organized community effort for: (a) sanitation of the environment, (b) control of communicable infections, (c) education of the individual in personal hygiene, (d) organization of medical and nursing services for the early diagnosis and preventive treatment of disease, and (e) development of the social machinery to ensure everyone a standard of living adequate for the maintenance of health, so organizing these benefits as to enable every citizen to realize his birthright of health and longevity

k. Public health nursing

Population-based practice, defined as a synthesis of nursing and public health within the context of preventing disease and disability and promoting and protecting the health of the entire community.

l. Social determinants of health:

These are the social conditions in which people live and work. The health status of a community is associated with a number of factors, such as health care access, economic conditions, social and environmental issues, and cultural practices, and it is essential for the community health nurse to understand the determinants of health and recognize the interaction of the factors that lead to disease, death, and disability. Indeed, individual biology and behaviors influence health through their interaction with each other and with the individual's social and physical environments. Thus, policies and interventions can improve health by targeting detrimental or harmful factors related to individuals and their environment.

Community and public health nurses should understand social determinants of health and appreciate that health and illness are influenced by a web of factors, some that can be changed (e.g., individual behaviors such as tobacco use, alcohol consumption, diet, physical activity) and some that cannot (e.g., genetics, age, gender). Other factors (e.g., physical and social environment) may require changes that will need to be accomplished from a policy perspective. Community health nurses must work with policy makers and community leaders to identify patterns of disease and death and to advocate for activities and policies that promote health at the individual, family, and population levels.

m. Preventive Approach to Health

Leavell and Clark (1958) identified three levels of prevention commonly described in nursing practice: primary prevention, secondary prevention, and tertiary prevention as illustrated in the following figure:

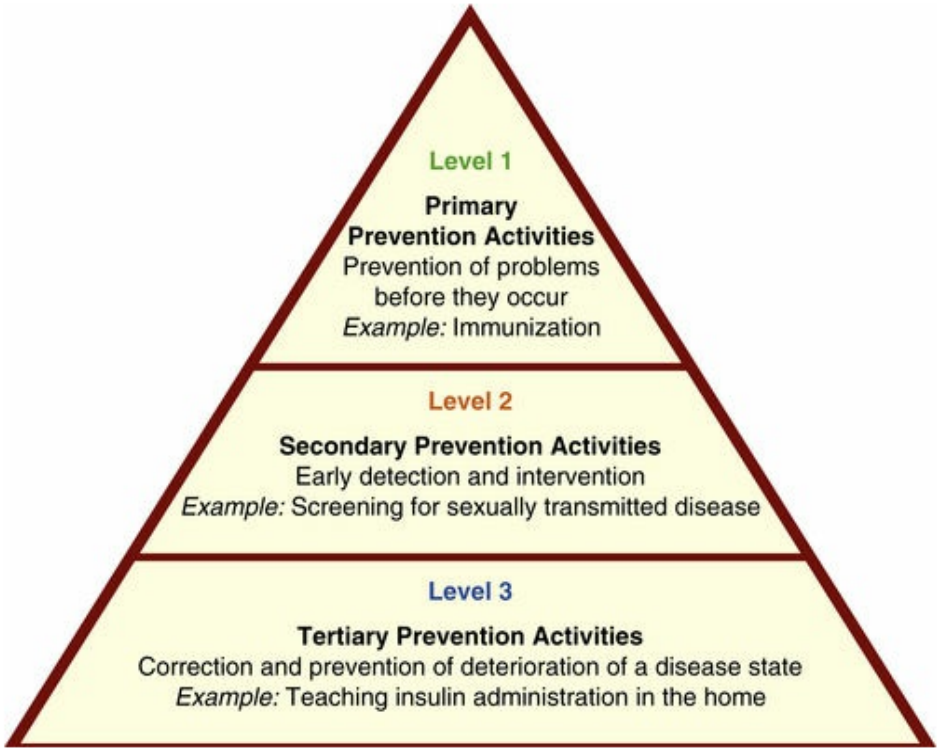


Figure 5.1 1 Preventive approach to health

Primary prevention relates to activities directed at preventing a problem before it occurs by altering susceptibility or reducing exposure for susceptible individuals. Primary prevention consists of two elements: general health promotion and specific protection. Health promotion efforts enhance resiliency and protective factors and target essentially well populations. **Examples** include promotion of good nutrition, provision of adequate shelter, and encouraging regular exercise. Specific protection efforts reduce or eliminate risk factors and include such measures as immunization and water purification.

Secondary prevention refers to early detection and prompt intervention during the period of early disease pathogenesis. Secondary prevention is implemented after a problem has begun, but before signs and symptoms appear. It targets those populations that have risk factors. Mammography, blood pressure screening, scoliosis screening, and Papanicolaou smears are examples of secondary prevention.

Tertiary prevention targets populations that have experienced disease or injury and focuses on limitation of disability and rehabilitation. Aims of tertiary prevention are to keep health problems from getting worse, to reduce the effects of disease and injury, and to restore individuals to their optimal level of functioning. Examples

include teaching how to perform insulin injections and disease management to a patient with diabetes, referral of a patient with spinal cord injury for occupational and physical therapy, and leading a support group for grieving parents.

Much of community health nursing practice is directed toward preventing the progression of disease at the earliest period or phase feasible using the appropriate level(s) of prevention. For example, when applying "levels of prevention" to a client with HIV/AIDS, a nurse might perform the following interventions:

- Educate students on the practice of sexual abstinence or "safer sex" by using barrier methods (primary prevention)
- Encourage testing and counseling for clients with known exposure or who are in high-risk groups; provide referrals for follow-up for clients who test positive for HIV (secondary prevention)
- Provide education on management of HIV infection, advocacy, case management, and other interventions for those who are HIV positive (tertiary prevention).

Self-assessment 5.1.1

1) Give at least 4 social determinants of health
2) Differentiate a community from an aggregate
3) Differentiate community-based nursing from community health nursing.
4) With examples, differentiate physical health from psychological health
5) With examples, differentiate the three levels of prevention commonly described in nursing practice

5.1.2. History of community health Nursing

Learning activity 5.1.2

By the use of community health nursing books and internet resources, found out at least three key periods of the history of community health nursing and explain them.

Traditionally, historians believed that organized public health efforts were eighteenth- and nineteenth-century activities associated with the Sanitary Revolution. However, modern historians have shown that organized community health efforts to prevent disease, prolong life, and promote health have existed since early human history. Public health efforts developed slowly over time. The following sections briefly trace the evolution of organized public health and highlight the periods of prerecorded

historic times (i.e., before 5000 BCE), classical times (i.e., 3000 to 200 BCE), the Middle Ages (i.e., 500 to 1500 CE), the Renaissance (i.e., fifteenth, sixteenth, and seventeenth centuries), the eighteenth century, and the nineteenth century, and into the present day.

a. Prerecorded Historic Times

From the early remains of human habitation, anthropologists recognize that early nomadic humans became domesticated and tended to live in increasingly larger groups. Aggregates ranging from family to community inevitably shared episodes of life, health, sickness, and death. Whether based on superstition or sanitation, health practices evolved to ensure the survival of many aggregates. For example, primitive societies used elements of medicine (e.g., voodoo), isolation (e.g., banishment), and fumigation (i.e., use of smoke) to manage disease and thus protect the community for thousands of years.

Classical Times

In the early years of the period 3000 to 1400 BCE, the Minoans devised ways to flush water and construct drainage systems. Circa 1000 BCE, the Egyptians constructed elaborate drainage systems, developed pharmaceutical preparations, and embalmed the dead. Pollution is an ancient problem. The Biblical Book of Exodus reported that “all the waters that were in the river stank,” and in the Book of Leviticus (believed to be written around 500 BCE), the Hebrews formulated the first written hygiene code. This hygiene code protected water and food by creating laws that governed personal and community hygiene such as contagion, disinfection, and sanitation.

Greece

Greek literature contains accounts of communicable diseases such as diphtheria, mumps, and malaria. The Hippocratic book On Airs, Waters and Places, a treatise on the balance between humans and their environment, may have been the only volume on this topic until the development of bacteriology in the late nineteenth century. Diseases that were always present in a population, such as colds and pneumonia, were called endemic. Diseases such as diphtheria and measles, which were occasionally present and often fairly widespread, were called epidemic. The Greeks emphasized the preservation of health, or good living, which the goddess Hygeia represented, and curative medicine, which the goddess Panacea personified. Human life had to be in balance with environmental demands; therefore the Greeks weighed the importance of exercise, rest, and nutrition according to age, sex, constitution, and climate.

Rome

Although the Romans readily adopted Greek culture, they far surpassed Greek engineering by constructing massive aqueducts, bathhouses, and sewer systems.

For example, at the height of the Roman Empire, Rome provided its 1 million inhabitants with 40 gallons of water per person per day, which is comparable to modern consumption rates. Inhabitants of the overcrowded Roman slums, however, did not share in public health amenities such as sewer systems and latrines, and their health suffered accordingly. The Romans also observed and addressed occupational health threats. In particular, they noted the pallor of the miners, the danger of suffocation, and the smell of caustic fumes. The ancient Romans provided public health services that included the following:

- A water board to maintain the aqueducts
- A supervisor of the public baths
- Street cleaners
- Supervision of the sale of food

For protection, miners devised safeguards by using masks made of bags, sacks, membranes, and bladder skins. In the early years of the Roman Republic, priests were believed to mediate diseases and often dispensed medicine. Public physicians worked in designated towns and earned money to care for the poor. In addition, they were able to charge wealthier patients a service fee.

Much as in a modern health maintenance organization (HMO) or group practice, several families paid a set fee for yearly services. Hospitals, surgeries, infirmaries, and nursing homes appeared throughout Rome. In the fourth century, a Christian woman named Fabiola established a hospital for the sick poor. Others repeated this model throughout medieval times.

b. Middle Ages

The decline of Rome, which occurred circa 500 CE, led to the Middle Ages. Monasteries promoted collective activity to protect public health, and the population adopted protective measures such as building wells and fountains, cleaning streets, and disposing of refuse. The commonly occurring communicable diseases were measles, smallpox, diphtheria, leprosy, and bubonic plague. Physicians had little to offer in the management of diseases such as leprosy. The church took over by enforcing the hygienic codes from Leviticus and establishing isolation and leper houses, or leprosaria.

A pandemic is the existence of disease in a large proportion of the population. One such pandemic, the bubonic plague, ravaged much of the world in the fourteenth century. This plague, or Black Death, claimed close to half the world's population at that time. For centuries, medicine and science did not recognize that fleas, which were attracted to the large number of rodents inhabiting urban areas, were the transmitters of plague. Modern public health practices such as isolation, disinfection, and ship quarantines emerged in response to the bubonic plague.

During the Middle Ages, clergymen often acted as physicians and treated kings and noblemen. Monks and nuns provided nursing care in small houses designated as structures similar to today's small hospitals. Medieval writings contained information on hygiene and addressed such topics as housing, diet, personal cleanliness, and sleep.

c. The Renaissance

Although the cause of infectious disease remained undiscovered, two events important to public health occurred during the Renaissance. In 1546, GirolamoFracastoro presented a theory that infection was a cause and epidemic a consequence of the "seeds of disease." Then, in 1676, Anton van Leeuwenhoek described microscopic organisms, although he did not associate them with disease. The Elizabethan Poor Law, enacted in England in 1601, held the church parishes responsible for providing relief for the poor. This law governed health care for the poor for more than two centuries and became a prototype for later U.S. laws.

d. Eighteenth Century

Great Britain

The eighteenth century was marked by imperialism and industrialization. Sanitary conditions remained a huge problem. During the Industrial Revolution, a gradual change in industrial productivity occurred. The industrial boom sacrificed many lives for profit. In particular, it forced poor children into labor. Under the Elizabethan Poor Law, parishes established workhouses to employ the poor. Orphaned and poor children were wards of the parish; therefore the parish forced these young children to labor in parish workhouses for long hours.

At 12 to 14 years of age, a child became a master's apprentice. Those apprenticed to chimney sweeps reportedly suffered the worst fate because their masters forced them into chimneys at the risk of being burned and suffocated. Vaccination was a major discovery of the times. In 1796, Edward Jenner observed that people who worked around cattle were less likely to have smallpox. He concluded that immunity to smallpox resulted from an inoculation with the cowpox virus. Jenner's contribution was significant because approximately 95% of the population suffered from smallpox and approximately 10% of the population died of smallpox during the eighteenth century. Frequently, the faces of those who survived the disease were scarred with pockmarks.

e. Nineteenth Century

Europe

During the nineteenth century, communicable diseases ravaged the population that lived in unsanitary conditions, and many lives were lost. For example, in the mid-1800s, typhus and typhoid fever claimed twice as many lives each year as

the Battle of Waterloo. Edwin Chadwick called attention to the consequences of unsanitary conditions that resulted in health disparities that shortened life spans of the laboring class in particular. Chadwick contended that death rates were high in large industrial cities such as Liverpool, where more than half of all children born of working-class parents died by age 5. Laborers lived an average of 16 years. In contrast, tradesmen lived 22 years, and the upper classes lived 36 years.

In 1842, Chadwick published his famous Report on an Inquiry Into the Sanitary Conditions of the Laboring Population of Great Britain. The report furthered the establishment of the General Board of Health for England in 1848. Legislation for social reform followed, addressing prevailing concerns such as child welfare, factory management, education, and care for the elderly, sick, and mentally ill. Clean water, sewers, fireplugs, and sidewalks emerged as a result.

In 1849, a German pathologist named Rudolf Virchow argued for social action—bettering the lives of the people by improving economic, social, and environmental conditions—to attack the root social causes of disease. He proposed “a theory of epidemic disease as a manifestation of social and cultural maladjustment”. He further argued that the public was responsible for the health of the people; that social and economic conditions heavily affected health and disease; that efforts to promote health and fight disease must be social, economic, and medical; and that the study of social and economic determinants of health and disease would yield knowledge to guide appropriate action. In 1849, these principles were embodied in a public health law submitted to the Berlin Society of Physicians and Surgeons. According to this document, public health has as its objectives: (1) The healthy mental and physical development of the citizen, (2) the prevention of all dangers to health, and (3) the control of disease.

It was pointed out that public health cares for society as a whole by considering the general physical and social conditions that may adversely affect health and protects each individual by considering those conditions that prevent the individual from caring for his or her health. These “conditions” may fit into one of two major categories: conditions that give the individual the right to request assistance from the state (e.g., poverty and infirmity) and conditions that give the state the right and obligation to interfere with the personal liberty of the individual (e.g., transmissible diseases and mental illness).

A very critical event in the development of modern public health occurred in 1854, when an English physician, anesthetist, and epidemiologist named John Snow demonstrated that cholera was transmissible through contaminated water. In a large population afflicted with cholera, he shut down the community’s water resource by removing the pump handle from a well and carefully documented changes as the number of cholera cases fell dramatically.

f. Advent of Modern Health Care

Early public health efforts evolved further in the mid-nineteenth century. Administrative efforts, initial legislation, and debate regarding the determinants of health and approaches to health management began to appear on a social, economic, and medical level. The advent of "modern" health care occurred around this time, and nursing made a large contribution to the progress of health care.

The following sections discuss the evolution of modern nursing, the evolution of modern medical care and public health practice, the evolution of the community caregiver, and the establishment of public health nursing.

Evolution of Modern Nursing

Florence Nightingale, the woman credited with establishing "modern nursing," began her work during the mid-nineteenth century. Historians remember Florence Nightingale for contributing to the health of British soldiers during the Crimean War and establishing nursing education. However, many historians failed to recognize her remarkable use of public health principles and distinguished scientific contributions to health care reform The following review of Nightingale's work emphasizes her concern for environmental determinants of health; her focus on the aggregate of British soldiers through emphasis on sanitation, community assessment, and analysis; the development of the use of graphically depicted statistics; and the gathering of comparable census data and political advocacy on behalf of the aggregate.

Nightingale was from a wealthy English family, was well educated, and traveled extensively. Her father tutored her in mathematics and many other subjects. Nightingale later studied with Adolphe Quetelet, a Belgian statistician. Quetelet influenced her profoundly and taught her the discipline of social inquiry. Nightingale also had a passion for hygiene and health. In 1851, at the age of 31 years, she trained in nursing with Pastor Fliedner at Kaiserswerth Hospital in Germany. She later studied the organization and discipline of the Sisters of Charity in Paris. Nightingale wrote extensively and published her analyses of the many nursing systems she studied in France, Austria, Italy, and Germany.

In 1854, Nightingale responded to distressing accounts of a lack of care for wounded soldiers during the Crimean War. She and 40 other nurses traveled to Scutari, which was part of the Ottoman Empire at the time. Nightingale was accompanied by lay nurses, Roman Catholic sisters, and Anglican sisters. Upon their arrival, the nurses learned that the British army's management method for treating the sick and wounded had created conditions that resulted in extraordinarily high death rates among soldiers. One of Nightingale's greatest achievements was improving the management of ill and wounded soldiers. Nightingale faced an assignment in The Barrack Hospital, which had been built for 1700 patients. In 4 miles of beds,

she found 3000 to 4000 patients separated from each other by only 18 inches of space. During the Crimean War, cholera and “contagious fever” were rampant. Equal numbers of men died of disease and battlefield injury. Nightingale found that allocated supplies were bound in bureaucratic red tape; for example, supplies were “sent to the wrong ports or were buried under munitions and could not be got”. Nightingale encountered problems reforming the army’s methods for care of the sick because she had to work through eight military affairs departments related to her assignment. She sent reports of the appalling conditions of the hospitals to London. In response to her actions, governmental and private funds were provided to set up diet kitchens and a laundry and provided food, clothing, dressings, and laboratory equipment Major reforms occurred during the first 2 months of her assignment. Aware that an interest in keeping social statistics was emerging, Nightingale realized that her most forceful argument would be statistical in nature. She reorganized the methods of keeping statistics and was the first to use shaded and colored coxcomb graphs of wedges, circles, and squares to illustrate the preventable deaths of soldiers. Nightingale compared the deaths of soldiers in hospitals during the Crimean War with the average annual mortality in Manchester and with the deaths of soldiers in military hospitals in and near London at the time. Through her statistics she also showed that, by the end of the war, the death rate among ill soldiers during the Crimean War was no higher than that among well soldiers in Britain.

Indeed, Nightingale’s careful statistics revealed that the death rate for treated soldiers decreased from 42% to 2%. Furthermore, she established community services and activities to improve the quality of life for recovering soldiers. These included rest and recreation facilities, study opportunities, a savings fund, and a post office. She also organized care for the families of the soldiers.

After returning to London at the close of the war in 1856, Nightingale devoted her efforts to sanitary reform. At home, she surmised that if the sanitary neglect of the soldiers existed in the battle area, it probably existed at home in London. She prepared statistical tables to support her suspicions.

In one study comparing the mortality of men aged 25 to 35 years in the army barracks of England with that of men the same age in civilian life, Nightingale found that the mortality of the soldiers was nearly twice that of the civilians. In one of her reports, she stated that “our soldiers enlist to death in the barracks”. Furthermore, she believed that allowing young soldiers to die needlessly of unsanitary conditions was equivalent to taking them out, lining them up, and shooting them. She was very political and did not keep her community assessment and analysis to herself. Nightingale distributed her reports to members of Parliament and to the medical and commanding officers of the army. Prominent male leaders of the time challenged her reports. Undaunted, she rewrote them in greater depth and redistributed them.

In her efforts to compare the hospital systems in European countries, Nightingale discovered that each hospital kept incomparable data and that many hospitals used various names and classifications for diseases. She noted that these differences prevented the collection of similar statistics from larger geographic areas. These statistics would create a regional health-illness profile and allow for comparison with other regions. She printed common statistical forms that some hospitals in London adopted on an experimental basis. Nightingale also stressed the need to use statistics at the administrative and political levels to direct health policy. Noting the ignorance of politicians and those who set policy regarding the interpretation and use of statistics, she emphasized the need to teach national leaders to use statistical facts. Nightingale continued the development and application of statistical procedures, and she won recognition for her efforts. The Royal Statistical Society made her a fellow in 1858, and the American Statistical Association made her an honorary member in 1874.

In addition to her contributions to nursing and her development of nursing education, Nightingale's credits include the application of statistical information toward an understanding of the total environmental situation. Population-based statistics have marked implications for the development of public health and public health nursing. Grier and Grier (1978) recognized Nightingale's contributions to statistics and stated, "Her name occurs in the index of many texts on the history of probability and statistics, in the history of quantitative graphics, and in texts on the history of science and mathematics." It is interesting to note that the paradigm for nursing practice and nursing education that evolved through Nightingale's work did not incorporate her emphasis on statistics and a sound research base. It is also curious that nursing education did not consult her writings and did not stress the importance of determining health's social and environmental determinants until much later.

Establishment of Modern Medical Care and Public Health Practice

To place Nightingale's work in perspective, it is necessary to consider the development of medical care in light of common education and practice during the late nineteenth and early twentieth centuries. Goodnow (1933) called this time a "dark age." Medical sciences were underdeveloped, and bacteriology was unknown. Few medical schools existed at the time, so apprenticeship was the path to medical education. The majority of physicians believed in the "spontaneous generation" theory of disease causation, which stated that disease organisms grew from nothing.

Typical medical treatment included bloodletting, starving, using leeches, and prescribing large doses of metals such as mercury and antimony. Nightingale's uniform classification of hospital statistics noted the need to tabulate the classification of diseases in hospital patients and the need to note the diseases that patients contracted in the hospital. These diseases, such as gangrene and septicemia,

were later called iatrogenic diseases. Considering the lack of surgical sanitation in hospitals at the time, it is not surprising that iatrogenic infection was rampant. For example, Goodnow (1933) illustrates the following unsanitary operating procedures: Before an operation, the surgeon turned up the sleeves of his coat to save the coat, and would often not trouble to wash his hands, knowing how soiled they soon would be! The area of the operation would sometimes be washed with soap and water, but not always, for the inevitability of corruption made it seem useless. The silk or thread used for stitches or ligatures was hung over a button of the surgeon's coat, and during the operation a convenient place for the knife to rest was between his lips. Instruments used for lancing abscesses were kept in the vest pocket and often only wiped with a piece of rag as the surgeon went from one patient to another.

During the nineteenth century, the following important scientists were born: Louis Pasteur in 1822, Joseph Lister in 1827, and Robert Koch in 1843. Their research also had a profound impact on health care, medicine, and nursing. Pasteur was a chemist, not a physician. While experimenting with wine production in 1854, he proposed the theory of the existence of germs. Although his colleagues ridiculed him at first, Koch applied his theories and developed his methods for handling and studying bacteria. Subsequently, Pasteur's colleagues gave him acknowledgment for his work.

Lister, whose father perfected the microscope, observed the healing processes of fractures. He noted that when the bone was broken but the skin was not, recovery was uneventful. However, when both the bone and the skin were broken, fever, infection, and even death were frequent. He found the proposed answer to his observation through Pasteur's work. Something outside the body entered the wound through the broken skin, causing the infection. Lister's surgical successes eventually improved when he soaked the dressings and instruments in mixtures of carbolic acid (i.e., phenol) and oil.

In 1882, Koch discovered the causative agent for cholera and the tubercle bacillus. Pasteur discovered immunization in 1881 and the rabies vaccine in 1885. These discoveries were significant to the development of public health and medicine. However, physicians accepted these discoveries slowly. For example, TB was a major cause of death in late nineteenth century America and often plagued its victims with chronic illness and disability. It was a highly stigmatized disease, and most physicians thought it was a hereditary, constitutional disease associated with poor environmental conditions.

Hospitalization for TB was rare because the stigma caused families to hide their infected relatives. Without treatment, the communicability of the disease increased. The common treatment was a change of climate. Although Koch had announced

the discovery of the tubercle bacillus in 1882, it was 10 years before the emergence of the first organized community campaign to stop the spread of the disease. The case of puerperal (i.e., childbirth) fever illustrates another example of slow innovation stemming from scientific discoveries. Although Pasteur showed that Streptococcus caused puerperal fever, it was years before physicians accepted his discovery. However, medical practice eventually changed, and physicians no longer delivered infants after performing autopsies of puerperal fever cases without washing their hands.

Debates over the causes of disease occurred throughout the nineteenth century. Scientists discovered organisms during the latter part of the century, supporting the theory that specific contagious entities caused disease. This discovery challenged the earlier, miasmic theory that environment and atmospheric conditions caused disease.

The new scientific discoveries had a major impact on the development of public health and medical practice. The emergence of the germ theory of disease focused diagnosis and treatment on the individual organism and the individual disease. State and local governments felt increasingly responsible for controlling the spread of bacteria and other microorganisms. A community outcry for social reform forced state and local governments to take notice of the deplorable living conditions in the cities.

Community Caregiver

The traditional role of the community caregiver or the traditional healer has nearly vanished. However, medical and nurse anthropologists who have studied primitive and Western cultures are familiar with the community healer and caregiver role. The traditional healer (e.g., shaman, midwife, herbalist, or priest) is common in non-Western, ancient, and underdeveloped societies. Although traditional healers have always existed, professionals and many people throughout industrialized societies may overlook or minimize their role. The role of the healer is often integrated into other institutions of society, including religion, medicine, and morality. The notion that one person acts alone in healing may be foreign to many cultures; healers can be individuals, kin, or entire societies.

Societies retain folk practices because they offer repeated success.

Most cultures have a pharmacopoeia and maintain therapeutic and preventive practices, and it is estimated that one fourth to one half of folk medicines are empirically effective. Indeed, many modern drugs are based on the medicines of primitive cultures (e.g., eucalyptus, coca, and opium).

Since ancient times, folk healers and cultural practices have both positively and negatively affected health. The late nineteenth and early twentieth century practice

of midwifery illustrates modern medicine's arguably sometimes negative impact on traditional healing in many Western cultures. For example, traditional midwifery practices made women rise out of bed within 24 hours of delivery to help "clear" the lochia. Throughout the mid-1900s, in contrast, "modern medicine" recommended keeping women in bed, often for fairly extended periods.

Establishment of Public Health Nursing

Public health nursing as a holistic approach to health care developed in the late nineteenth and early twentieth centuries. Public and community health nursing evolved from home nursing practice, community organizations, and political interventions on behalf of aggregates.

Twentieth Century

In 1902, Wald persuaded Dr. Ernest J. Lederle, Commissioner of Health in New York City, to try a school nursing experiment. Henry Street lent a public health nurse named Linda Rogers to the New York City Health Department to work in a school (Dock and Stewart, 1925). The experiment was successful, and schools adopted nursing on a widespread basis. School nurses performed physical assessments, treated minor infections, and taught health to pupils and parents. In 1909, Wald mentioned the efficacy of home nursing to one of the officials of the Metropolitan Life Insurance Company. The company decided to provide home nursing to its industrial policyholders, and soon the United States and Canada used the program successfully. The growing demand for public health nursing was hard to satisfy. In 1910, the Department of Nursing and Health formed at the Teachers College of Columbia University in New York City. A course in visiting nursing placed nurses at the Henry Street settlement for fieldwork. In 1912, the newly formed National Organization for Public Health Nursing elected Lillian Wald its first president. This organization was open to public health nurses and to those interested in public health nursing. In 1913, the Los Angeles Department of Health formed the first Bureau of Public Health Nursing (Rosen, 1993). That same year, the Public Health Service appointed its first public health nurse. At first, many public health nursing programs used nurses in specialized areas such as school nursing, TB nursing, maternal-child health nursing, and communicable disease nursing. In later years, more generalized programs have become acceptable. Efforts to contain health care costs include reducing the number of hospital days. With the advent of shortened hospital stays, private home health agencies provide home-based illness care across the United States. The second half of the century saw a shift in emphasis to cost containment and the provision of health care services through managed care. Traditional models of public health nursing and visiting nursing from home health agencies became increasingly common over the next several decades, but waned toward the end of the century owing to changes in health care financing.

g. Twenty-First Century

New Causes of Mortality

Since the middle of the twentieth century, the focus of disease in Western societies has changed from mostly infectious diseases to chronic diseases. Increased food production and better nutrition during the nineteenth and early twentieth centuries contributed to the decline in infectious disease–related deaths. Other factors were better sanitation through water purification, sewage disposal, improved food handling, and milk pasteurization. According to McKeown (2001) and Schneider (2011), the components of "modern" medicine, such as antibiotics and immunizations, had little effect on health until well into the twentieth century. Indeed, widespread vaccination programs began in the late 1950s, and antibiotics came into use after 1945. The advent of chronic disease in Western populations puts selected aggregates at risk, and those aggregates need health education, screening, and programs to ensure occupational and environmental safety. Too often modern medicine focuses on the single cause of disease (i.e., germ theory) and treating the acutely ill. Therefore health providers have treated the chronically ill with an acute care approach even though preventive care, health promotion, and restorative care are necessary and would likely be more effective in combating escalating rates of chronic disease. This expanded approach may develop under new systems of cost containment.

Hygeia versus Panacea

The Grecian Hygeia (i.e., healthful living) versus Panacea (i.e., cure) dichotomy still exists today. Although the change in the nature of health "problems" is certain, the roles of individual and collective activities in the prevention of illness and premature death are slow to evolve.

Formerly, Health care has been for those living near enough to a hospital or a doctor in times of need and for those who could spend money for medicines and treatment. The great majority of people stayed in the village when sick and even today many suffer and die without proper help.

The shorter length of stay in acute care facilities, as well as the increase in ambulatory surgery and outpatient clinics, has resulted in more acute and chronically ill people residing in the community who need professional nursing care. Fortunately, these people can have their care needs met cost effectively outside of expensive acute care settings. As a result, demand has increased for nurses in ambulatory clinics, home care, care management, and case management.

Public and community health, ambulatory care, and other non-institutional settings have historically had the largest increases in Registered Nurse employment.

Self-assessment 5.1.2

1) In which centuries was public health nursing developed as a holistic approach to health care?
2) Who is the woman credited with establishing modern nursing?
3) Discuss the prerecorded historic times of community health nursing

5.1.3. Objectives, purposes and principles of community health nursing

Learning activity 5.1.3

1) Use the books of community health nursing and internet resources and found out the purposes and principles of community health nursing

a. Objectives of community health nursing

The goals and objectives of Community Health Nursing are the following:

- To assess the need and priorities of vulnerable group like pregnant mother, children and old age persons;
- To provide health care services at every level of community including health education, immunization,
- To make community diagnosis;
- To evaluate the health programs and make further plans;
- To prevent disabilities and providing rehabilitation services;
- To provide referral services at various health care levels;
- To increase life expectancy;
- To enhance the standard of nursing profession through:
  - Conducting nursing research.
  - Provide quality assurance in community health nursing.
  - Performing the role of nurse epidemiologist.
- To improve the ability of the community to deal with their own health problems
- To strengthen the community resources
- To prevent and control communicable and non-communicable diseases
- To provide specialized services

b. Purpose of community health nursing

Purposes / Aims of Community Health Nursing are:

- To promote health and efficiency;
- Prevention and control diseases and disabilities;
- Need based health care to prolong life.

c. Principles of Community Health Nursing

The following are the principles of community health nursing:

- Health services should be based on the needs of individuals and the community.
- Health services should be suitable to the budget; workers and the resources.
- Family should be recognized as a unit and the health services should be provided to its members.
- Health services should be equally avail¬able to all without any discrimination of age, sex, caste religion, political leaning and social or economic level etc.
- Health education is an important part of community health nursing. It should be preplanned, suitable to conditions, scientifically true and effective.
- Community health nursing should be provided continuously, without any interruption.
- Preparation and maintenance of records and reports is very important in com¬munity health nursing.
- Community health nurses and other health workers should be guided and supervised by highly educated and skilled professionals.
- Community health nurse should be responsible for:
  - Responsible for professional development.
  - Should continuously receive in-service training and continuing education.
  - Should follow professional ethics and standards in her work and behaviour.
  - Should have job satisfaction.
- Must have effective team spirit while working in the community.
- Timely evaluation is must for community services.

Self-assessment 5.1.3

1) Identify the objectives of community health nursing
2) What are the principles of community health nursing?

5.1.4. Characteristics of community health nursing

Learning activity 5.1.4

In the last holiday Mrs. K. and her parents went to visit their grandparents in Masimbi village. One day two community health nurses came to visit this village and took sufficient time meeting pregnant women and lactating mothers. They discussed together about pregnant women health and some issues during pregnant and lactation. The next day they hold a meeting talking about children nutrition. These events reminded her the day nurses came to their school and teach about malaria prevention.

Mrs. K admired the way those nurses use for helping people. Returning to their home town, she sat down with her mother and asked many questions in order to know more about the career of those nurses who work with people in their own villages.

Some of those questions are the followings:

1) Do community health nurses are the same as those who work in hospitals and clinics?
2) How do you characterize community health nursing?
3) After reading the related text in community health nursing textbooks, help the mother to offer responses to Mrs. K

Eight characteristics of community health nursing are particularly most important to the practice of this specialty:

a) Focus on health Education and empowerment of individuals and community:

Community health nurses play a critical role in educating individuals and communities about health-related topics. They aim to empower people with the knowledge and skills they need to take control of their own health. This includes teaching about disease prevention, healthy lifestyles, and management of chronic conditions. By empowering individuals, community health nurses help to improve overall health outcomes and promote self-sufficiency within the community.

b) Emphasizes on primary prevention:

Primary prevention involves measures taken to prevent diseases or injuries before they occur. Community health nurses prioritize activities such as immunizations, health education, and environmental modifications to reduce the incidence of health problems. The goal is to address health issues at their root, thereby preventing

the development of more serious conditions that could require complex and costly interventions.

c) Social justice:

Social justice in community health nursing refers to the fair and equitable distribution of health resources and opportunities for all community members. Nurses advocate for policies and practices that reduce health disparities and ensure that all individuals, regardless of their socio-economic status, race, or background, have access to quality healthcare services.

d) Interdisciplinary collaboration:

Community health nursing often requires collaboration with professionals from various disciplines, such as social workers, educators, public health officials, and other healthcare providers. This interdisciplinary approach ensures that the diverse needs of the community are met through a coordinated effort. Working together, these professionals can address the social, economic, and environmental factors that affect community health.

e) Cultural competencies:

Cultural competence involves understanding and respecting the cultural beliefs, values, and practices of the individuals and communities served. Community health nurses must be culturally aware and sensitive to effectively communicate with and provide care to people from diverse backgrounds. This helps in building trust, improving patient outcomes, and reducing cultural barriers to healthcare.

f) Ethical practice:

Ethical practice in community health nursing involves adhering to moral principles such as autonomy, beneficence, non-maleficence, and justice. Nurses are expected to respect the rights and dignity of individuals while providing care, ensuring confidentiality, and making decisions that are in the best interest of the community. Ethical practice also includes being transparent, honest, and accountable in all aspects of care delivery.

g) Advocacy:

Advocacy in community health nursing involves representing and supporting the interests of individuals and communities to improve health outcomes. This may include lobbying for policy changes, securing resources, or ensuring that vulnerable populations have access to necessary services. Community health nurses advocate at both the individual and community levels, aiming to create healthier environments and address social determinants of health.

h) Utilization of community resources and assets:

Community health nurses identify and leverage existing community resources and

assets to improve health outcomes. These may include local organizations, social services, schools, and businesses that can support health initiatives. By utilizing these resources, nurses can build stronger, healthier communities and ensure that care is accessible, sustainable, and tailored to the specific needs of the population.

Self-assessment 5.1.4

1) Explain eight characteristics of community health nursing

5.1.5. Community Health in Rwanda

Learning activity 5.1.5

Using internet and other resources like National Community Health Strategic Plan, Community Health policies; read about community health in Rwanda and respond to the following questions:

1) Discuss the importance of community health program in the community and its implementation.
2) How Community health workers (CHWs) are selected, their responsibilities and reporting?
3) Discuss about CHWs supervision

In Rwanda, community health services started in 1995 as **Rwanda Community Health Worker (CHW) Program,** aiming at increasing uptake of essential maternal and child clinical services through education of pregnant women, promotion of healthy behaviors, and follow-up and linkages to health services.

When the Ministry of Health (MOH) endorsed the program in 1995, there were approximately 12,000 CHWs. By 2005, the program had grown to over 45,000 CHWs. From 2005, after the decentralization policy had been implemented nationally, the MOH increased efforts to train and provide supplies to CHWs to deliver maternal and child health (MCH) services. Between 2008 and 2011, Rwanda introduced integrated community case management (ICCM) of childhood illness (for childhood pneumonia, diarrhea, and malaria). In 2010, the Government of Rwanda introduced Family Planning as a component of the national community health policy. The program has since grown to include an integrated service package that includes malnutrition screening, treatment of tuberculosis (TB) patients with directly observed therapy (DOT), prevention of non-communicable diseases (NCDs), community-based provision of contraceptives, and promotion of healthy behaviors and practices including hygiene, sanitation, and family gardens.

Program implementation

In each village of approximately 100–150 households, there is one CHW in charge of maternal health, called an **ASM** (Agent de Sante Maternelle) and two multidisciplinary CHWs called **Binômes**(one man and one woman working as a pair) providing basic care and integrated community case management (ICCM) of childhood illness. CHWs are full-time, voluntary workers who play a very key role in extending services to Rwanda's village communities. The CHWs are supervised most directly by the cell coordinator and the in-charge of community services at the catchment-area of the health center. CHWs now use Rapid SMS to submit reports and communicate alerts to the district level and to hospitals or health centers regarding any maternal or infant deaths, referrals, newly identified pregnant women, and newborns in the community.

In 2010, the Government of Rwanda introduced FP as a component of the national community health policy, and CHWs were trained not only to counsel but also to provide contraceptive methods including pills, injectables, cycle beads (for use with natural FP), and condoms. This program was first piloted in three districts and later scaled nationwide.

Responsibilities of Community Health Workers

Three CHWs, with clearly defined roles and responsibilities, operate in each village of approximately 100–150 households. **ASMs** have been trained to identify pregnant women, make regular follow-ups during and after pregnancy, and encourage deliveries in health facilities where skilled health workers are available. In addition to **following up pregnant women and their newborns,** the ASM also **screens children for malnutrition, provides contraceptives** (pills, injectables, cycle beads, and condoms), promotes **prevention of Non-Communicable Diseases (NCDs)** through healthier lifestyles, **preventive and behavior change activities** and carries out **household visits.**

Between 2008 and 2011, Rwanda introduced ICCM of childhood illness (for childhood pneumonia, diarrhea, and malaria) nationwide. **Binômes** were trained and equipped to: (a) **provide ICCM** (assessment, classification, and treatment or referral of diarrhea, pneumonia, malaria, and malnutrition in children younger than 5 years of age; including treatment with antibiotics, zinc, and antimalarials) (b) malnutrition screening (c) community-based provision of contraceptives, (d) DOT for TB, (e) prevention of NCDs, (f) preventive and behavior change activities and (g) household visits. They are in charge to detect cases of acute illness in need of referral, and to submit monthly reports.

Supervision

There are two community health workers, called “cell coordinators”, who are heads of all CHWs at the cell level, and whose aim is to follow up, and thereby strengthen, CHWs’ activities.

The specific roles and responsibilities of the cell coordinator at the cell level include the following:

1) Visiting of community health workers in order to monitor their activities on a monthly basis.
2) Follow up and verify if CHW has patient registers, and if they are correctly filled out and well-kept.
3) Monitor if drugs are distributed correctly and if these drugs are not expired and well-kept
4) Compilation of reports of drugs that have been used by CHW in that cell and requisition of drugs at health centers
5) Supervision of the binome and a household that was recently attended to by a CHW
6) Check if CHW does post-visit for children she/he recently treated
7) Supervise CHW on how well she/he is able to sensitize the community on family planning usage
8) Verification of reports brought for compilation if they have been sent by telephone

(m’Ubuzima)

The cell coordinator is aided by an assistant cell coordinator, who is responsible for:

- Monitor if the ASM has registers and these registers are filled correctly
- Follow up and see if the ASM refers pregnant women for ANC visits at the health center (HC)
- Follow up and verify if the ASM has sent RapidSMS reports for pregnant mothers confirmed by health provider
- Verify if the ASM has Misoprostol drugs and the drugs are not expired

Place of CHWs in the health system

Health services are provided at different levels of the health care system – in communities, at health posts (HP), health centers (HC), district hospitals (DH), and referral hospitals – and by different types of providers – public, confessional, private-for-profit and NGO. At all levels, the sector is composed of administrative structures and implementing agencies. The area of CHW’s activities is the village.

At the lowest level, those in charge of community health activities at the health centers administratively supervise CHWs.

At the sector level, there are Health Center Committees that provide oversight on the work from various units in the health center, its outreach, supervision activities, and general financial controls.

At the district level, one finds district hospitals (DH), district pharmacies, community-based health insurance (CBHI) committees, and HIV/AIDS committees.

Financial support to CHWs

The CHWs receive financial compensation through performance based financing, or PBF, for delivering a certain number of health services. Thirty percent of the total PBF funds are shared among CHW members while 70% is deposited in the collective funds of CHW cooperatives.

Selection, training, and retention of Community Health Workers

CHWs come from the villages in which they live. They must be able to read and write and be between the ages of 20 and 50 years. They also must be willing to volunteer and be considered by their peers to be honest, reliable, and trustworthy. They are elected by village members in a process that involves gathering the volunteers and villagers on the last Saturday of the month (Umuganda, or community service day) and voting “with their feet” in a literal sense. The process has been described (in conversation) as one that involves community members lining up in front of the person they support. The individual with the most support is recruited.

Within each of the villages (Umudugudu), Binômes are trained in community-based integrated management of childhood illnesses (IMCI) by preparing them to be first responders to a number of common childhood illnesses, including pneumonia, diarrhea, and malaria. The CHWs are also trained on when and how to refer severe cases to the health facility. IMCI refresher training is provided through a supportive supervision model, where the supervisor conducts training to strengthen the CHW’s knowledge and skills in providing quality case management services in their communities.

Another example of program-specific training is the ten-day training for community-based provision of FP services.

In 2009, the MOH introduced Community Performance-Based Funding (CPBF) as a way to motivate CHWs. Community Health worker Cooperatives are organized groups of CHWs that receive and share funds from the MOH based on the achievement of specific targets established by the MOH. Each health center in Rwanda supervises the CHWs that make up one CHW cooperative. By linking incentives to performance, the MOH hoped to improve quality and utilization of health services.

Impact of Community Heath Program and challenges

The most important achievements in the health sector include an increase in facility based deliveries, the introduction of maternal and child death audits at all health facilities, an increase in vaccination coverage. CHW follow-up of all pregnant women, and provision of community-based FP services. CHWs are currently testing all suspected cases of malaria with a rapid diagnostic test and providing treatment when indicated to children younger than 5 years of age who have malaria within 24 hours.

The challenges faced by the Rwanda CHW program are similar to challenges faced by CHW programs in other countries. These include (1) the financial and administrative difficulties in supporting and continuing to build the capacity of CHWs as they increase in number and as the scope of their work expands; (2) the challenge of supervising and effectively equipping CHWs to perform their duties; and (3) low community participation in the health sector and the strong influence of traditional beliefs and traditional medicines.

As the number of CHWs has risen rapidly in Rwanda and as their tasks have increased, the Government of Rwanda faces a constant battle to increase the capacity of CHWs and to provide them with the equipment and supplies they need. Refresher trainings are too few and provision of essential equipment is delayed due to insufficient financial resources. Field supervision of CHWs and the transfer of skills and knowledge to the communities to foster ownership and enhance sustainability is a continuing challenge. Each CHW is supposed to be supervised by either the In-Charge of Community Health or the cell coordinator on monthly basis. However, recent findings show that supervisory visits occur only quarterly, if that.

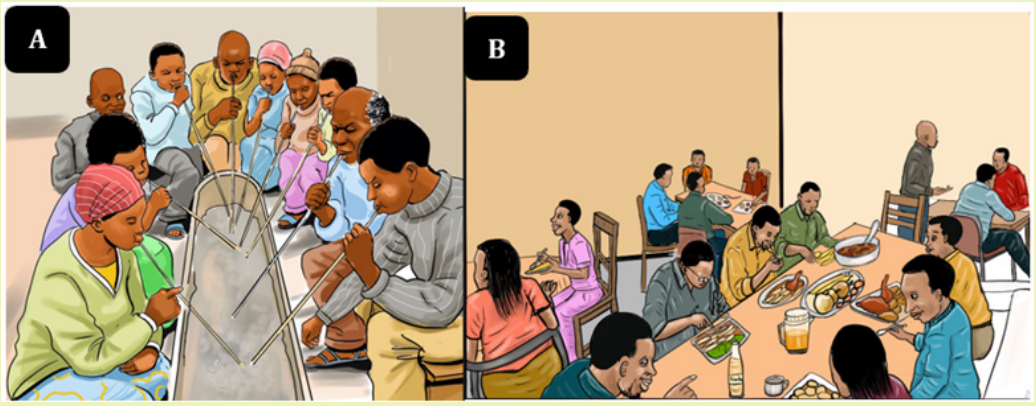
Self-assessment 5.1.5

1) Discuss the responsibilities of an ASM
2) Explain the main activities of Binômes
3) How are CHWs selected?
4) Identify the coverage area of CHW activities.
5) Discuss the issues encountered by CH program in our country

5.1.6. Characteristics of a community

Learning activity 5.1.6

Observe the images below and answer to the questions:



1) What those people in picture A and B have in common?
2) According to your observation, where those people may be living?
3) Discuss the difference between people on picture A and those on pictures B.

Human beings are social creatures. All of us, with rare exception, live out our lives in the company of other people. Communities are an essential and permanent feature of the human experience. The communities in which we live and work have a profound influence on our collective health and well-being.

The community is a territorial group with shares a common soil as well as shared way of life. People living in the same locality come to have a distinctive community life. The community is more than the locality it occupies. It is also sentiment. They share common memories and traditions, customs and institutions. Today none of us belong to one inclusive community. Under modern conditions attachment to local community is decreasing.

Meaning of community can be better understood if we analyze its characteristics or elements. These characteristics decide whether a group is a community or not. However, generally, community has the following 13 most important characteristics or elements:

1) A group of people

A group of people is the most fundamental or essential characteristic or element of community. This group may be small or large but community always refers to a group of people. Because without a group of people we can't think of a community, when a group of people live together and share a common life and binded by a strong sense of community consciousness at that moment a community is formed. Hence a group of people is the first pre-requisites of community.

2) A definite locality

It is the next important characteristic of a community. Community is a territorial group. A group of people alone can't form a community. A group of people forms a community only when they reside in a definite territory. The territory need not be fixed forever. A group of people like nomadic people may change their habitations. But majority community are settled and a strong bond of unity and solidarity is derived from their living in a definite locality.

3) Community Sentiment

It is another important characteristic or element of community. Without community sentiment a community can't be formed only with a group of people and a definite locality. Community sentiment refers to a strong sense of awe feeling among the members or a feeling of belonging together. It refers to a sentiment of common living that exists among the members of a locality. Because of common living within an area for a long time a sentiment of common living is created among the members of that area. With this the members emotionally identify themselves. This emotional identification of the members distinguishes them from the members of other community.

4) Naturality

Communities are naturally organized. It is neither a product of human will nor created by an act of government. It grows spontaneously. Individuals became the member by birth.

5) Permanence

Community is always a permanent group. It refers to a permanent living of individuals within a definite territory. It is not temporary like that of a crowd or association.

6) Similarity

The members of a community are similar in a number of ways. As they live within a definite locality they lead a common life and share some common ends. Among the members similarity in language, culture, customs, and traditions and in many other things is observed. Similarities in these respects are responsible for the development of community sentiment.

7) Wider Ends:

A community has wider ends. Members of a community associate not for the fulfilment of a particular end but for a variety of ends.

These are natural for a community.

8) Total organized social life:

A community is marked by total organized social life. It means a community includes all aspects of social life. Hence a community is a society in miniature.

9) A Particular Name:

Every community has a particular name by which it is known to the world. Members of a community are also identified by that name. For example, people living in sector of Nkombo is known as “Abanyenkombo”.

10) No Legal Status:

A community has no legal status because it is not a legal person. It has no rights and duties in the eyes of law. It is not created by the law of the land.

11) Size of Community:

A community is classified on the basis of its size. It may be big or small. Village is an example of a small community whereas a nation or even the world is an example of a big community. Both the type of community is essential for human life.

12) Concrete Nature:

A community is concrete in nature. As it refers to a group of people living in a particular locality we can see its existence. Hence it is concrete.

13) A community exists within society and possesses distinguishable structure which distinguishes it from others.

Specifically, different types of community exist and they have their particular characteristics including the ones described below:

a. Characteristics of village/rural Community:

The village people have a sense of unity. The relationship between people is intimate. They personally know each other; structurally and functionally the village is a unit.

In the village, people assist each other and thus they have close neighborhood relations. In the village the joint family system is retained. The agricultural occupation requires the cooperation of all the family members.

The People in the villages have deep faith in religion and duties. The village people lead a simple life. Their behavior is natural and not artificial. They are free from

mental conflicts. They are hard-working; their level of moralities is high. Social crimes are less.

Ancient village community was a very small group of ten or twenty families. The feeling of familiarity was so great that if a child wandered off from the home, the parents had nothing to worry because there are numerous relatives in the village. They laid a common property. Due to lack of communication and transport the members of the community were separated due to distance.

In the modern village community, there is a rise of industrialism. Now urban group began to dominate civilization. Urbanization is increasing and dominant rural. Social forms are changing rapidly.

Rural people follow the urban forms of life. Kinship bond is broken due to increased size and mobility of population. Land is no longer cultivated jointly. They continue to work the land but then try to live in the mode of the city. Rural social forms are changed due to urbanization.

Rural communities may have their specific **major Problems such as:**

- Health problems, the most common being: Malnutrition, especially in under – five-year children; communicable diseases and infection and child deaths and maternal deaths and clean water accessibility.
- Education problems – the problems of illiteracy, school dropouts, few teachers, also lack of equipment and insufficient buildings or in need of repair child labor etc.
- Problems related to transport and communications – lack of good roads, especially in rainy season, causes problems of supplies, marketing and taking the sick to hospital, etc. The problem of villages being cut off from other communities and urban facilities, results in slow progress and development.
- Problems concerning agriculture – the farmer may have problems such as insufficient water supply, especially in failure of monsoon, electricity cuts, and repair of pump-sets, tractors etc. Delay in getting supplies of seed, fertilizers, especially if he has no capital reserves.
- Labor problems – laborers may not be available when needed, or coolly demands are high. Procurement price given by Government may be too low, or demand for products is low. Sickness and death of flocks and herds (sheep and cattle).
- Population and employment problems– Agriculture can no longer provide enough for the growing population in rural areas. Some rural communities have taken up handloom weaving or other small industries, but these are not without many problems. Young men leave the village for urban areas in search of jobs. Sometimes whole groups of families migrate to a distant place to work for a contractor (building, mining and other project). They get

advances from the contractor to buy food, and soon may become 'bonded laborers' and never get bat to their own village.

b. Characteristics of urban Community:

Home decreasing is a disturbing feature of city community. The home problem in a big city is very acute. The middle class have insufficient accommodation. The child doesn't get any play space. Energy and speed are the traits of a city. The people work at a speed, day and night which stimulates other to work. People indulge in too many activities. Cities are consumers of population. Facilities for preserving health such as hospitals and medical specialist are many and excellent. City has more heterogeneous than the village. It is most favorable propagation ground of new biological and cultural hybrids. The personal traits, the occupations, the cultural and the ideas of the members of the urban community vary widely.

Class extremes characterize urban community. In a city, the people rolling in luxury and living, in grand mansion as well as people live in street. The best forms of ethical behavior and the worst racketeering are both to be bound in cities. Superior creativeness and chronic unemployment are similar. The city is the home of opposites. In some cities, residents may treat the strangers they meet as not human beings. They meet with speak without knowing each other's name. A citizen may live for several years in a city and may not know the names of one-third of the people who live in the same city area.

Life is quite different in towns and cities than in the village. Traditions, customs and modes do not have much influence over those living in urban areas. Family life is less disciplined, and there is no community support. There is much more mixing among people of very different backgrounds. This brings about changes in habits and attitudes. Family conflicts are common. For the individuals, and for families coming to live in the urban area, conscious efforts need to be made to form good friendships and to live in harmony with others. There are many opportunities for joining social groups for various activities. People need to take up the challenge for forming a new community even in the city, for mutual help and action to solve problems.

The main urban problems may be listed as follows:

a) Growth of slums

b) Lack of employment, leading to poverty, under – nutrition, disease, and anti-social activities. Failure of people to adjust, causing mental illness or delinquency.

c) Crime and delinquency, begging and prostitution.

d) Overcrowding in dwellings, buses and streets.

e) Failure in administration (e.g. public services such as refuse collection and disposal) to cope with the rapid growth of the population.

f) Road accidents.

g) Health problems due to overcrowding and to stress of urban living.

h) Political and industrial unrest and conflicts.

c. Characteristics of common-interest Community

A community also can be identified by a common interest or goal. A collection of people, even if they are widely scattered geographically, can have an interest or goal that binds the members together. This is called a **common-interest community**. The members of a church in a large urban area, the members of a national professional organization, and women who have had mastectomies are all common-interest communities. Sometimes, within a certain geographic area, a group of people develop a sense of community by promoting their common interest. Disabled individuals scattered throughout a large city may emerge as a community through a common interest in promoting adherence to federal guidelines for wheelchair access, parking spaces, toilet facilities, elevators, or other services for the disabled.

The residents of an industrial community may develop a common interest in air or water pollution issues, whereas others who work but do not live in the area may not share that interest. Communities form to protect the rights of children, stop violence against women, clean up the environment, promote the arts, preserve historical sites, protect endangered species, develop a smoke-free environment, or provide support after a crisis. The kinds of shared interests that lead to the formation of communities vary widely.

Common-interest communities whose focus is a health-related issue can join with community health agencies to promote their agendas. A group's single-minded commitment is a mobilizing force for action. Many successful prevention and health promotion efforts, including improved services and increased community awareness of specific problems, have resulted from the work of common-interest communities.

d. Community of Solution

A type of community encountered frequently in community health practice is a group of people who come together to solve a problem that affects all of them. The shape of this community varies with the nature of the problem, the size of the geographic area affected, and the number of resources needed to address the problem. Such a community has been called a community of solution. Example: club against HIV/AIDS

5.1.7. Characteristics and functions of a healthy community

This sub-unit discusses the following four points: characteristics of healthy community, roles and responsibilities of a community health nurse, qualities of a community health nurse and functions of community health nursing.

a. Characteristics of a Healthy Community

A healthy community is one in which all residents have access to a quality education, safe and healthy homes, adequate employment, transportation, physical activity, and nutrition, in addition to quality health care. Unhealthy communities lead to chronic disease, such as cancers, diabetes, and heart disease.

Just as health for an individual is relative and will change, all communities exist in a relative state of health. A community's health can be viewed within the context of health being more than just the absence of disease, and including things that promote the maintenance of a high quality of life and productivity.

Just as there are characteristics of healthy individuals, so are there characteristics of healthy communities. These include the following:

- The healthy community ensures that community resources are available to all members and groups within the community. It ensures there is access to appropriate health care services that focus on both treatment and prevention for all members of the community; a clean and safe physical environment; and roads, schools, playgrounds, and other services to meet the needs of the people in that community
- Emergency preparedness: a healthy community has a well-organized base of community resources available to meet the needs and to intervene in a crisis or natural disaster.
- Ability to solve problems. Community detects, investigates, and dissects problems and collaborates and coordinates a response among members and groups to meet their identified needs.
- Communication through open channels. It ensures that communication remains open and information flows among all members and groups in every direction within the community.
- Resolution of disputes through legitimate mechanisms
- The healthy community ensures there is participation by citizens in decision making and subgroups participate in community affairs. It provides opportunities for and encourages participation of individuals and groups in decision making related to issues affecting the community.

- A high degree of wellness among its citizens: the healthy community focuses on promoting a high level of wellness and health among all members and populations within the community.
- A healthy community has an awareness of its members, populations, and subgroups as being part of the community.
- The historical and cultural heritage is promoted and celebrated.
- There is a diverse and innovative economy.
- There is a sustainable use of available resources for all.

b. Roles and Responsibilities of Community Health Nurse:

Some key roles and responsibilities of community health nurse are discussed below:

A community health nurse performs various functions while she works in any defined community health setting. In general, the community health nurse performs the following functions according to her roles:

a) Clinician Role or Direct care provider

She provides a continuous and comprehensive care to the family, group of people and community at large. She emphasizes more on promotive and preventive health care. The community health nurse approaches the family and persuades them to implement promotive and preventive measures. Care during illness is beneficial gaining acceptance, trust and confidence.

She also provides care during illness for which usually the family members come forward to seek help. As care is given, the nurse educates and helps the family members to develop their abilities and overcome their barriers so that they can take care of their health and nursing needs, promote their health and prevent illness. The care is provided at home, clinic, school, work place etc.

b) Health educator:

The community health nurse educates the individual, family, groups of people and the community at large. Health education thus given focuses on promoting health, preventing illness and aspects related to care during illness and rehabilitation & disability prevention. The nurse conducts planned health education sessions for organized community groups e.g., school children, antenatal mothers, eligible couples, elderly etc. Health education for the family is planned and implemented as part of the family care plan. The community nurse assesses the knowledge, attitudes, values, beliefs, behaviours, practices, stage of change, and skills of the community people and provides health education according to knowledge level. The community health nurses are involved in giving incidental/casual/spontaneous health education according to the situation. (Washing of hands before a child eats).

c) Counselor:

The community health nurse helps individual, families and the community at large to recognize and understand their problems to be solved, find solutions with-in resources and implement feasible and acceptable solutions.

d) Resource person:

The community health nurse explores community resources in terms of money, manpower, material, agencies etc. She makes use of these resources in helping individual, family groups and community to meet their health and nursing needs.

e) Care manager/Managerial Role:

The community health nurse implements the care which is planned for the family and community. She directly provides the care with the active participation of family and community members. She makes use of family and community resources. She guides the family and community and refers when required. She maintains a record of the care given to families and the community. The community health nurse evaluates the effectiveness of care given in terms of change in health status, health behavior, reduction in illness, improvement in clinic attendance-immunization & rate of utilization of the community health services.

As a manager the nurse exercises administrative direction towards the accomplishment of specified goals by assessing clients' needs, planning and organizing to meet those needs, directing and controlling and evaluating the progress to assure that goal are met.

f) Planner:

The community health nurse while giving comprehensive care to family and community, she/he makes a plan on the basis of identified health problems and health & nursing needs. She/he plans with other team members to provide appropriate care.

g) Research Role:

In the researcher role community health nurses engage in systematic investigation of any untoward change in health behavior and health status of the community, people, their surroundings, and unusual occurrence of disease. She/he carries out collection, and analysis of data to solve problems and enhance community health nursing practice. Based on the research results, a community nurse improve their service quality and improve their health accordingly, for examples by providing information, health education to people to improve their behavior and health status, working with the family and providing direct care during illness, notification to health authority about communicable disease.

h) Advisor:

The community health gives some suggestions on practical situation which requires immediate actions and where there is little scope of health education. For example, in case of a client with diabetes mellitus, the community health nurse advices with concern on the foods to be included and avoided according to the socio –economic condition of the individual & family.

i) Advocate Role:

The issue of clients' rights is important in health care today. Every patient or client has the right to receive just equal and humane treatment. A community health nurse is an advocate of patient's rights about their care. They encourage the individuals to take the right food for maintaining health, the right drugs for the treatment, and the right services at the right place where ever needed. They provide sufficient information to make necessary health care decisions, promote community awareness of significant health problems.

j) Collaborator Role:

Community health nurses seldom practice in isolation. They must work with many people including clients, other nurses, physicians, social workers, and community leaders, therapists, nutritionists, occupational therapists, psychologists, epidemiologists, biostatisticians, legislators, etc. as a member of the health team.

k) Leader Role:

Community health nurses are becoming increasingly active in the leader role. As a leader, the nurse instructs influences or persuades others to effect change that will positively affect people's health. The leadership role's primary function is to use a change of health policy based on community people's health; thus, the community health nurse becomes an agent of change.

c. Qualities of a community health nurse

A best community health nurse is characterized by the following qualities:

1. Interest in community health nursing.
2. Good interpersonal relationship skills.
3. Interested in people.
4. Emotional stability.
5. Good communicability.
6. Guiding & helping nature.
7. Sensitive observation.
8. Good listener.
9. A friendly disposition.

10. Initiative/creativity
11. Resource fullness.
12. Endurance & patience.

d. Functions of community health nursing

The four core functions of community health nursing practices are displayed below:

1. Identification of community culture and resources that lead as a key factor in the community health care delivery system.
2. Evaluate community health conditions, health risks, and problems to identify the health-care demands of the people.
3. Plan and implementation of comprehensive community health interventions, care, services, and programs.
4. Develop health policy at the local community level to drive policies/ agreements at the state and national levels for collaborative endeavors and actions.

Self-assessment 5.1.7

1) Give the four core functions of community health nursing practice
2) Mention any 4 characteristics of a healthy community
3) Explain any 2 roles and responsibilities of a community health nurse.

5.2. Determinants of health and the factors affecting community health

Learning activity 5.2

Get community health nursing books and/or internet resources and provide the answers to the following questions:

1) Explain any 2 determinants of health
2) Write a short description on each of the following factors affecting the community health nursing: Physical factors, Social/Cultural factors, Community organization, and Individual behavior

5.2.1. Determinants of health

Determinants of Health and Disease: The health status of a community is associated with a number of factors, such as health care access, economic conditions, social and environmental issues, and cultural practices, and it is essential for the community health nurse to understand the determinants of health and recognize the interaction of the factors that lead to disease, death, and disability. Indeed, individual biology and behaviors influence health through their interaction with each other and with the individual's social and physical environments. Thus, policies and interventions can improve health by targeting detrimental or harmful factors related to individuals and their environment. Some causes of death resulting from individual behavior are: tobacco, poor diet and physical inactivity, alcohol consumption and its association with accidents, suicides, homicides, and cirrhosis and chronic liver disease. Other leading causes of death are microbial agents, toxic agents, motor vehicle crashes, firearms, sexual behaviors and illicit use of drugs.

Although all of these causes of mortality are related to individual lifestyle choices, they can also be strongly influenced by population-focused policy efforts and education. For example, the prevalence of smoking may be fallen dramatically, largely because of legal efforts (e.g., laws prohibiting sale of tobacco to minors and much higher taxes), organizational policy (e.g., smoke-free workplaces), and education. Likewise, concerns about the widespread increase in incidence of overweight and obesity may lead to population-based measures to address the issue (e.g., removal of soft drink, regulations prohibiting the use of certain types of fats in processed foods).

Indeed, at the population level, better health can be attributed to higher standards of living, good nutrition, a healthier environment, and having fewer children. Furthermore, public health efforts, such as immunization and clean air and water, and medical care, including management of acute episodic illnesses (e.g., pneumonia, tuberculosis) and chronic disease (e.g., cancer, heart disease, diabetes mellitus), may also contribute significantly to the increase in life expectancy. Community and public health nurses should understand these concepts and appreciate that health and illness are influenced by a web of factors, some that can be changed (e.g., individual behaviors such as tobacco use, diet, physical activity) and some that cannot (e.g., genetics, age, gender). Other factors (e.g., physical and social environment) may require changes that will need to be accomplished from a policy perspective. Community health nurses must work with policy makers and community leaders to identify patterns of disease and death and to advocate for activities and policies that promote health at the individual, family, and population levels.

5.2.2. The factors affecting community health

The factors affecting community health can be grouped into: Physical factors, Social/Cultural factors, Community organization, and Individual behavior

a. Physical factors

- Industrial development: Communities that are industrially developed are more likely to be affected by numerous diseases due to the toxic waste products from the industries that are released into water bodies and the atmosphere and due to congestion of settlement leading to slum development hence contagious diseases compared to areas that are not industrially developed. Water contamination from industrial discharge and air pollution may be ones of the consequences of industrial development.
- Community size: A densely populated or over populated community can easily be attacked by communicable diseases
- Geographical location: Some communities are more prone to diseases due to the geographical location. For example, some communities located in swampy areas are more prone to diseases, especially during heavy rains these communities are affected by floods which can lead to manipulation of organisms causing disease. If the water is stagnant, there is risk of spread of organisms which cause diseases such as malaria and diarrhea disease.
- Environment: A clean environment is very vital to the proper health of a community which minimizes the occurrence and transmission of diseases, unlike a dirty environment which easily leads to outbreak of diseases.

b. Social/cultural factors

- Traditions Beliefs: Beliefs or traditions such as female genital mutilation (FGM) possessed by communities greatly affect the health of its people.
- Economy: A community that is economically well off has low chances of suffering from disease breakouts because they have proper health care and water drainage systems unlike a poor community.
- Government: since the government involves planning, implementing and provision of community services such as water supply, medical supplies and other needs which can directly affect the community health
- Educational factors: poor education or illiteracy affects the health of a community when people don't have education on how they can prevent themselves from diseases. For example, health education on the use of mosquito treated nets to prevent malaria, health education on the environmental hygiene so as to prevent diseases such as cholera and trachoma.

c. Community organization

This is about the ways in which communities organize their resources such as taxes which can be very helpful in control of diseases and supply of sufficient and

efficient medical care, even in times of crisis. Unlike communities without proper accountability of their taxes which can partly be allocated to the health sector, may suffer from lack of adequate resources to prevent diseases, protect and promote the health of its citizens.

d. Individual behavior

Community health is greatly influenced by individuals, their personal health, habits, etc.

In order to achieve a healthy community, it requires a team work for example in the following in activities:

- Proper disposal of waste products from individuals' compound,
- Clearing all stagnant water in the compound to prevent harboring of mosquitoes,
- Active smokers to quit smoking to avoid passive smokers thus preventing lung cancer, Abstinence from sexual activities and for sexually active individuals to use protection to prevent the spread of HIV/AIDs and STDs etc.

Thus proper individual healthy living can greatly promote a healthy community.

Self-assessment 5.2

1) Describe the 4 factors that affect the health of the community
2) Explain the issues related to biology and individual behavior as determinants of health

5.3. Community health needs assessment

Learning activity 5.3

Using internet and Community Health Nursing Textbooks; read about community health needs assessment and respond to the following questions

1) What is the meaning of community health assessment?
2) Discuss types of community assessment.
3) Describe the methods of community assessment
4) Identify the sources of data in community assessment

The primary concern of community health nurses is to improve the health of the community. This process involves using demographic and epidemiological methods to assess the community's health and diagnose its health needs.

After considering the importance of community partnerships and coalitions, the community health nurse is ready to determine the community's needs. Assessment is the key initial step of the nursing process. Assessment for nurses means collecting and evaluating information about a community's health status to discover existing or potential needs and assets as a basis for planning future action.

Assessment involves two major activities. The first is **collection of pertinent data,** and the second is **analysis and interpretation of data.** These actions overlap and are repeated constantly throughout the assessment phase of the nursing process. While assessing a community's ability to enhance its health, the nurse may simultaneously collect data on community lifestyle behaviors and interpret previously collected data on morbidity and mortality.

Community needs assessment is the process of determining the real or perceived needs of a defined community. In some situations, an extensive community study may be the first priority; in others, all that is needed is a study of one system or even one organization. At other times, community health nurses may need to perform a quick examination or "windshield survey" to familiarize them with an entire community without going into any depth.

The next text discusses the types of community needs assessment, the methods of community health assessment, and sources of data.

a. Types of Community Needs Assessment

Although it is difficult to determine the type of assessment needed in advance, understanding the various types of community assessment in advance helps to facilitate your decision. Here below there is a short description of the types of community needs assessment.

Familiarization or Windshield Survey

A familiarization assessment is a common starting place in evaluation of a community. It involves studying data already available on a community, then gathering a certain amount of firsthand data in order to gain a working knowledge of the community. Such an approach may utilize a **windshield survey**—an activity often used by nursing students in community health courses and by new staff members in community health agencies. Nurses drive (or walk) around the community of interest; find health, social, and governmental services; obtain literature; introduce them-selves and explain that they are working in the area; and generally, become familiar with the community and its residents. This type of assessment is needed whenever the community health nurse works with families, groups, organizations, or populations. The windshield survey provides knowledge of the context in which these aggregates live and may enable the nurse to better connect clients with community resources.

Problem-Oriented Assessment

A second type of community assessment, **problem-oriented assessment**, begins with a single problem and assesses the community in terms of that problem.

The problem-oriented assessment is commonly used when familiarization is not sufficient and a comprehensive assessment is too expensive. This type of assessment is responsive to a particular need. The data collected will be useful in any kind of planning for a community response to the specific problem. Data should address the magnitude of the problem to be studied (e.g., prevalence, incidence), the precursors of the problem, information about population characteristics, along with the attitudes and behaviors of the population being studied.

Community Subsystem Assessment

In community subsystem assessment, the community health nurse focuses on a single dimension of community life. For example, the nurse might decide to survey churches and religious organizations to discover their roles in the community. What kinds of needs do the leaders in these organizations believe exist? What services do these organizations offer? To what extent are services coordinated within the religious system and between it and other systems in the community? Community subsystem assessment can be a useful way for a team to conduct a more systematic community assessment. If five members of a nursing agency divide up the ten systems in the community and each person does an assessment of two systems, they could then share their findings to create a more comprehensive picture of the community and its needs.

Comprehensive Assessment

Comprehensive assessment seeks to discover all relevant community health information. It begins with a review of existing studies and all the data presently available on the community. A survey compiles all the demographic information on the population, such as its size, density, and composition.

Key informants are interviewed in every major system—education, health, religious, economic, and others. Key informants are experts in one particular area of the community or they may know the community as a whole. Examples of key informants would be a school nurse, a religious leader, key cultural leaders, the local police chief or fire captain, a mail carrier, or a local city council person. Then, more detailed surveys and intensive interviews are performed to yield information on organizations and the various roles in each organization. A comprehensive assessment describes the systems of a community, and also how power is distributed throughout the system, how decisions are made, and how change occurs.

Because comprehensive assessment is an expensive, time-consuming process, it is not often undertaken. Performing a more focused study, based on prior knowledge of needs is often a better and less costly strategy. Nevertheless, knowing how to conduct a comprehensive assessment is an important skill when designing smaller, more focused assessments.

Community Assets Assessment

The final form of assessment presented here is **assets assessment,** which **focuses on the strengths and capacities of a community rather than its problems**. The type of assessment depends on variables such as the needs that exist, the goals to be achieved, and the resources available for carrying out the study.

Assets assessment begins with what is present in the community. The capacities and skills of community members are identified, with a focus on creating or rebuilding relationships among local residents, associations, and institutions to multiply power and effectiveness. This approach requires that the assessor **looks for the positive.** Assets assessment has three levels:

1. Specific skills, talents, interests, and experiences of individual community members such as individual businesses, cultural groups, and professionals living in the community.
2. Local citizen associations, organizations, and institutions controlled largely by the community such as libraries, social service agencies, voluntary agencies, schools, and police.
3. Local institutions originating outside the community controlled largely outside the community such as welfare and public capital expenditures.

The key, however, is linking these assets together to enhance the community from within. The community health nurse's role is to assist with those linkages.

b. Community Assessment Methods

Community health needs may be assessed using a variety of methods. The choice of assessment method varies depending on the reasons for data collection, the goals and objectives of the study, and the available resources. It also varies according to the theoretical framework or philosophical approach through which the nurse views the community. In other words, the community health nurse's theoretical basis for approaching community assessment influences the purposes for conducting the assessment and the selection of methodology.

Regardless of the assessment method used, data must be collected. Data collection in community health requires the exercise of sound professional judgment, effective communication techniques, and special investigative skills. Four important methods are discussed here: surveys, descriptive epidemiologic studies, community forums or town meetings, and focus groups.

Surveys

A survey is an assessment method in which a series of questions is used to collect data for analysis of a specific group or area. Surveys are commonly used to provide a broad range of data that will be helpful when used with other sources or if other sources are not available.

To plan and conduct community health surveys, the goal should be to determine the variables (selected environmental, socioeconomic, and behavioral conditions or needs) that affect a community's ability to control disease and promote wellness. The nurse may choose to conduct a survey to determine such things as health care use patterns and needs, immunization levels, demographic characteristics, or health beliefs and practices.

The survey method involves **self-report,** or **response to predetermined questions,** and can include questionnaires, telephone or in person interviews. It can also be combined with other measures.

The process of gathering data consists to interview key informants in the community. These may be knowledgeable residents, elected officials, or health care providers. It is essential that the community health nurse recognize that the views of these people may not reflect the views of all residents.

Descriptive Epidemiologic Studies

A second assessment method is a **descriptive epidemiologic study,** which examines the amount and distribution of a disease or health condition in a population by person (Who is affected?), by place (Where does the condition occur?), and by time (When do the cases occur?).

In addition to their value in assessing the health status of a population, descriptive epidemiologic studies are useful for suggesting which individuals are at greatest risk and where and when the condition might occur. They are also useful for health planning purposes and for suggesting hypotheses concerning disease etiology.

Geographic Information System Analysis

The geographic information systems (GIS) "mapping and visualization of health disparities and their relationship to the geographical location of health care services can allow for better resource allocations to disparate and underserved populations".

It is now commonly used in community health assessment, in general, and for specific populations and problems. For example, GIS has been useful in identifying air pollutant risk exposure, planning or rapid public health response during a natural disaster, and identification of colorectal screening resources for medically underserved communities.

GIS data are often combined with field observation or census data and other survey results to provide powerful visualizations of data for analysis and intervention.

Community Forums or Town Hall Meetings

The community forum or town hall meeting is a qualitative assessment method designed to obtain community opinions. It takes place in the neighborhood of the people involved, perhaps in a school gymnasium or an auditorium. The participants are selected to participate by invitation from the group organizing the forum.

Members come from within the community and represent all segments of the community that are involved with the issue. For instance, if a community is contemplating building a swimming pool, the people invited to the community forum might include potential users of the pool (residents of the community who do not have pools and special groups such as the Girl Scouts, elders, and disabled citizens), community planners, health and safety personnel, and other key people with vested interests. They are asked to give their views on the pool: Where should it be located? Who will use it? How will the cost of building and maintaining it be assumed? What are the drawbacks to having the pool? Any other pertinent issues the participants may raise are included. This method is relatively inexpensive, and results are quickly obtained. A drawback of this method is that only the most vocal community members, or those with the greatest vested interests in the issue, may be heard.

This format does not provide a representative voice to others in the community who also may be affected by the proposed decision. This method is used to elicit public opinion on a variety of issues, including health care concerns, political views, and feelings about issues in the public eye, such as gangs.

Focus Groups

This fourth assessment method, focus groups, is similar to the community forum or town hall meeting in that it is designed to obtain grassroots opinion. However, it has some differences. First, only a small group of participants, **usually 5 to 15 people,** is present. The members chosen for the group are homogeneous with respect to specific demographic variables. For example, a focus group may consist of female community health nurses, young women in their first pregnancy, or retired businessmen.

Leadership skills are used in conjunction with the small group process to promote a supportive atmosphere and to accomplish set goals. The interviewer guides the discussion according to a predetermined set of questions or topics. The best use of focus group data includes not only analysis of individual communications, but of the interactions between participants.

Nurses who conduct focus groups must carefully select participants, formulate questions, and analyze recorded sessions. These sessions can produce greater interaction and expression of ideas than surveys and may provide more insight into an aggregate's opinions. In addition to encouraging community participation in the identification of assets and needs, focus groups may lay the groundwork for community involvement in planning the solutions to identified problems.

Major advantages of focus groups are their efficiency and low cost, similar to the community forum or town hall meeting format. A focus group can be organized to be representative of an aggregate, to capture community interest groups, or to sample for diversity among different population groups. One example is a research study involving youths and adults. Eight focus groups were held to determine perceptions of healthy diet and exercise among parents and children. Whatever the purpose, however, some people may be uncomfortable expressing their views in a group situation.

c. Sources of Community Data

The community health nurse can look in many places for data to enhance and complete a community assessment. Data sources can be primary or secondary, and they can be from international, national, or local sources.

Primary and Secondary Sources

Community health nurses make use of many sources in data collection: Community members, including formal leaders, and informal leaders. The community members can frequently offer the most accurate insights and comprehensive information. Information gathered by talking to people provides **primary data,** because the data are obtained directly from the community. **Secondary sources** of data include people who know the community well and the records such people create in the performance of their jobs. Specific examples are health team members, client records, community health (vital) statistics, census bureau data, reference books, research reports, and community health nurses. Because secondary data may not totally describe the community and do not necessarily reflect community self-perceptions, they may need augmentation or further validation through focus groups, surveys, and other primary data collection methods.

International Sources

International data are collected by several agencies, including the World Health Organization (WHO) and its six regional offices and health organizations. In addition, the United Nations and global specialty organizations that focus on certain populations or health problems, such as the United Nations Children's Fund, are major sources of international health-related data. The WHO publishes an annual report of their activity, and international statistics for diseases and illness trends can be found on the Internet.

Information from these official sources can give the nurse in the local community information about immigrant and refugee populations he serves.

National Sources

Community health nurses can access a wealth of official and nonofficial sources of national data. Official sources develop documents based on data compiled by the government. Example of national data sources: National Institute of Statistics of Rwanda, Ministry of Health, Rwanda through its department like Rwanda Biomedical Center, etc.

d. Steps of community health needs assessment

The following are the required steps in conducting a needs assessment:

1) Identify aggregate for assessment
2) Identify required information
3) Select method of data gathering
4) Develop questionnaire or interview questions
5) Develop procedures for data collection
6) Train data collectors
7) Arrange for a sample representative of the aggregate
8) Conduct needs assessment
9) Tabulate and analyze data
10) Identify needs suggested by data
11) Develop an action plan

Self-assessment 5.3

1) Discuss the Sources of data for community health needs assessment.
2) Describe different methods used for community health assessment.
3) What are the steps in conducting community health needs assessment?

5.4. Basic community interventions

5.4.1. Community education

Learning activity 5.4.1

Using Community Health Nursing Textbooks and internet; read about community education and respond to the following questions:

1) Discuss different methods used for providing a community health education.
2) What do you understand for the factors that affect readiness to learn among community health members?
3) Discuss any four teaching materials used for providing a community health education session.

a. Overview on community health education

Health education is an integral part of the nurse's role in the community for promoting health, preventing disease, and maintaining optimal wellness. Moreover, the community is a vital link for the delivery of effective health care and offers the nurse multiple opportunities to provide appropriate health education within the context of a setting that is familiar to community members.

At the core of health education is the development of trusting relationships based on nurturing and healing interactions, the use of community-based participatory methods that highlight community strengths, and the creation of sustainable collaborations and partnerships

Health education is any combination of learning experiences designed to predispose, enable, and reinforce voluntary behavior conducive to health in individuals, groups, or communities. Its goal is to understand health behavior and to translate knowledge into relevant interventions and strategies for health enhancement, disease prevention, and chronic illness management. Health education aims to enhance wellness and decrease disability; attempts to actualize the health potential of individuals, families, communities, and society; and it includes a broad and varied set of strategies aimed at influencing individuals within their social environment for improved health and well-being.

Aim of health education is not just about giving health information, but also involves the process of changing a person or community towards favorable healthy behaviors and maintaining optimum health.

The most important goal of health teaching in community-based care is to assist the client and family in achieving independence through self-care.

When client learning needs are considered within the context of the client, family and community, care is improved.

Likewise, staff satisfaction improves when teaching results are positive. It is professionally satisfying to prepare a client for discharge and receive subsequent feedback that the discharge was satisfactory. Likewise, it is professionally satisfying for the home care nurse to prepare a client to successfully manage self-care at home. On the other hand, it is stressful when a nurse sees a client with inadequate preparation trying to manage home care unsuccessfully.

Quality health education provides continuity between settings of care. Providing information about diet, activity, medications, equipment, and follow-up appointments enhances self-care capacity.

Community health education is especially a matter of working with community organizations, voluntary bodies, and groups. Informal leadership based on respect and not on the office holdings, is often very influential. Political leadership is usually the most powerful, but professional and voluntary leadership also need understanding and collaboration.

Studying the community: it means especially studying those who have leadership positions in the community, and then the organizations, bodies, and groups through which their influence is spread. To build co-operation with those who have authority can make difference between success and failure in disease control or a health improvement campaign. Informal leadership is of those people who, though holding no offices, are nevertheless respected by particular groups. Such groups may meet for drinking and the exchange of news and gossip. Those who are respected and listened to in these groups can powerfully influence many people's thinking and attitudes, and the co-operation they give to, or withhold from, health staff. The official leadership of greatest importance is the political leadership. Mutual understanding with those who carry the responsibility for the administration is very essential.

Professional leadership in the village is found not only in the agricultural extension service, in education, rural or community development, social welfare, etc. but also in the churches, and sometimes other voluntary bodies. It is necessary to work together closely with all these agencies. For example, a health education campaign which succeeds in persuading people to eat more eggs will lead to a quick rise in the price of eggs unless the agricultural staff also works successfully persuading farmers to produce more eggs.

Schools, Farmers' clubs, literacy programs, Scouts and Guides, Red Cross, women's progress movements, etc. are all interested in health improvement. They can help in health education in substantial and effective way. Their co-operation with programs of the health services can be valuable and fruitful.

No opportunity should be missed to explain health programs to these agencies and to enlist support for particular health education campaigns.

A **community health education program needs to Centre upon a recognized problem** and be well planned. Rumors can do great damage and need to be systematically and quickly contradicted.

The community health nurses need to study and seek to understand their community, its hopes and fears, its personalities and power structure, its priorities and methods of decision making, and also the problems involved in implementing the decisions made.

Working in the community: it depends upon developing and maintaining good working relationships with official leaders, informal opinion leaders, and voluntary leaders. All must be kept informed, taken into our confidence, and have a clear understanding of our plans and objectives. Regular meetings providing for cross representation on their committees can help. Health education is not confined to formal activities but goes an all the time as people meet. Our aim must be to work from within the community.

In **planning community health education:** it is better to start with a problem and to choose one which has widespread importance and which the community recognizes and wants to reduce or eliminate. Scabies, worms, colds, or nuisance pests like rats and flies, can all be important in the thinking and life of a community. Then co-operation and confidence can be built up by actively following the five steps scheme:

- Recognition of the problem
- Analysis of the problem-educational diagnosis
- Educational prescription
- Educational treatment
- Recording and review of results, with evaluation.

Mobilizing the community for action: is the road to success. Community health nurse set targets, to be reached as the work progresses. The community members should be involved in the solving of the community health problems, and wherever it is possible the use of community available resources is advised.

Divisions, rival groups, and damaging rumors are the chief dangers. As health education program moves to success, the confidence created should give rise to growing interest in tackling more serious problems. These can range from maternal and infantile mortality to tuberculosis, measles, or other causes of high morbidity and mortality. Some problems are however so tied to deep-rooted habits and customs that are very difficult to make much headway. Smoking and the resulting respiratory conditions, alcoholism, venereal disease and malaria are examples.

Where a sustained long term health education program is needed it is wise to be sure you have the experience, the resources and the staff to get deeply involved before commencing such program. Skilled advice from a health education specialist can be a substantial help.

b. Factors that affect readiness to learn

Factors that affect readiness to learn are the followings:

Physiologic factors: Age, gender, disease process currently being treated, intactness of senses (hearing, vision, touch, and taste), and preexisting condition.

Psychosocial factors: Sociocultural circumstances, occupation, economic stability, past experiences with learning, attitude toward learning, spirituality, emotional health, self-concept and body image, sense of responsibility for self.

Cognitive factors: Developmental level, level of education, communication skills, primary language, motivation, reading ability, learning style, problem-solving ability.

Environmental factors: Home environment, safety features, family relationships/ problems, caregiver (availability, motivation, abilities), other support systems.

Developmental considerations: It is helpful for the nurse to understand various theories of development. Just as the need to learn will be different at various age levels, the cognitive domain will differ and life experiences will differ. For example, teaching a 6-year-old girl about insulin administration will be different from teaching a 24-year-old woman, which would in turn be different from teaching a 69-year-old woman.

The nurse must consider these factors when developing teaching plans.

c. Learning domains

Teaching and learning occur in three **learning domains:** cognitive, affective, and psychomotor. All three domains must be considered in all aspects of the teaching and learning process. Thus, the nurse must assess the client's need, readiness, and past experience in the cognitive, affective, and psychomotor domains.

Cognitive learning involves mental storage and recall of new knowledge and information for problem solving. Sometimes this domain is referred to as the critical thinking or knowledge domain. An example of cognitive learning is seen in the client who has recently been diagnosed with insulin-dependent diabetes. Not only will this client need information about diet, insulin, and exercise, but he or she will also need to use the information to formulate menus and an exercise plan. In addition, as blood sugar levels fluctuate, a client with diabetes must alter food intake and exercise. All this requires cognitive learning.

Affective learning involves feelings, attitudes, values, and emotions that influence learning. This is also referred to as the attitude domain.

In the last decade the role emotion plays in learning has been speculated to be the most influential of all the domains in impacting motivation, thus the first domain that educators should assess. For example, the client who has just been identified as having diabetes may have to talk about his or her feelings about having diabetes before being ready to learn about insulin. Some of the client's feelings may stem from his or her prior knowledge and preconceived ideas about diabetes.

Psychomotor learning consists of acquired physical skills that can be demonstrated.

This may be referred to as the skill domain. For example, the client with newly diagnosed insulin-dependent diabetes must learn to give self-injections, which will require learning the skill of using syringes.

d. Teaching and levels of prevention

Teaching, whether it is in the acute care or community-based setting, occurs at all levels of prevention. An important goal of teaching is to prevent the initial occurrence of disease or injury through health promotion and prevention activities. The examples of **primary prevention:** A nurse teaching a nutrition class to parents an example of health promotion. A school nurse teaching parents about preventing malaria, childhood injuries focusing on health protection. Teaching parents about the importance of immunization, promotion of healthy lifestyle, food hygiene, weight control, growth and development of children, are also primary prevention.

Secondary prevention teaching is targeted toward early identification and intervention of a condition. A home care nurse teaching the parents of a ventilator dependent child about early signs of upper respiratory infection and when to contact the health facility, breast self-examination and treatment of cancer, is focusing on secondary prevention.

Tertiary prevention: Most teaching in the home setting addresses tertiary prevention because most home care clients have chronic conditions or are postsurgical. Tertiary prevention arises from teaching that attempts to restore health and facilitate coping skills. Examples: skill of self-care for rehabilitation at centre or home (e.g., post stroke, palliative care, care of wound, care for special needs child).

e. Methods of health education

Method	Characteristics	Strength	Weakness
1. Lecture	• Explains a topic • Stimulates audience to think • Influences the group's opinion • Participants are passive listeners • Session ends with questions and answers	• Saves time • Message is clear and concise • Lecture is given on time	• Lack of audience participation • Loss of audience's concentration if the lecture is too lengthy
	• Provides knowledge and information	• Audiences are encouraged to give their opinions • Inexpensive	• Lack of audience participation • Loss of audience's concentration if the lecture is too lengthy
2. Individual counseling	• Individuals are given advice during visits to clinics or at home • Focuses on individual needs	• Privacy is maintained • Able to advise according to individual needs	• Time- consuming
3.Mass media	• Dissemination of information to a large group of people • Utilizes communication techniques such as TV broadcasts, internet, newspapers, radio, magazines and exhibitions • Used during contingency periods when information needs to reach the people fast	• Wide coverage within a short time • Cost-effective • Effective measure during emergencies and epidemics • Instill harmonious social interaction	• Only selective health issues can be broadcast • Lack of immediate feedback • Illiterate people may not be able to benefit from printed media • Unable to ensure health behavior changes

4. Demonstration	• Planned session to teach or show skills and procedures to do something • Involves motor development • Teaching begins with visual presentation, questions and answers, and a return demonstration by learners • It is used to teach new health behavior or skills, and build confidence	• Very effective as it uses various senses • It is suitable for all age levels • Clear and easy to understand	• Very time-consuming and costly • Only suitable for small groups • Educators need to be very competent and skillful

Description of certain methods of health education and their uses

a. Illustrated lecture:

It is a teaching method in which the teacher delivers information through an interactive oral presentation, often using visual aids to support the presentation. Because you may present information formally in a classroom or informally during a clinical practice session, the term **"interactive presentation"** is used rather than illustrated lecture. No matter where you are presenting information, remember the following keys to a successful presentation:

Define learning objectives: Decide what the learners should know or be able to do after this presentation.

Plan your presentation: Create an outline based on your objectives to help organize the content and keep focused. The outline should include key points, questions, reminders of activities and visual aids, and summary points.

Introduce each presentation: A good introduction grabs attention and clearly communicates the objectives of the session. Vary introductions used in different presentations to maintain learners' interest.

Use effective presentation skills. Involve learners by asking questions, moving around the room when possible, and maintaining eye contact. Provide clear transitions between topics and summaries.

Use questioning techniques. Asking questions is essential to maintaining learners' interest, checking their understanding, and developing their problem-solving skills. It helps learners assess information and learn to make appropriate choices.

Summarize your presentation. A good summary supports the presentation's main points and reinforces the most important information.

Note: Use this check list to assess your presentation skills. Check each skill was performed. Which areas need improvement?

Planning the presentation:

1) Review the objectives.
2) Prepare an outline of key points and presentation aids such as visual materials
3) Note questions for students
4) Note reminders for planned activities
5) Note reminders to use specific visual aids.
6) Note summary questions or other activities

Introducing the presentation:

1) State the objective(s) of the presentation as part of the introduction.
2) Use a variety of introductions to capture interest, make learners aware of the objectives, and create a positive learning climate.
3) Relate the content to previously covered and related topics

Using effective presentation skills:

1) Follow a plan and use an outline
2) Communicate clearly with students. Project your voice, move about the room, provide clear transitions between topics, and maintain eye contact.
3) Interact with learners by asking and responding to questions, using their names, and providing feedback.
4) Use visual materials to illustrate and support main points.

Using questioning techniques during a presentation:

1) Target questions to the group and to individuals.
2) Provide feedback and repeat correct responses.
3) Use students' names.
4) Redirect questions that are typically or totally incorrect until the correct answer is revealed.

Summarizing the presentation:

1) Stress the main points.
2) Relate information to the objectives.
3) Provide an opportunity for questions.

b.Creation and facilitation of role play

The steps to be followed in creating a role play:

To create a role play, follow these steps:

- Decide what the students should learn from the role play (the objectives).
- Select an appropriate situation: it may be drawn from students 'experiences, your experiences, or clinical records. The situation should be relevant and similar to situations that students will encounter during their professional careers. Keep the situation simple; the interaction is more important than the content. Because the same role play may be used with a number of students in various learning settings, keep the situation as general as possible.
- Identify the roles that students will act out during the role play. In most clinical learning situations, there will be a clinician and a patient. Specify any specific roles or points of information that students should cover. For example, if the student acting the role of the patient should resist advice, ask certain questions, or give certain answers, clearly explain the desired "patient" behavior in the role play.

- Determine whether the role play will be informal, formal, or a clinical demonstration. These are defined as:
  - **Informal:** the teacher gives the role players a general situation and asks them to "act it out" with little or no preparation time. For example, if a question about a patient counseling session comes up in class, you may ask two of the students to take a few minutes to plan and present a brief role play that addresses the situation. This type of role play is not prepared in advance.
  - **Formal:** The teachers give the role players a set of instructions that outline the scope and sequence of the role play. Using the counseling example, the students would be given a situation with specific roles they are to act out, often with specific points of information to cover.
  - **Clinical demonstration:** this type of role play is often part of a clinical simulation. The clinical demonstration role play, which is similar to the formal role play, typically uses an anatomic model, simulated patient, or real patient, and often occurs as part of a coaching session. For example, you demonstrate a pelvic examination using a pelvic model, or demonstrate counseling a woman about oral contraceptives. Following the demonstration, you ask two of the students to role play the procedure. One student assumes the patient or caretaker role, while the other assumes the role of the clinician.

If an anatomic model is used, the student playing the patient sits or stands by the model and speaks as a patient would, asking questions and responding to the clinician. The student playing the clinician will not only perform the physical examination but also will verbally interact with the “patient”.

– Determine whether students will report the results of their discussion of the role play in writing or orally to entire group.

Facilitation of a role play:

To facilitate a role play:

- Explain the nature and purpose of the exercise (the objectives).
- Define the setting and situation of the role play.
- Brief the participants of their roles.
- Explain what the other students should observe and what king of feedback they should give. Tell students what to look for and how to document their questions or feedback. Should they observe for verbal communication skills?, The use of questioning?, Nonverbal communication?
- Provide the students with questions or activities that will help them to focus on the main concept (s) being presented.
- Keep the role play brief and to the point. Be ready to handle unexpected situations that might arise (confusion, arguments, etc.).
- Engage students in a follow-up discussion. Discuss important features of the role play by asking questions of both the players and observers.
- Provide feedback, both positive and suggestions for improvement.
- Summarize what happened in the session, what was learned, and how it applies to the skill being learned.

Note: A role play will be effective only if it is clearly related to the learning objectives. Explain the objectives of the role play before beginning the activity. When the role play is completed, summarize and discuss the results of the role play and relate the role play to the learning objectives.

c.Facilitating a brainstorming session

Brainstorming is generating a list of ideas, thoughts, or alternative solutions that focus on a specific topic or problem. Brainstorming is a teaching method that stimulates thought and creativity and is often used along with group discussions.

Brainstorming sessions should not be interrupted to discuss or criticize ideas. The compiled list may be used as the introduction to a topic or form the basis for a group discussion.

Once the brainstorming process has been completed, the group can organize the ideas into themes. The key to successful brainstorming is to separate the generation of ideas, or possible solutions to a problem, from the evaluation of these ideas or solutions.

Plan for brainstorming by determining the objectives of the activity and making sure that there is a way to record responses and suggestions.

Brainstorming is useful to:

- Stimulate interest in a topic.
- Encourage broad or creative thinking.

Facilitation of a Brainstorming session:

- Share the objective of the brainstorming session.
- Explain the ground rules before the session. There are three basic rules: all ideas will be accepted, discussions of suggestions are delayed until after the activity, and no criticism of suggestions is allowed.

Example**:** "During this brainstorming session, we will be following three basic rules. All ideas will be accepted; Peter will write them on the flipchart. At no time will we discuss or criticize any idea. Later, after we have our list of suggestions, we will go back and discuss each one. Is there any question? If not,"

- State the topic or problem. Clearly state the focus of the brainstorming session.

Example: During the next few minutes we will be brainstorming and will follow our usual rules. Our topic today is "Benefits of Family Planning." I would like your full participation. Janet will write these on the board so that we can discuss them later."

- Maintain a written record on a flipchart or writing board of the ideas and suggestions. This will prevent repetition, keep learners focused on the topics, and be useful when it is time to discuss each item.
- Provide opportunities for anonymous brainstorming by giving the learners cards on which they can write their comments or questions. Post the cards and use them for a later discussion. This technique allows learners to share thoughts or questions without revealing their identities.
- Involve all of the students and provide positive feedback in order to encourage more input. Avoid allowing a few learners to monopolize the session, and encourage those not offering suggestions to do so.
- Review written ideas and suggestions periodically to stimulate additional ideas.
- Conclude brainstorming by summarizing and reviewing all of the suggestions, and by placing ideas in categories, if this is useful and possible.

d. Facilitating a discussion

A discussion is an opportunity for learners to share their ideas, thoughts, questions, and answers in a group setting with a facilitator.

A discussion that relates to the topic and stays focused on the learning objectives can be a very effective teaching method. Guide the learners as the discussion develops and keep it focused on the topic at hand.\Group discussion is used to support other teaching methods, particularly to:

- Conclude a presentation.
- Summarize the main points of a videotape.
- Check students' understanding of a clinical demonstration.
- Examine alternative solutions to a case study.
- Explore attitudes exhibited during a role play.
- Analyze the results of a brainstorming session.

Considerations when preparing for a discussion:

When preparing for a discussion, consider the following:

- What are the objectives of this discussion? How long should it last?
- Do learners have some knowledge of or experience with the topic? Attempting a group discussion when students have limited knowledge or experience in the topic will often result in little or no interaction.
- Is there enough time available? Discussion requires more time than a presentation because of the interaction among students.
- Are you prepared to direct or control the discussion? A poorly directed discussion may move away from the subject and never accomplish the learning objectives. If the teacher does not maintain control, a few students may dominate the discussion while others lose interest.

Key points to be followed to ensure successful group discussions

How do you choose a topic for discussion? Group discussions are best planned ahead of time, although sometimes they arise spontaneously from the students. The following key points should be followed to ensure successful group discussions:

- Have a very clear idea in mind of what the group will discuss and what you hope to gain through the discussion. State the topic as part of the introduction.

Example: "To conclude this presentation on counseling the sexually active adolescent, let's take a few minutes to discuss the importance of confidentiality."

- Shift the conversation to the learners. Allow the learners to discuss the topic and ensure that the discussion stays on the topic at hand. Encourage shy learners to speak up so that everyone has a chance to share their thoughts.

Examples:

- "James, would you share your thoughts on…?"
- "Mary, what is your opinion?"
- "Luck, do you agree with my statements that…"

- Allow the group to direct the discussion; act as a referee and intercede only when necessary.

Example: "It is obvious that Peter and Rose are taking opposite sides in this discussion. Peter, let me see if I can clarify your position. You seem to feel that…"

- Summarize the key points of the discussion periodically. Provide feedback on learners' comments when appropriate.

Example:

- Let's stop here for a minute and summarize the main points of our discussion."
- "Actually, confidentiality is essential for counseling and testing for HIV. Can anyone tell me why?"

- Ensure that discussion stays on the topic.

Examples:

- "Sandra, can you explain a little more clearly how that situation relates to our topic?"
- "Monica, would you clarify for us how your point relates to the topic?"
- "Let's stop for a moment and review the purpose of our discussion."

- Use the contributions of each learner and provide reinforcement. Point out differences or similarities among the ideas presented by different people.

Examples:

- "That is an excellent point, John. Thank you for sharing that with the group."
- "Alex has a good argument against the policy. Mark, would you like to take the opposite position?"

- Encourage all learners to get involved.

Example: "Sylvia, I can see that you have been thinking about these comments. Can you give us your thoughts?"

- Ensure that no one learner dominates the discussion.

Example: "Paul, you have contributed a great deal to our discussion. Let's see if someone else would like to offer…"

Note: your role as the discussion facilitator is to keep the discussion focused, ensure that all students have equal opportunity to participate, and to intervene

when the discussion moves away from the objectives. Conclude the discussion with a summary of the main ideas and how they relate to the objectives presented during the introduction.

e. Demonstration

Note that giving a good demonstration is worth a thousand words. There are four steps to a demonstration:

1. Explaining the ideas and skills that you will be demonstrating
2. Giving the actual demonstration
3. Giving an explanation as you go along, doing one step at a time
4. Asking one person to repeat the demonstration and giving everyone a chance to repeat the

Qualities of a good demonstration

For an effective demonstration you should consider the following features: the demonstration must be realistic, it should fit with the local culture and it should use familiar materials. You will need to arrange to have enough materials for everyone to practice and have adequate space for everyone to see or practice. People need to take enough time for practice and for you to check that everyone has acquired the appropriate skill.

f. Traditional means of communication

Traditional means of communication exploit and develop the local means, materials and methods of communication, such as poems, stories, songs and dances, games, fables and puppet shows.

g.Preparation and using the teaching / learning materials (aids)

After completing this sub-session, you will be able to prepare and use a variety of the following teaching/learning materials:

- A writing board
- A flipchart
- A video
- Slides and a computer to prepare and project a presentation
- Leaflets

1) A writing board:

A writing board is the most commonly used visual aid. It can display information written with chalk (chalkboard or blackboard) or special pens (whiteboard). You can use a writing board for announcements, informal discussions, brainstorming sessions, and note taking. A writing board is also an excellent tool for illustrating

subjects like anatomy and physiology and for outlining procedures.

Some possible uses of a writing board:

- Document ideas during discussions or brainstorming exercises,
- Draw a sketch of anatomy or a physiological response,
- Note points you wish to emphasize,
- Diagram a sequence of activities for working through the process of making a clinical decision,

Tips (instructions, guidelines) for using a writing board:

Most teachers use a writing board of some kind. Sometimes the board will look messy at the end of a presentation, with untidy diagrams and no pattern to the words. For using a writing board, follow the following guidelines:

- Before you start, decide what you will illustrate on the board.
- During the presentation, write the key words or phrases in order, according to the structure of the presentation.
- Remember that learners tend to copy the words and the layout as they appear on the board, so make sure that what you write on the board is what you want the learners to write in their notes.
- Keep the board clean
- Use chalk or pens that contrast with the background of the board so the learners can see the information clearly.
- Make text and drawings large enough to be seen in the back of the room.
- Underline headings and important or unfamiliar words for emphasis
- Do not talk while facing the board.
- Do not block the learners' view of the board; stand aside when you have finished writing or drawing.
- Allow sufficient time for learners to copy the information from the board.
- Summarize the main points at the end of the presentation.

2) A flipchart

A flipchart is a large tablet or pad of paper, usually a tripod or a stand. You can use a flipchart for displaying prepared notes or drawings as well as for brainstorming and recording ideas from discussions. You can also use flipcharts before and after clinical practice visits to introduce objectives and group exercises, or to summarize the experience.

The possible uses of a flipchart are the same as those listed for the writing board, but also include the following:

- Note objectives or outcomes before or after clinical practice sessions.
- Create flowcharts to work through clinical decision-making in different situations, such as during a complicated labor and childbirth.
- Record discussions or ideas during small group exercises.

Tips for using a flipchart:

- Make it easy to read. Use bullets (*) to highlight items on the page. Leave plenty of white space, and avoid putting too much information on one page. Print in block letters using wide-tipped pens or markers.
- Make the flipchart page attractive. Use different colored pens to provide contrast, and use headings, boxes, cartoons, and borders to improve the appearance of the page.
- Have masking tape available to hang flipchart pages on the walls during brainstorming and problem-solving sessions.
- To hide a portion of the page, fold up the lower portion of the page and tape it; when you are ready to reveal the information, remove the tape and let the page drop.
- Face the learners, not the flipchart, while talking.
- When you finish with a flipchart page, tape it to the wall where you and the learners can refer to it.

Note: When you use the flip chart in health education you must discuss each page completely before you turn to the next and then make sure that everyone understands each message. At the end you can go back to the first charts to review the subject and help people remember the ideas.

3) Preparation and using computer generated slides

When preparing slides:

- Limit each slide to one main idea; detailed information should be put into a handout, not on a slide.
- Make sure slides support the text or objectives. Slides should clearly demonstrate their objective.
- Be sure that the material on the slide is legible. A good rule is that if a slide can be read by the naked eye-without a projector- it will be legible to learners in the back of the room when it is projected.
- When using a computer to develop a presentation, keep the presentation simple and clear.
- Be consistent, Use the same general style and tone throughout.
- Proofread. You are more likely to catch errors if you proofread before creating slides.

- Limit the information on each slide to one idea that can be grasped in 5-10 seconds.
- State the main idea in the title.
- Use about three to five bullets per slide. Use no more than seven lines of text.
- Limit a bulleted item to six to eight words.
- Whenever possible, use pictures, or graphs to support or replace text. Bar graphs and line graphs are effective tools to show trends and statistics. Photographs and line drawings are foe example useful for showing clinical signs and symptoms and demonstrating clinical procedures.
- Make graphics and drawings large enough to be seen easily in the back of the room. Use large lettering (at least 5 mm tall, preferably larger if printing, or 18 point or larger if using a computer).
- If you are using a computer to prepare slides use only one typeface (font) per slide. Use italics or bold to emphasize points rather than using another font.
- Make sure that technical assistance is available to deal promptly with problems. Practice the computer program for creating and projecting your presentation until you are comfortable with it.
- Avoid busy or confusing background. Use a color for the text that has a very high contrast with the background. A simple white background with dark lettering is very effective.
- I you are preparing a projected presentation, minimize the transition between slides. Use sound effects sparingly and only to emphasize a point. If there is animation, it should be used consistently throughout the presentation.
- Remember that your slides should highlight your key points. They should not contain the full text of the presentation.
- Charts and tables should be large and simple for the message to be clear.
- Always save the presentation on the computer's hard drive and on other USB like flash disk or CD-Rom in case something happens to the computer (e.g. sometimes computers "crash" or "freeze" and information can be lost if not saved.

The following are some instructions for using a slide projector:

- Arrange the room so that all learners can see the screen; make sure that there is nothing between the projector and the screen.
- Set up and test the slide projector and computer before the learners arrive
- Once the projector is on, move away from the projector to avoid blocking the learners' view of the screen.
- Face the learners, not the screen, while talking.
- Allow plenty of time for the learners to read what is on the screen and take notes, if necessary.

- Determine if all or some of the lights can be left on during the slide presentation; this will help learners pay attention and make taking notes easier.
- During presentation, avoid rushing through a series of slides. This can be very frustrating for learners, take time to view and discuss each slide. When appropriate, ask learners questions about what they are seeing on a slide.

4) Use Video

Videos can be very versatile visual aids. Videos can be used by a single learner for individual learning, by a group of learners for independent learning, or by the teacher for involving learners in a discussion. One of the most important aspects of teaching a skill is showing how an expert would perform it. Video is particularly useful for this purpose. A bank for prerecorded videos provides a valuable resource for demonstrating various aspects of clinical practice. When the resources are available, you can use video to record individual learners' performances and provide valuable feedback on their acquisition of clinical skills.

Note: Video can also be recorded on a CD-ROM to be played on a computer and on a DVD to be played on a DVD player. Video from a CD-ROM or DVD can also be projected onto a screen, allowing a large group of learners to see the video. When this approach is used, external speakers may be needed so that all learners can hear the audio portion of the video.

Possible uses for video:

- Provide an overview or introduction to a topic to stimulate interest and discussion.
- Allow the teacher to model a technique or procedure, such as how to counsel adolescents about reducing their HIV risks, assess breastfeeding attachment, or insert an Intra-uterine Device (IUD), in a clear, step-by-step manner.
- Allow learners to practice identifying clinical signs such as sunken eyes and fast breathing.

Tips for using Videos:

- In the classroom, use several short video segments with pauses in between for explanation or discussion, rather than one long video.
- Preview the videotape to ensure that it is appropriate for the learners and consistent with the course objectives.
- Make sure that the information presented in the video is up-date with current practices and standards. If there are some differences, be sure to tell the learners about them before showing the video. If there are considerable differences, do not show the video.
- Before the classroom session, check to be sure that the video is compatible with the video player. Run a few seconds of the tape to ensure that everything

is functioning properly. Cue the video to the beginning of the program or to the section of the video that you will show.

- Arrange the room so that all learners can see the video monitor or screen and hear the video.
- Prepare the learners to view the video:
- State the objective
- Give the learners an overview of the content they will see on the video.
- Focus learners 'attention by asking that they look for a number of specific points as they watch the video.

Remember: Use videos as an interactive tool. When appropriate, stop the video to point out things the learners should notice, or ask questions to check their understanding. Discuss the video after it has been shown. Review the main points that the learners were asked to watch for as they viewed the video. This will make the video a much more effective teaching tool than if the learners watch it without your guidance.

Summary for using visual aids: No matter which visual aids you use, remember the following:

- **Keep it simple:** each flipchart or slide should present only one main point, with supporting information in a bulleted list. This will help learners remember important information.
- **Keep it relevant:** Use up-to date videos and slides. Present information and demonstrate skills in a manner consistent with best practices.
- **Keep it focused:** prepare or use visual aids that support the learning objectives and highlight main points.
- Practice using visual aids in advance
- Set up or prepare your visual aids in the room before the learners arrive
- Check that all audiovisual equipment is working before the learners arrive
- Make sure that all learners can see the writing board, flipchart, screen, and video monitor.
- Prepare any copies of handouts related to the visual aids in advance and have them in the room when the learners arrive.
- When appropriate, have questions or exercises (e.g. case studies, role plays) prepared for use after using the visual aids.
- Make notes about how effective the visual aids were in helping the learners and how you might use the visual aids in future presentations.

5) Leaflets

Leaflets are the most common way of using print media in health education. They can be a useful reinforcement for individual and group sessions and serve as a reminder of the main points that you have made. They are also helpful for sensitive subjects such as sexual health education. When people are too shy to ask for advice, they can pick up a leaflet and read it privately.

In terms of content, leaflets, booklets or pamphlets are best when they are brief, written in simple words and understandable language. A relevant address should be included at the back to indicate where people can get further information.

Notes: Visuals materials are one of the strongest methods of communicating messages, especially where literacy is low amongst the population. They are good when they are accompanied with interactive methods. It is said that a picture tells a thousand words. Real objects, audio and video do the same. They are immediate and powerful and people can play with them!

You might take with you real visual materials to a health education meeting. We've already mentioned bed netting for demonstrating prevention of malaria, but there are other real objects too. Think about family planning, nutrition, hygiene and so on. If your display is on 'family planning methods', display real contraceptives, such as pills, condoms, diaphragms, and foams. If your display is on weaning foods, display the real foods and the equipment used to prepare them.

Audio material includes anything heard such as the spoken word, a health talk or music. Radio and audio cassettes are good examples of audio aids. As the name implies; a**udio-visual materials** combine both seeing and listening. These materials include Television (TV), films or videos which provide a wide range of interest and can convey messages with high motivational appeal. They are good when they are accompanied with interactive methods. Audio-visual health learning materials can arouse interest if they are of high quality and provide a clear mental picture of the message. They may also speed up and enhance understanding or stimulate active thinking and learning and help develop memory.

f. fScheme of health education

Identification:

Names of health educator:

Topic name:

Duration (in minutes):

Time: from: ….. to: …..

Place:

Audience (or target population/group/person):

Objectives/learning outcomes:

Steps	Content	Timing (in minutes)	Facilitation technique	Teaching aids/materials
Introduction	Presentation of health educator and audience: …	2 min.	e.g. lecture	e.g. computer and projector
	Announcement of the objectives: ….	2 min.	e.g. lecture	e.g. computer and projector
	Motivation of the audience: ….	1 min.	e.g. lecture	e.g. computer and projector
Body of the lesson	**Sequence 1: e.g. Mode of transmission of malaria:** malaria is transmitted through …	e.g. 4 min.	e.g. Brain storming and interactive lecturing	E,g. images
	Sequence 2: e.g. symptoms and signs of malaria: Fever, headache, chills, myalgia, etc.	e.g. 4 min.	e.g. Brain storming and interactive lecturing	e.g. images/ photos/ pictures
	Partial summary / evaluation: e.g. until now we studied that malaria is transmitted through …. The symptoms and signs of malaria are… Questions: e.g. What are the characteristics of someone who is suffering from malaria?	e.g. 2 min.	e.g. Discussion	
	Sequence 3: e.g. Prevention of malaria: Malaria is prevented through the following ways: adequate use of mosquito net, cutting bushes around the households, etc.	e.g. 5 min.	e.g. Brain storming and interactive lecturing	e.g. images, flipchart

	Sequence 4: e.g. precautions in case of malaria: If individual have malaria, he should seek care and advice from health care providers at the nearest health service, he should keep respecting measures of prevention against malaria, etc.	e.g. 3 min.	e.g. Brain storming and interactive lecturing	e.g. computer and projector
	Partial summary/ evaluation: We studied that malaria is prevented by : If someone suffer from malaria, he/she should Questions: Describe the mode of prevention of malaria.	e.g. 2 min.	e.g. Brain storming and interactive lecturing, Discussion	
Conclusion	**General synthesis/ summary:** Provide summary of all main content facilitated: e.g. Malaria is transmitted through …, the symptoms and signs of malaria are …, the prevention of malaria consists of …, in case there is malaria, the individual or family should. **General/overall evaluation:** Questions: How malaria is prevented? What are the symptoms and signs of malaria?	e.g. 3 min. e.g. 2	Discussion	

g. Barriers to Successful Teaching

It is helpful to be aware of some of the potential obstacles to successful teaching. Conditions and barriers to successful teaching differ between the acute care setting and community setting. Likewise, there may be barriers to successful teaching that differ between community-based settings. In the next section barriers to successful teaching are presented and followed by characteristics of successful teaching.

These barriers have the potential to interrupt the coordination of and consistency in teaching and communication with the care giving team.

Nursing students and novice home care nurses often express dismay over their diminished control of client behavior when providing care in settings other than the acute care setting. For instance, teaching in the home often requires adaptation to the particular home environment, where the client is in control. Further, the nurse is faced with accommodating the specific needs of the client and family within their own schedule and circumstances.

Another barrier relates to difficulty in coordinating client teaching among multiple providers. Often, many care providers are involved with the client's care.

Other professionals may include other nurses, physical therapists, social workers, home health aides, nurse practitioners, and physicians. Each provider may teach a procedure, treatment, or process in a different way, confusing the client. It is difficult to maintain ongoing communication among multiple caregivers in several diverse settings.

Lack of time is a barrier to home care teaching. The time factor in acute care settings may prohibit teaching, and many home care referrals come from clinics or physicians' offices. As a result, the first teaching, in many cases, may be done in the home. Home care nurses are often pressed for time. It may be difficult for the home care nurse to feel teaching is ever complete or even adequate.

Self-assessment 5.4.1

1) Explain 5 factors that affect the readiness to learn
2) Explain 3 domains of learning
3) Describe how the following teaching methods should be used during health education session: Lecture, demonstration, role play
4) Describe how the following teaching materials/aids should be used during health education session: a writing board, a video and slides & a computer to prepare and project a presentation

5.4.2. Advocating for the community

Learning activity 5.4.2

Using Community Health Nursing Textbooks and internet; read about advocating for the community and respond to the following questions:

1) Discuss the purpose of advocacy, advocacy methods, and principles of advocacy
2) What do you understand about approaches used in advocacy?
3) Discuss the advocacy strategies.

Advocacy is the act of "taking a position on an issue, and initiating actions in a deliberate attempt to influence private and public policy choices". It is an act of delivering an argument so that you can gain commitment from your political and community leaders, and help your community organize itself to face a particular health issue.

Advocacy involves the selection and organization of information to make sure that your argument is convincing. Advocacy is not just one thing or one way of doing things; it can be delivered through a variety of interpersonal and media channels. Advocacy also includes organizing and building alliances across a wide variety of stakeholders.

Advocacy is strategic and it should be geared to using well-designed and organized activities in order to influence policy or decision makers about all the important issues that you think will affect the health of your community. This might include a wide range of possible issues, including health policy, laws, regulations, and programmes or funding from the public and private health sectors.

A community health advocate (or CHA) works to ensure that members of a particular community are treated fairly and adequately in all health care matters. Community health advocates generally work for a government agency or an independent nonprofit organization.

Advocacy can address single or multiple health issues, during which time-limited campaigns as well as ongoing work may be undertaken on a range of health issues. Community advocacy efforts can be implemented on a group, local, national, transnational basis or at all levels at the same time.

The level at which advocacy is conducted is often determined by a number of factors, including the scope of the issue, the short term and/or long term nature of the issue, and the availability of resources. Many issues are amenable to, but do not necessarily require, advocacy efforts at multiple levels.

a. Purpose of advocacy

The main purpose of advocacy is to bring about positive changes to the health of your population. Sometimes advocacy will address health issues through the implementation of a national health policy, or through the implementation of public health policy — and it can also address health issues related to harmful traditional practices. Moreover, advocacy could help to meet the goals of health extension programme policies, where specific resource allocation and service delivery models are formulated for advocacy campaigns.

Advocacy is about helping you to speak up for your community; to make sure that the views, needs and opinions of your community are heard and understood. It should always be an enabling process through which you, as a Health Extension Practitioner, together with individuals, model families and others in your community — take some action in order to assist the community to address their health needs. Advocacy is person-centered and people-driven. It is always community-rights based. That is to say that advocacy is dealing with what your community needs to improve its health. You could also say that advocacy is the process of supporting people to solve health issues. It includes single issues and time-limited campaigns, as well as ongoing, long-term work undertaken to tackle a range of health issues or health problems.

Remember, advocacy is your opportunity to influence polices or programs of health. It also means putting important health problems on the agenda. Advocacy may be able to provide a solution to specific health problems, and build support and networks that can tackle health issues that are affecting the health of your community

b. The goals and objectives of advocacy

The goals and objectives of advocacy are to facilitate change and the development of new areas of policy, in order to tackle unmet health needs or deal with emerging health needs in a given community.

Here the goal means the desired result of any advocacy activity. An advocacy goal will usually be a long-term result, and it may take three to five years of advocacy work to bring about the desired result. It is unlikely that your advocacy network can achieve a goal on its own; it will probably require other allies to bring about the required change. It is vital to know what you are trying to do before you start your advocacy work. This involves developing a goal that applies to the situation that needs to change.

Important points to note about **goals** are as follows:

- A goal is the overall purpose of a project. It is a broad statement of what you are trying to do.

- A goal often refers to the benefit that will be felt by those affected by an issue.
- A goal is long term and gives direction — it helps you know where you are going. It needs an accompanying route map or strategy to show you how to get there.
- Without a goal, it is possible to lose sight of what you are trying to do.
- A goal needs to be linked to the mission and vision of your organization.

An **objective** is the intended impact or effect of the work you are doing, or the specific change that you want to see. The word 'objective' often refers to the desired changes in policy and practice that will be necessary to help you and your community meet that goal. It is the most important part of your strategy, and is the next step after developing the goal itself. It is worth spending time writing clear objectives, because you will find you are able to write the rest of the advocacy strategy much more clearly — and you are likely to be more effective in achieving change.

When you set an **advocacy objective,** always consider or keep in mind the resources available in your locality. It is important that an advocacy objective identifies the specific policy body in the authority that should be approached to fulfil the objective, as well as detailing the policy decision or action that is desired. For example, if you want to overturn the ban on community-based distribution of contraceptives, then the right target to direct your advocacy towards would be the Ministry of Health.

In contrast to a goal, an advocacy objective should be achievable by the network on its own. It is a short-term target, which means it should be achievable within the next one or two years. The success of your advocacy objectives should always be measured.

SMART objectives

'SMART' is a way of reminding you that your objectives should be:

S: Specific — by this we mean that you need to set a specific objective for each of your health programmes.

M: Measurable — your objective should be measurable.

A: Achievable — the objective should be attainable or practicable.

R: Realistic — which also means credible.

T: Time-bound — and should be accomplished and achieved within a certain amount of time.

c. The advantages of advocacy

The success of advocacy as a method of problem solving or resolution is tied in part to the advocates' philosophy of searching for solutions rather than problems. As a health worker acting as an advocate, you may be able to find ways to resolve the community's health-related problems. In some situations, you may have to act as a health advocate and provide ongoing representational advocacy for your community. Advocates should be particularly good at identifying the strengths of their own community, and should help them find ways of solving health-related problems.

There are several benefits of advocacy:

- Advocacy helps your community's voice to be heard
- It provides you with information, support, and services to help you make choices.
- It helps you to get people to understand your point of view
- Makes it easier for you to get information in a way that you can understand
- Helps you to see what other services are available
- Helps you choose what you want to do
- Helps with expressing your views effectively
- Represents your community's views faithfully and effectively
- Helps influential people understand the issues.

d. Advocacy methods

Before starting advocacy, the community health nurse has to choose a method(s) which will be used in order get the desired results. These methods are:

1) **Lobbying,** this means influencing the policy process by working closely with key individuals in political and governmental structures, together with other decision makers.
2) **Meetings,** usually it is used as part of a lobbying strategy or negotiation, to reach a common position.
3) **Project visits** are another useful tool of advocacy to demonstrate good practice and information, education and communication as various means of sensitizing the decision makers.
4) **Community organizing** is another important tactic that can be used.

e. Principles of advocacy

The use of the following principles may help you to get a common understanding and get support for your advocacy activities:

- Use several tools for advocacy to reach a wide audience

- (for example, not only the public, but also officials and decision makers), and be sure to form good relationships with your local media representatives.
- Have good relations with the private sector and all the NGOs working in the area around you. Collaborate with them and all the people who can help your advocacy work.
- Have good strategic planning.
- Use effective monitoring tools.

f. Approaches to advocacy

The advocacy approach uses many different methods of reaching people. Interpersonal meetings or face-to-face approaches with the decision makers are the most effective advocacy approaches for those people. However, with the limited availability of advocates in the field, the potential number of people reached is limited using this form of communication, and further work like that may be expensive. As mentioned in earlier sessions, you can also use other channels for reaching the public, for example newsletters, flyers/leaflets, booklets, fact sheets, posters, video and dramas.

As an advocacy coordinator, you will need support and technical assistance, and possibly extra personnel to carry out your advocacy activities. You may need help in the areas of identifying health issues, planning, and message or material production. Some organizations that can help you carry out an advocacy campaign will have expertise in conducting advocacy campaigns, or be able to help you carry out needs assessment and issue identification. Other organizations may help with advocacy activities such as message development and broadcast work. Some will have expertise in audio-visual and media message production, while others may have expertise in training field workers for developing their advocacy and networking skills.

Here below certain advocacy approaches are described:

1) **"Grassroots" or "bottom-up"** approaches to advocacy are based on the identification of needs and goals by community members themselves. It is defined as efforts by which groups sharing a common interest are assisted in identifying their specific needs and goals, mobilizing resources within their communities, and in other ways taking action leading to the achievement of the goals they have set collectively.

2) **top-down models** emphasize the identification of needs or goals by experts outside of the community or by only the community leaders. These advocates may be professional staff of non-profit organizations, or national or international professional health organizations.

Organizing is critical to the success of advocacy efforts, whether they are conducted from a bottom-up or top-down approach. For instance, a non-

profit or non-governmental organization that is spearheading efforts to improve health related services in a particular locale or to prohibit smoking must organize, at a minimum, its staff and constituents to further/promote these goals.

3) **Community organizing** has been defined as ‘‘the process of organizing people around problems or issues that are larger than group members’ own immediate concerns’’. As such, it is relevant to bottom-up advocacy efforts. Community readiness is a prerequisite for mobilization for a specific goal. The stronger the community’s sense of identity, cohesion, and connectedness, the more likely it is that the community is ready to mobilize and to address a specific issue.

Organizing efforts using a bottom-up approach may rely on indigenous community organizers, that is, community leaders who are able to influence and represent the larger constituency of the community.

Other mechanisms used in bottom-up advocacy efforts include ***reliance on small groups***, often called the locus of change because they help to create a group identity and a sense of purpose, and ***town hall meetings,*** which are used to inform the relevant community and to consider a variety of solutions.

Organizing and mobilizing a community is often a cyclical process that comprises assessment, research, action, and reflection. As an example, an advocacy group may find that there are multiple issues to deal with and that each of these issues falls within its mission or vision. Because each issue demands an allocation of time and resources, it would be impossible to begin all of them simultaneously with the same degree of attention and intensity. One option open to the organization is to survey its membership about which issues or activities the members feel are most critical.

Alternatively, an organization may choose to conduct a needs assessment and, from the information gathered through this assessment, prioritize the needs to be addressed, and the activities to be pursued.

Assessment, then, is the process by which members identify and define the critical issues that affect their community. Although ‘‘needs assessment’’ has been variously defined, it is frequently viewed as a systematic process that is ‘‘designed to determine the current status and unmet needs—sometimes, both the present and future needs—of a defined population group or geographic area with regard to a specified program or subjects area’’. This process is often founded upon research, which is the examination of causes and correlates of issues identified in the assessment phase: the nature of the issue, including any barriers to access and/or limitations of current policies and how the allocation of community resources relates to it; political influences, how organizations or other players exercise social power around it; and solutions.

A community needs assessment that is both valid and credible is characterized by:

1) A multidisciplinary team that includes individuals with expertise in community assessment procedures, knowledge about strategies relevant to the issue under study, and members of the population to be affected;
2) Broad agreement on the objectives focus, and scope of the needs assessment;
3) A study design that uses both primary and secondary data effectively;
4) A realistic study design, time frame, and allocation of resources;
5) A process for regular reviews and input by community representatives; and
6) a plan for the utilization of the findings.

This, in turn, raises yet another issue: How do we define ‘‘need’’?

A need is a difference between ‘‘what is’’ and ‘‘what should be.’’ Some researchers have defined need as ‘‘a gap—between the real and ideal conditions—that is both acknowledged by community values and potentially amenable to change’’.

The values mean an idea about what is good, right, and desirable; values are central to judgment and to behavior.

Before embarking on this process, however, it is critical that the community to be assessed be clearly defined.

Geographical, health, social, and/or demographic characteristics may provide the basis for this decision. The research question that the needs assessment is to answer must then is clearly defined. These two elements will provide the basis for the design of the needs assessment process. During the first phase of the needs assessment process, the pre-assessment, those conducting the assessment will conduct all preliminary planning and background research activities.

This requires the identification of the data to be collected, the sources of the data, the methods for collecting and analyzing the data, and the use of the data after its collection and analysis. The pre-assessment phase provides those conducting the assessment with an opportunity to consider such key issues as the cost of conducting the assessment; any special needs of the target population that may have an impact on the methods to be used to collect the data, such as literacy levels or primary language; and the timeline for completion of the assessment.

The assessment phase is the second phase of the needs assessment process. The focus of this stage is the collection of data and its analysis. The methods used for data collection should permit triangulation, defined as the use of different, independent approaches to address research questions. Data collection strategies may include, for instance, survey instruments, structured interviews, and secondary data from existing databases. Triangulation strengthens the basis for conclusions

to be drawn from the study. The post-assessment phase is often referred to as an action phase because it requires that the results of the data analysis be put into action. This phase is used to determine how the information gathered through the needs assessment process can best be put to use.

g. How to get supporters

During these activities a community health nurse need support to form an advocacy network because of the amount of work and the number of activities that may be involved. She/he may need help in order to design effective messages, to form a task force, to decide the strategy, and for fundraising, as well as for calculating the cost of the activities.

As advocator you also need to identify potential supporters. This can be achieved by attending local events, enlisting the support of the media, holding public meetings, and talking to all the influential people in your community. To do these things effectively, you will also need to do a community diagnosis and get to understand the resources in your community or locality. To get good support for advocacy campaigns, you need to form a cooperative team for your advocacy activities, and you need to know the stages to go through in order to achieve the best results.

It is indicated to implement the following stages in order to build the capacity of the team which will help you in the advocacy activities. These stages are called the **stages of team growth.**

- **Stage 1 Team forming**

When a team or network is **forming,** you need to explore the boundaries of acceptable group behavior as the people change from individuals to gain member status. At this stage, the members of the team may feel excitement, anticipation and optimism, as well as possibly suspicion, fear and anxiety about the advocacy activities ahead. Members attempt to define the task at hand and decide how it will be accomplished. They also try to determine acceptable group behavior and how to deal with group problems. Because so much is going on to distract members' attention, the group may only make a little progress. However, be aware that a slow start is a perfectly normal phenomenon.

- **Stage 2 Storming**

At the **storming** stage, the team members begin to realize that they do not know the task, or may consider it is more difficult than they imagined. They may become irritable or blameful, but are still too inexperienced to know much about decision making. Team members argue about what actions they should take, even when they agree on the issues facing them. Their feelings include sharp fluctuations in attitude about the chance of success. These pressures mean that members have little energy to spend in meeting common goals, but they are beginning to understand each other.

- **Stage 3 Norming**

During the **norming** stage, members reconcile competing loyalties and responsibilities. They accept the team ground rules or norms, their roles, and the individuality of each member. Emotional conflict is reduced. There is increased friendliness as members begin to trust one another. As members begin to work out their differences, they have more time and energy to spend on their objectives, and to start making significant progress.

- **Stage 4 Performing**

At the **performing** stage, members begin diagnosing and solving problems, and implementing changes. They have accepted each other's strengths and weaknesses and learnt their roles. They become satisfied with the team's progress and feel a close attachment to one another. The team or network is now an effective support, and ready to help you in your health advocacy work.

h. The role of community advocator

The main role in advocacy will be to secure the resources necessary to meet the health needs of the communities. To do this effectively requires, undertaking several key tasks, such as understanding the health needs of the communities and identifying the government officials and stakeholders with the power to determine health policy. The advocator also needs to be able to identify fundamental barriers and their solutions as well as identify the main problems or issues to be addressed. There is also a need to develop effective messages. So find a support group, or form a network and collaborate with them. To do this you need to develop your advocacy leadership skills.

i. Advocacy strategies

Advocacy requires action, which requires that the social power of the organizations be exercised through public events that are intended and formulated to demonstrate that power. Multiple strategies through which that power can be exercised and demonstrated include advocacy through media, through courts, through legislative bodies, and through regulatory processes.

1) Advocating through the media

Media advocacy, one of the most common advocacy strategies used to advocate on health-related issues, requires the identification of issues and concerns related to the community wellbeing, an emphasis on the broader context of those concerns, the maintenance of media attention to those concerns, and the provision of ‘‘entertainment’’ to the audience hearing of those concerns.

The issues that provide the focus of the media advocacy must be appropriately framed using sound bites, which are brief, quotable statements; visual images; and

social math, which explains statistical data while placing it in a relevant context. Various strategies can be used to prepare for contact with the media including:

- The development of a Fact Sheet, that briefly conveys the message to be made;
- A Source List or roster of people who are available to speak competently on the issue to be discussed;
- Talking Points, which is a listing of the main messages to be conveyed;
- A Question and Answer Sheet, which addresses in question and answer format the most commonly raised issues associated with the matter to be discussed; and
- A Press List comprised of all media outlets in a specific geographical area.

Press releases, meaning a written pitch for a particular issue, should be released to all media contact. The press release consists of no more than one page and includes the name and contact information of the media contact person on a particular issue. Other strategies that can be used to engage the media include letters to the editors of newspapers and journals, op-ed columns, interviews with reporters, the staging of media events, paid advertising, and public service announcements.

2) Using the courts

The courts system provides yet another avenue for advocacy efforts. The process of filing a lawsuit (claim) differs across countries. The system in use in the USA is used as an example here because it may be relevant in an international, as well as national, context, as exemplified by the following situation. In 1996, after an outbreak of meningitis in Kano, Nigeria that resulted in 109 580 cases of illness and 11 717 deaths, the international pharmaceutical company Pfizer provided supplies, medical staff, and ‘‘treatment.’’ This ‘‘treatment,’’ however, consisted of Trovan (trovafloxacin), an experimental drug for the treatment of meningitis. After the departure of Pfizer’s personnel from Kano, local residents reported severe health problems. Investigations conducted by news reporters raised questions about the validity of company research documents, the apparent lack of oversight and approval of research procedures, and the failure to give effective treatment to ill people. In August 2001, the families of the children who were given Trovan (trovafloxacin) in Kano brought a lawsuit in US courts, alleging that Pfizer had violated international and national laws in carrying out its research with Trovan. This advocacy effort represented the first lawsuit in US history of non-US residents bringing a lawsuit against a private corporation for wrongful experimentation in violation of US and international law. In this lawsuit against Pfizer, the families of the children claiming injury or harm to the children by Pfizer (plaintiffs) started their lawsuit through the filing in court of a complaint, which states the nature of the claim that one party is bringing against another, the facts to support the claim, and the

amount in controversy. The defendant Pfizer (the party being sued) was served with a copy of the complaint, together with a summons. The summons indicated that the defendant was required to respond to the complaint in a specified period of time or the plaintiff will win the lawsuit by default. The defendant must, in some way, respond to the complaint. Each allegation/accusation in the complaint may be admitted or denied or the plaintiff may plead ignorance. Pfizer also had the option of filing a countersuit, that is, a lawsuit against the plaintiff or another third party. Alternatively, Pfizer could have sought dismissal of the plaintiff's lawsuit, claiming that the court has no jurisdiction (authority to hear the case) or that the plaintiff failed to state a cause of action. In fact, Pfizer actually did attempt to have the court dismiss the lawsuit. After the filing of the lawsuit and the answer by the defendant, the plaintiff and defendant will have a period of discovery, during which they will each have an opportunity to discover facts about the other side's case, the identity of expert witness being used by the other side, and weaknesses in the other side's case. The forms of discovery that are most commonly used in cases involving advocacy efforts include depositions, the questioning under oath of individuals who will be testifying for the other party, including that party; a request for the production of documents, so that one side can review documents it deems relevant but that are in possession of the other party; a request for a mental or physical examination, such as when members of a community might be claiming that they have been injured by a toxic exposure; and a request for admissions.

3) Legislative and regulatory advocacy

Regulatory and legislative advocacy are strategies that are often used by organizations seeking to have their voices heard. Although the specific procedures vary depending upon the legal jurisdiction, the strategies are common across countries. As an example, in Australia, the Coalition on Food Advertising to Children is seeking more severe protection of children from food advertising. In Ireland, the Broadcasting Commission of Ireland is seeking consultation from interested entities in the development of an advertising code that will provide additional protections for children. In the USA, the National Association of Social Workers has been engaging in regulatory and legislative advocacy in an attempt to establish parity for mental health care and to promote child welfare.

4) Using coalitions

Regardless of which strategies are ultimately used, the development of a coalition may be critical to the success of the advocacy effort. ‘‘Coalitions are sets of groups with a shared goal and some awareness that ‘united we stand, divided we fall’’’. Accordingly, coalitions may consist of groups of community members, groups of organizations, or both. Groups participating in a coalition must have a shared vision and mission, or intentionality that is clear to all of the participants and that is directly related to their goals and objectives. Organizations participating in the

coalitions must have the structure or organizational capacity that will support such efforts, that is, the staff, volunteers, task forces, membership, and leadership, as well as a clear allocation of roles and responsibilities. **Technical assistance**, such as consultation, training, and support for advocacy efforts, may be necessary to enable organizations to build and participate in coalitions.

j. Evaluation of advocacy efforts

A formative evaluation, also known as formative research, is conducted at the beginning of a program and focuses on research that must be done to develop a program or intervention. The focus of a process evaluation is to examine the procedures and tasks involved in implementing an effort or program. In contrast, an outcome evaluation focuses on an examination of the value of the program or effort and whether short term objectives have been achieved. An impact evaluation focuses on an examination of whether long term change has resulted from the program or effort; this is the most comprehensive type of evaluation effort. The data that are used in an evaluation may be qualitative, resulting from ‘‘nonnumeric” observations collected systematically through established social science methods,’’ or quantitative, meaning ‘‘numeric variables which are either discrete or continuous’’

k. Challenges in advocating for health

Community health advocates may encounter significant obstacles in attempting to effectuate their goals. One of the major challenges of community health advocacy is finding a way to engage the public in a specific issue. Mothers Against Drunk Driving (MADD) in the USA has been notably successful in engaging the media, the public, and legislators in its campaigns to eliminate plea bargaining for drunken driving offences, institute mandatory jail sentences for drunk driving, reclassify alcohol related injuries and death accidents to felonies (major crimes), institute ‘‘dram shop’’ laws holding proprietors of restaurants and bars liable for accidents resulting from serving alcohol to excess, and increase the minimum legal drinking age. To MADD’s successes are attributable to a number of factors.

In addition to difficulties that may be encountered in garnering understanding and support for a particular position, community health advocates may face additional barriers and attacks on a systemic level. The difficulties encountered by Brazil exemplify the types of obstacles that may confront advocates in the political and legal domains. As an example, Brazil was forced to defend against a complaint filed against it by the USA, which claimed that Brazil’s efforts to make antiretroviral drugs more widely available to HIV infected people in that country through its patent laws discriminated against US imports of antiretroviral drugs. The World Trade Organization ultimately commissioned a legal dispute panel in an attempt to resolve the grievance.

Self-assessment 5.4.2

1) Describe briefly the approaches to advocacy
2) Discuss the advocacy strategies.
3) Identify the advocacy principles

5.4.3. Home based care

Learning activity 5.4.3

Using internet and Community Health Nursing Textbooks; read about Home Based Care and respond to the following questions:

1) What is the meaning of home-based care?
2) Who needs home based care?
3) Who may be in-charge for providing home-based care?
4) Discuss the principles and objectives of home-based care?
5) Discuss the types of home-based care?

Home care is defined as the provision of health services by formal and informal caregivers in the home in order to promote, restore and maintain a person's maximum level of comfort, function and health including care towards a dignified death.

Home care services can be classified into preventive, promotive, therapeutic, rehabilitative, long-term maintenance and palliative care categories.

It is an integral part of community-based care. Community-based care is the care that the consumer can access nearest to home, which encourages participation by people, responds to the needs of people, encourages traditional community life and creates responsibilities.

HBC is also defined as any professional **care given to sick people in their homes,** which includes physical, psychosocial, palliative, and spiritual activities.

a. Who needs home based care?

Home based cares are services that may be provided to:

Health people, someone who is aging and needs assistance to live independently; or managing a chronic health issue; recovering from a medical condition in need

of assistance e.g. post deliveries or after specific treatment.; at risk people with moderate to severe functional disabilities. It includes also terminally ill persons; persons living with HIV/AIDS or any other debilitating disease and/or conditions e.g. mental illness, substance abusers; any other disadvantaged group/person in need of such care e.g. people in crisis.

b. Who are the caregivers?

Families; caregivers from the formal system e.g. professionals like nurses, physicians, therapists; caregivers from the non-formal system e.g. NGOs; caregivers from the informal system e.g. community health worker (CHW), volunteers, other community caregivers and church groups provide short-term or long-term care in the home, depending on a person's needs.

c. Principles of home-based care and community-based care

Home-based care and community-based care are:

- Holistic: they involve together physical, social, emotional, economic and spiritual aspects. Community needs, to be addressed, but integrated into existing systems.
- Person- centered: the provision of care should be sensitive to culture, religion and value systems to respect privacy and dignity (community-driven, customer-centered).
- Comprehensive, interdepartmental and all-encompassing; preventative, promotive, therapeutic, rehabilitative and palliative (multi-sectoral involvement).
- Empowering and allows capacity building to promote the autonomy and functional independence of the individual and the family or caregivers. Leadership is from within the community.
- Ensure access to comprehensive support services.
- Cover total lifespan.
- Sustainable and cost-effective resource responsibilities to be identified and shared.
- Promote and ensure quality of care, safety, commitment, cooperation and collaboration.
- Allow choice and control over to what extent partners will participate.
- Recognize diversity.
- Promote and protect equal opportunities, rights and independent living.
- Specific in what needs to be done and achieved.
- Focus on a basic and essential component of PHC.
- Adhere to a basic principle in health care and development, namely community involvement.

d. Purposes

Community-Based Care (CBC) provides complete quality health services at home and in communities to help restore and maintain people's health standards and a way of living by providing health services, supported self-care and health education at home.

e. Goals and objectives of home-based care

- To move the emphasis of care to the beneficiaries (care are given in the comfort and familiarity of home, in the community)
- To ensure access to care and follow-up through a functional referral system.
- To integrate a comprehensive care plan into the informal, non-formal and formal health system.
- To empower the family and/or community to take care of their own health.
- To empower the client, the caregivers and the community through appropriate targeted education and training.
- To reduce unnecessary visits and admissions to health facilities.
- To eliminate duplication of activities and enhance cost-effective planning and delivering of services.
- Be pro-active in approach

f. Advantages of the home-based care and community-based care

- Reduce the pressure on hospital beds and other resources at different levels of service.
- Reduce and share the cost of care within the system.
- Feelings of ownership and accountability are evoked.
- Allow people to spend their days in familiar surroundings and reduce isolation.
- Enable family members to gain access to support services.
- Promote a holistic approach to care and ensure that health needs are met.
- Create awareness of health in the community
- Bring care providers in touch with potential beneficiaries.
- Intervention is pro-active rather than reactive.
- Right to decide about care within own environment.
- Commonly occurring diseases/conditions can be effectively managed at home.
- Promotes job creation especially in non-formal system.
- Decision making is inclusive
- Beneficial to family and friends as it allows more direct time with clients and involvement in care giving.

- Care will be individualistic and person centered.
- Avoid unnecessary referrals to and from higher levels.
- Avoid unnecessary and/or prolonged admission to health care facilities or institutions.
- Ensure that partners in caregiving know and play their roles to avoid duplication.
- Ensure that caregivers and all key role players are well informed (knowledgeable), received adequate skills training and utilize other partners in care.
- Caregivers are fully involved and informed about the individual care plans.
- Ensure adequate documentation and encourage proper use of recorded information.
- Ensure continuity and consistency in service, quality assurance and management.

g. Challenges of home-based care

While providing home-based care some caregivers or clients may have some of the following challenging problems which may be a barrier to an appropriate provision of care.

- Social environment is restricted because of a set believes and customs, ideologies and local conflicts, inappropriate housing.
- Caregivers may experience emotional and physical strain and stress.
- Caregivers and clients may lack sufficient empowerment regarding care or resources and diagnosis.
- Uncertainty about the duration of the situation.
- Inadequate support structures for the caregiver.
- Social isolation, related to confinement of the person to bed and the home.
- Emotions such as rejection, anger and grieving.
- Economic constraints and exhaustive care needs.
- Focus too often on health service activities only – no common vision.
- Fear or mistrust of the primary caregivers.
- Barriers to access-built environment, communication and information.
- Poor resource allocation, e.g., respite centers/care, equipment.
- Lack of and confusion around volunteerism.
- Negative past experiences.
- Programs are not community driven and fragmented.

- Emphasis on “sick” role and “disabilities” rather than on “quality of life” and “abilities”.
- Self-neglect - often refusal of intervention/care.
- Level of readiness of communities to accept their roles and functions.
- The concept of partnerships is misunderstood e.g., government is the one and only provider.
- Confidentiality of diagnosis - unwillingness to disclose.
- HIV/AIDS epidemic may decrease caregiver pool.

h. Types of Home-Based Care

a) Personal care and companionship

Those are the care related to help with everyday activities like bathing and dressing, meal preparation, and household tasks to enable independence and safety. Those cares are also known as **non-medical care, home health aide services, senior care, homemaker care, assistive care, or companion care.**

It may include but not limited to the following:

- Assistance with self-care, such as grooming, bathing, dressing, and using the toilet,
- Enabling safety at home by assisting with ambulation, transfer (e.g., from bed to wheelchair, wheelchair to toilet), and fall prevention,
- Assistance with meal planning and preparation, light housekeeping, laundry, medication reminders, and escorting to appointments,
- Companionship and engaging in hobbies and activities,
- Supervision for someone with dementia or Alzheimer’s disease
- Personal care and companionship does not need to be prescribed by a doctor. They are the cares provided on an ongoing basis on a schedule that meets a client’s needs.

b) Private Duty Nursing Care

This type of care includes **long-term, hourly nursing care at home for adults with a chronic illness, injury, or disability.** They are also known as home-based skilled nursing, long-term nursing care, catastrophic care, tracheostomy care, ventilator care, nursing care, shift nursing, hourly nursing, or adult nursing

Examples of Private Duty Nursing Care services:

- Care for diseases and conditions such as Traumatic brain injury and /or Spinal cord injury
- Ventilator care
- Tracheostomy care

- Monitoring vital signs
- Administering medications
- Ostomy/gastrostomy care
- Feeding tube care
- Catheter care

Private duty nursing care needs to be prescribed by a professional health care specialized in the concerned domain. Those are the cares which should be provided and monitored every day 24 hours over 24 hours.

c) Home Health Care services

They are short-term, physician-directed care designed to help a patient to prevent or to recover from an illness, injury, or hospital stay. They are also known as Medicare-certified home health care, intermittent skilled care, or visiting nurse services. They may include:

- Short-term nursing services
- Physical therapy
- Occupational therapy
- Speech language pathology
- Medical social work
- Home health aide services

Home health care needs to be prescribed by a professional health care specialized in the concerned domain. The care is provided through visits from specialized clinicians or other health care provider specialized in the related domain, on a short-term basis until individual goals are met.

Self-assessment 5.4.3

1) Identify people who need home based care?
2) Describe the types of home-based care.
3) What are the principles of home-based care and community-based care

End unit assessment 5

1) Geopolitical communities are defined or formed by:

a. Natural and/or manmade boundaries
b. A group perspective or identity based on culture
c. A group specifically to address a common need
d. Are subgroups or subpopulations that have some common characteristics

2) Primary prevention:

a. Relates to activities directed at preventing a problem before it occurs
b. Is implemented after a problem has begun, but before signs and symptoms appear
c. Focuses on limitation of disability and rehabilitation
d. Refers to early detection and prompt intervention during the period of early disease pathogenesis

3) The objectives of community health nursing include the following, except:

a. To assess the need and priorities of vulnerable group like pregnant mother, children and old age persons;
b. To provide health care services at every level of community including health education, immunization,
c. To prevent and control communicable and non-communicable diseases
d. To deliver health services as determined by the private stakeholders

4) The principles of community health nursing include the following, EXCEPT:

a. The health workers should be elected by the multidisciplinary health care team.
b. Health services should be based on the needs of individuals and the community.
c. Health services should be suitable to the budget; workers and the resources.
d. Family should be recognized as a unit and the health services should be provided to its members.

5) The types of Community Needs Assessment are identified here below, EXCEPT:

a. Familiarization or Windshield Survey
b. Problem-Oriented Assessment
c. Community Subsystem Assessment
d. Geographic Information System Analysis

6) The following examples describe someone who is physically unhealthy, EXCEPT:

a. A person who has been harmed due to a car accident.
b. A farmer infected by malaria and unable to do their farming duties.
c. A person who has an inability of rational and logical decision-making.
d. A person infected by tuberculosis and unable to perform his or her tasks.

7) _____ is one of the characteristics of the person who is psychologically healthy

a. Having a memory and being able to reason rationally and solve problems,
b. Going to a football match or involvement in a community meeting,
c. Celebrating traditional festivals within your community,
d. Having an ability to perform routine tasks without any physical restriction,

8) Which of the following activities should be considered as secondary prevention?

a. Preventing an established disease such as hypertension from becoming worse
b. Breast self-examination for early diagnosis and prompt treatment of cancer
c. Distributing insecticide treated bed nets to prevent people from getting infected with malaria
d. Immunizing less than five years children against an infectious disease like Tuberculosis

9) _____is an interactive process in which learners share their ideas, thoughts, questions, and answers in a group setting with a facilitator.

a. Demonstration
b. Role play
c. Discussion
d. Lecture

10) Which one of the following teaching methods is more appropriate for teaching the diabetic patient a skill like “injecting insulin?”

a. Brainstorming
b. Discussion
c. Interactive presentation
d. Demonstration

11) As a facilitator who is introducing a teaching session using an interactive presentation (illustrated lecture) as teaching method, the first step to consider is the following:

a. Relate the content to previously covered and related topics.
b. State the objective(s) of the presentation.
c. Provide an opportunity for asking questions.
d. Use visual materials to illustrate and support the main points.

12) Deliberate on the confirmations given below. What is real about the writing board as a teaching / learning material?

a. When using the writing board, the text and drawings should be little enough.
b. The facilitator (health educator) should talk while facing the writing board.
c. The board can be used to document ideas during discussions or brainstorming exercises.
d. The writing boards are expensive and require more electricity for displaying information.

13) The following affirmations are true about flipchart, EXCEPT:

a. The flipchart may be used to note objectives or outcomes before or after clinical practice sessions.
b. The pages of information can be prepared in advance and revealed at appropriate points in the presentation.
c. When you use the flip chart in health education you must discuss each page completely before you turn to the next.
d. The teacher should use the same colored pens to provide contrast for making the flipchart page attractive.

14) Among the options presented below, what the health educator / teacher should do when preparing computer generated slides?

I. Limit the information on each slide to one idea that can be grasped in 5-10 seconds.
II. Use about six to eight bullets per slide and limit a bulleted item to three to five words.
III. Use no more than seven lines of text per each slide.
IV. Use several typefaces (fonts) per slide to emphasize points.

a. I and III
b. I and IV only
c. II and IV
d. II and III only

15) The following are the instructions for health educator/teacher, who is using a slide projector, excluding:

a. Making sure that there is nothing between the projector and the screen so that all learners can see.
b. Setting up and testing the slide projector and computer before the learners are present.
c. Rushing through a series of slides for allowing learners enough time to study during presentation.
d. Allowing plenty of time for the learners to read what is on the screen and take notes, if necessary.

16) The assertions mentioned below are TRUE about videos as health education material, with the exception of one of them. Which one?

a. Commercially developed videos are often outdated and may show techniques that are inconsistent with currently approved practices.
b. Preferably, using one long video should be encouraged rather than several short video segments with pauses in between for explanation or discussion.
c. The teacher should preview the videotape to ensure that it is appropriate for the learners and consistent with the course objectives.
d. The teacher should make sure that the information presented in the video is up-date with current practices and standards.

17) Decide which one of the following declarations is TRUE about the role play?

a. The clinical demonstration role play is similar to the informal role play, and often occurs as part of a coaching session.
b. In informal role play, the teachers give the role players a set of instructions that outline the scope and sequence of the role play.
c. Clinical demonstration role play is often part of a clinical simulation. It typically uses an anatomic model, simulated patient, or real patient,
d. In formal role play, the teacher gives the role players a general situation and asks them to “act it out” with little or no preparation time.

18) The following are classified as traditional means of communication, EXCEPT:

a. Lecture and discussion,
b. Poems and stories,
c. Songs and dances,
d. Games and fables.

19) Tips for a better use of a flipchart are the following EXCEPT:

a. Leave plenty of white space, and avoid putting too much information on one page.
b. Print in block letters using wide-tipped pens or markers.
c. Use different colored pens to provide contrast, and use headings, boxes, cartoons, and borders to improve the appearance of the page.
d. Face the learners, not the flipchart, while talking.
e. When you finish with a flipchart page give it to the group for better understanding.

20) Explain any 4 characteristics of community health nursing

21) Discuss the responsibilities of an ASM (Agent de Santé Maternelle).

22) Discuss the challenges faced by Rwanda community health program

23) Explain any 5 important characteristics of a community

24) Characterize the different types of a community

25) Describe the factors affecting community health

26) Discuss any four Characteristics of a Healthy Community

27) Outline the required steps in conducting community health needs assessment?

28) Describe the methods used for conducting an advocacy for a community.

29) You are appointed to do advocacy for the people living near Kabeza industrial zone because of toxic waste coming from the industries. Describe any two advocacy approaches to be used.

30) Outline the principles of home-based care

31) Explain the types of Home Based Care

32) Identify any 4 factors that contributed to the decline in infectious disease–related deaths during the nineteenth and early twentieth centuries.

UNIT 6 PRIMARY HEALTH CARE (PHC)

Key Unit Competence:

Apply the principles and components of health promotion to prevent diseases and promote health of communities.

Introductory activity 6



1) What do you think as actions to be done in order to optimize the health of people in each of the sections of the image above?
2) Read this page: https://www.who.int/news-room/fact-sheets/detail/primary-health-care and think about why Primary Health care is necessary.

6.1. Primary Health Care Overview

6.1.1. Concept of primary health care

Self-assessment 6.1.1

Using library books or Internet, read on Primary Health Care and try to explain the following concepts:

1) Primary health care
2) Objectives of the primary health care

Primary Health Care "is essential health care made universally accessible to individuals and families in the community by means acceptable to them, through their full participation and at a cost that the community and country can afford. It forms an integral part both of the country's health system of which it is the nucleus and of the overall social and economic development of the community".

Primary health care is essential (promotive, preventive, curative, rehabilitative, and supportive) care that focuses on preventing illness and promoting health. It is both a philosophy of health care and an approach to providing health care services.

Primary health care is what happens when someone who is ill (or who thinks he or she is ill or who wants to avoid getting ill) consults a health professional in a community setting for advice, tests, treatment or referral to specialist care. Such care should be holistic, balanced, personalized, rigorous and equitable, and delivered by reflexive practitioners who recognize their own limitations and draw appropriately on the strengths of others.

Types of primary health care

- **Selective PHC** -Health promotion initiatives aimed at certain groups or specific issues
- **Comprehensive PHC** -Health promotion initiatives aimed at the health and wellness for the whole community
- **Primary care** -Initial decisions on managing a health issue e.g. general practice decisions about managing chronic conditions

a. Primary care and primary nursing

Primary health care should not be confused with primary care or primary nursing. Primary care is provider driven and is the entry point to the health care system. Primary nursing is a system of delivering nursing services whereby a nurse is responsible for planning the 24-hour care of a specific patient. Both these concepts are illness-oriented concepts.

b. Objectives of the primary health care

The objectives of the primary health care are: to increase the programs and services that affect the healthy growth and development of children and youth; to boost participation of the community with government and community sectors to improve the health of their community; To develop community satisfaction with the primary health care system; to support and advocate for healthy public policy within all sectors and levels of government; to support and encourage the implementation of provincial public health policies and direction; to provide reasonable and timely access to primary health care services; to apply the standards of accountability in professional practice; to establish, within available resources, primary health care teams and networks ; and to support the provision of comprehensive, integrated, and evidence-based primary health care services.

c. Role of the Nurse in primary health care

The goal of nursing is to improve the health of clients through partnerships with clients, other health care providers, related community agencies, and government. Nursing practice involves a variety of roles, including direct care provider, educator, administrator, consultant, policy adviser, and researcher.

- **Care giver:** The caregiver role has traditionally included those activities that assist the client physically and psychologically while preserving the client's dignity. The required nursing actions may involve full care for the completely dependent client, partial care for the partially dependent client, and supportive–educative care to assist clients in attaining their highest possible level of health and wellness.
- **Communicator:** Communication is integral to all nursing roles. Nurses communicate with clients and their support people, other health care professionals, and people in the community. The quality of a nurse's communication is an important factor in nursing care. The nurse must be able to communicate clearly and accurately so that a client's health care needs are met.
- **Educator:** As a health teacher, the nurse helps clients learn about health and the health care procedures they need to perform to restore or maintain health
- **Client Advocate**: A client advocate acts to protect the client. In this role, the nurse may represent the client's needs and wishes to other health care professionals, such as relaying the client's request for information to a member of the health care team.
- **Counsellor:** Counselling is the process of helping a client recognize and cope with stressful psychological or social problems, develop improved interpersonal relationships, and promote personal growth. It involves providing emotional, intellectual, and psychological support.

In contrast to the psychotherapist, who counsels individuals with identified problems, the nurse counsels primarily healthy individuals who are experiencing normal adjustment difficulties.

- **Change Agent:** The nurse acts as a change agent when assisting clients to make modifications in their own behavior.
- **Leader:** The leadership role can be employed at different levels: individual client, family, groups of clients or colleagues, or the community.
- **Manager:** Every nurse manages the nursing care of individuals, families, or communities. The nurse manager, a formal leadership role, also delegates nursing activities to ancillary workers and other nurses, and supervises and evaluates their performance.

6.1.2. History and Evolution of PHC.

Deep concern for the health of the world's population, specifically short life expectancies and high mortality rates among children, led to the formation of the global health strategy of primary health care. All members of the WHO were encouraged to take actions toward the attainment of "health for all by the year 2000" through ensuring adequate food supply, safe water, adequate sanitation, maternal and child health care, immunization, prevention and control of endemic diseases, provision of essential drugs, health education, and treatment of common diseases and injuries.

a. Alma-Ata declarations

From **September 6 to September 12, 1978,** delegates from 134 countries and representatives from 67 nongovernmental organizations, agencies, and United Nations (UN) organizations gathered in the city of Alma-Ata at the invitation of the USSR under the aegis of the World Health Organization (WHO) and United Nations International Children's Emergency Fund (UNICEF). The purpose of the conference was to exchange experience about something called **primary health care.**

The Declaration of Alma-Ata (WHO & UNICEF, 1978) emphasized health, or well-being, as a **fundamental right and a worldwide social goal.** It was an attempt to address inequality in the health status of persons in all countries and to target governments that needed to be responsible for policies that would promote economic, social, and health development, which were considered basic to the achievement of "health for all." The following are declarations that have been agreed:

Declaration one: The Conference strongly reaffirms that health, which is a "state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity", is a **fundamental human right** and that the attainment of the highest possible level of health is a most important worldwide social goal whose realization requires the action of many other social and economic sectors in addition to the health sector.

Declaration two: The existing inequality in the health status of people particularly

between developed and developing countries as well as within countries is politically, socially, and economically unacceptable and is, therefore, of common concern to all countries.

Declaration three: Economic and social development, based on a New International Economic Order, is of basic importance to the fullest attainment of health for all and to the reduction of the gap between the health status of the developing and developed countries. The promotion and protection of the health of the people is essential to sustained economic and social development and contributes to a better quality of life and to world peace

Declaration four: The people have the right and duty to participate individually and collectively in the planning and implementation of their health care.

Declaration five: Governments have a responsibility for the health of their people which can be fulfilled only by the provision of adequate health and social measures. A main social target of governments, international organizations, and the whole world community in the coming decades should be the attainment by all peoples of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life. Primary health care is the key to attaining this target as part of development in the spirit of social justice.

Declaration Six: Primary health care is essential health care based on practical, scientifically sound, and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where the people live and work, and constitutes the first element of a continuing health care process.

Declaration Seven: Primary health care:

1) reflects and evolves from the economic conditions and sociocultural and political characteristics of the country and its communities and is based on the applications of the relevant results of social, biomedical, and health services research and public health experience;

2) addresses the main health problems in the community, providing promotive, preventive, curative, and rehabilitative services accordingly;

3) includes at least education concerning prevailing health problems and the methods of preventing and controlling them; promotion of food supply and proper nutrition; an adequate supply of safe water and basic sanitation;

maternal and child health care, including family planning and immunization against the major infectious diseases; prevention and control of locally endemic diseases; appropriate treatment of common diseases and injuries; and provision of essential drugs

4) involves, in addition to the health sector, all related sectors and aspects of national and community development, in particular agriculture, animal husbandry, food, industry, education, housing, public works, communications, and other sectors, and demands the coordinated efforts of all those sectors;

5) requires and promotes maximum community and individual self-reliance and participation in the planning, organization, operation and control of primary health care, making the fullest use of local, national, and other available resources; and to this end develops through appropriate education the ability of communities to participate;

6) should be sustained and integrated, functional and mutually supportive referral systems, leading to the progressive improvement of comprehensive healthcare for all, and giving priority to those most in need;

7) relies, at local and referral levels, on health workers, including physicians, nurses, midwives, auxiliaries, and community workers as applicable, as well as traditional practitioners as needed, suitably trained socially and technically to work as a health team and to respond to the expressed health needs of the community.

Declaration Eight: All governments should formulate national policies, strategies, and plans of action to launch and sustain primary health care as part of a comprehensive national health system and in coordination with other sectors. To this end, it will be necessary to exercise political will, to mobilize the country's resources and to use available external resources rationally.

Declaration Nine: All countries should cooperate in a spirit of partnership and service to ensure primary health care for all people since the attainment of health by people in any one country directly concerns and benefits every other country. In this context, the joint WHO/UNICEF report on primary health care constitutes a solid basis for the further development and operation of primary health care throughout the world.

Declaration Ten: An acceptable level of health for all people of the world by the year 2000 can be attained through a fuller and better use of the world's resources, a considerable part of which is now spent on armaments and military conflicts. A genuine policy of independence, peace, detente, and disarmament could and should release additional resources that could be devoted to peaceful aims and in particular to the acceleration of social and economic development of which primary health care, as an essential part, should be allotted its proper share

Self-assessment 6.1.2

1) **Summarize the declarations from the Alma-Ata**

6.1.3. Characteristics of Primary Health Care

Learning activity 6.1.3

Using library books or internet, read on characteristics of primary health care and respond to the following question.

1) What do you think are the pillars of the primary health care?
2) What do you think as the primary health care being client (patient/ Family) centered?

Good primary health care aims at *safeguarding, promoting and restoring health.* However, health is not an aim in its self, but a condition for human development and well-being. Health services should thus be developed in harmony with other aspects of society; *education, social and economic infrastructure* etc. and use only a **reasonable** share of the total financial and human resources available.

Indeed, *"the possibility that the direct positive effects of health care on health may be outweighed by its negative effects through its competition for resources with other health-enhancing activities. A society which spends so much on health that it cannot or will not spend adequately on other health-enhancing activities may actually be reducing the health of its population through increased health spending"*. To produce a maximum of health with these limited resources, health services must be rationalized to function in an effective and efficient way.

Characteristics of PHC include:

- **Patient/family centeredness, self-reliance and participation:** the involvement of the patient/Family makes the PHC interventions more effective and sustainable.
- **Community engagement and participation**: Community are engaged to take initiations in identifying their own health and social problems therefore, integration of promotive, preventive and curative health services are given in a unified way by the participation of the local population
- **Health workers collaborating in inter-disciplinary teams:** the primary health care approach does not only involve one profession. Multidisciplinary teams and multisectoral involvement is the key to achieve PHC objectives.

- **Proactive Prevention Focus:** the primary health care services includes promotion, prevention and restoring health, however, early intervention before the population health is endangered is the main focus.
- **Accessibility:** the services delivered within the primary health care should be easily available and meeting the primary health needs of the population
- **Better Management of Chronic Conditions**
- **Localized set of choices,**
- **Sustainability**
- **Multi-sector alignment and involvement:** the PHC ideal require good planning and allocation of resources. Multisectoral involvement makes the PHC services more available, accessible and affordable but putting needed resources.

a. Pillars of primary health care

Primary health care consists of an integrative group of health care professionals coordinating to provide basic health care services to a particular group of people or population. The Primary Health care outline is built on four key pillars which are reinforcement for the delivery of safe health care.

The four major pillars of primary health care are as follows: Community Participation, Inter-sectoral Coordination, Appropriate Technology and Support Mechanism Made Available.

- **Community Participation:** Community participation is a process in which community people are engaged and participated in making decisions about their own health. It is a social approach to point out the health care needs of the community people. Community participation involves participation of the community people from identifying the health needs of the community, planning, organizing, decision making and implementation of health programs. It also ensures effective and strategic planning and evaluation of health care services. In lack of community participation, the health programs cannot run smoothly and universal achievement by primary health care cannot be achieved.
- **Inter-sectoral Coordination:** Inter-sectoral coordination plays a vital role in performing different functions in attaining health services. The involvement of specialized agency, private sectors, and public sectors is important to achieve improved health facilities. Intersectoral coordination will ensure different sectors to collaborate and function interdependently to meet the health care needs of the people.
- It also refers to delivering health care services in an integrated way. Therefore, the departments like agriculture, animal husbandry, food, industry, education, housing, public works, communication, and other sectors need to be involved in achieving health for all.

- **Appropriate Technology:** Appropriate healthcare technologies are an important strategy for improving the availability and accessibility of healthcare services. It has been defined as ‘’technology that is scientifically sound, adaptable to local needs and acceptable to those who apply it and to whom it is applied and that can be maintained by people themselves in keeping with the principle of self-reliance with the resources the community and country can afford.’’

  Appropriate technology refers to using cheaper, scientifically valid and acceptable equipment and techniques. It is also necessary to ensure that the technology is: Scientifically reliable and valid, Adapted to local needs, Acceptable to the community people and Accessible and affordable by the local resources.

- **Support Mechanism Made Available:** Support Mechanism is vital to health and quality of life. Support mechanism in primary health care is a well-known process focused to develop the quality of life. Support mechanism includes that the people are getting personal, physical, mental, spiritual and instrumental support to meet goals of primary health care. Primary health care depends on adequate number and distribution of trained physicians, nurses, community health workers, allied health professions and others working as a health team and supported at the local and referral levels.

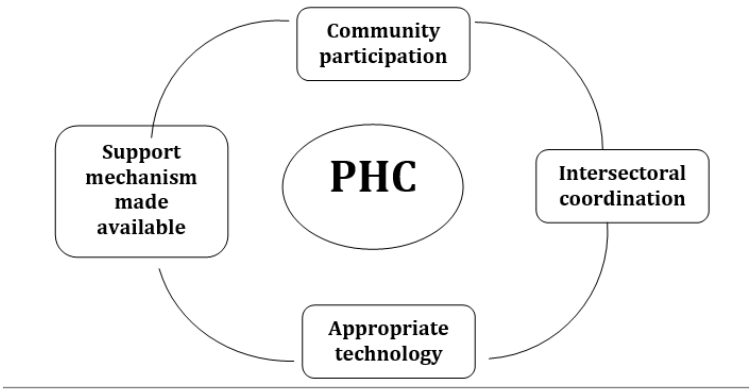


Figure 6.1 1 Pillars of the Primary Health Care

Self-assessment 6.1.3

Read the following scenario and attempts questions asked:

Scenario 1: *A dentist finds a suspicious white lesion while doing a routine check-up of a 72-year-old woman smoker and offers to refer her urgently to an oral surgeon.*

Scenario 2: *A multi-disciplinary community team including doctors, nurses, social workers and health advocates provides a 'health bus' offering a range of services to refugees and asylum seekers on an inner city estate*

1) What primary health care does the scenarios above represent and why?
2) Among the following, **one** is not the component of the primary health care

a. Community participation
b. Support mechanism made available
c. Appropriate technology
d. Sustainability

6.1.4. Structure and Functioning of Health Care system

Learning activity 6.1.4

Using library books or other available resources on the health sector, Read on Health system organization and answer the following questions;

What do you think are the components of the health system and why?

a. Overview of the health system

Health system consists of all the activities whose primary purpose is to promote, restore and maintain health. It is also defined as the people, institutions and resources, arranged together by established policies, to improve the health of the population they serve, while responding to people's legitimate expectations and protecting them against the cost of ill-health through a variety of activities whose primary intent is to improve health. (WHO, 2017).

b. Principles of health system

The following are the principles of a health system:

- **People-centered:** when it is people centered, equity and fairness are ensured.
- **Results-oriented:** Quality management system for continual quality improvement.

- **Evidence-based:** Technocrats, academicians, politicians, community or local context and change are key divers of the health system.
- **Community-driven:** Leadership, governance accountability, transparency and sustainability.
- **Context-specific:** context is synonymous with resource-constrained environment.
- **Ethically sound:** Human rights and dignity, safety for the client, community and environment
- **Systems thinking:** Holistic view of the health system

c. Components of health system

For the health system to work, it has components, these are: Service delivery, Health workforce, Information, Medical products, vaccines and technologies, Financing and Leadership and governance

Leadership and governance: Each country's specific context and history shapes the way leadership and governance is exercised, but common ingredients of good practice in leadership and governance can be identified. These include:

- Ensuring that health authorities take responsibility for steering the entire health sector and for dealing with future challenges (including unanticipated events or disasters) as well as with current problems
- Defining, through transparent and inclusive processes, national health policies, strategy and plan that set a clear direction for the health sector

Health information systems: good governance is only possible with good information on health challenges, on the broader environment in which the health system operates, and on the performance of the health system. This specifically includes timely intelligence on:

- Progress in meeting health challenges and social objectives (particularly equity),including but not limited to household surveys, civil registration systems and epidemiological surveillance
- Health financing, including through national health accounts and an analysis of financial catastrophes and of financial and other barriers to health services for the poor and vulnerable
- Trends and needs for HRH; on consumption of and access to pharmaceuticals; on appropriateness and cost of technology; on distribution and adequacy of infrastructure
- Access to care and on the quality of services provided.

Health financing: Health financing can be a key policy instrument to improve health and reduce health inequalities if its primary objective is to facilitate universal coverage by removing financial barriers to access and preventing financial hardship and catastrophic expenditure. The following can facilitate these outcomes:

- A system to raise sufficient funds for health fairly
- A system to pool financial resources across population groups to share financial risks
- A financing governance system supported by relevant legislation, financial audit and public expenditure reviews, and clear operational rules to ensure efficient use of funds.

Human resources for health: The health workforce is central to achieving health. A well performing workforce is one that is responsive to the needs and expectations of people, is fair and efficient to achieve the best outcomes possible given available resources and circumstances. Countries are at different stages of development of their health workforce but common concerns include improving recruitment, education, training and distribution; enhancing productivity and performance; and improving retention.

Essential medical products and technologies: Universal access to health care is heavily dependent on access to affordable essential medicines, vaccines, diagnostics and health technologies of assured quality, which are used in a scientifically sound and cost-effective way. Economically, medical products are the second largest component of most health budgets (after salaries) and the largest component of private health expenditure in low- and middle-income countries

Service delivery: Health systems are only as effective as the services they provide. These critically depend on:

- Networks of close-to-client primary care, organized as health districts or local area networks with the back-up of specialized and hospital services, responsible for defined populations
- Provision of a package of benefits with a comprehensive and integrated range of clinical and public health interventions, that respond to the full range of health problems of their populations, including those targeted by the Millennium Development Goals
- Standards, norms and guidance to ensure access and essential dimensions of quality: safety, effectiveness, integration, continuity, and people -centeredness
- Mechanisms to hold providers accountable for access and quality and to ensure consumer voice

d. Institutional overview of the health sector in Rwanda

The healthcare sector is a complex system made up of people, facilities, laws and regulations. It addresses current health, tries to ensure wellness, treats medical problems; creates new medication and medical devices; manages the health both individuals and populations; and helps determine regulations for safety, privacy, the environment, and healthcare delivery itself.

The Rwandan health sector is a pyramidal structure and consists of three levels: the central level, the intermediary level, and the peripheral level. (More details lesson *6.1.7Levels of Healthcare Essential components of PHC.)*

The Central Level: The central level comprises: Ministry of Health, Rwanda Biomedical Center and national referral and teaching hospitals.

The Intermediary Level: the intermediate level comprises of regional (within country) referral hospitals, provincial referral hospitals and other private practices.

The peripheral level: the peripheral level comprises of administrative offices at health district, the District hospitals, Health centers and health posts

e. Stakeholders of the health sector

There are many types of stakeholders in the healthcare sector. The space covers everyone from the general public – who have a stake in their own health and the health of those around them for issues like infectious disease – to the individual researchers who investigate current healthcare problems. The high-level groups of stakeholders include:

- The general public;
- Healthcare providers (such as doctors, nurses, clinics, and hospitals);
- Payers (such as insurance companies);
- Public health organizations;
- Researchers, scientists, and corporations in the pharmaceutical industry;
- Medical device manufacturers;
- Policy makers (particularly those with interest in public health, healthcare safety or privacy policies);
- Healthcare information technology technicians and organizations; and
- Professional organizations and societies relevant to the various aspects of the space

Self-assessment 6.1.4

1) Explain the principals of the health system

6.1.5. Elements of PHC.

Learning activity 6.1.5

1) What are the elements of the primary health care?

The Alma Ata declaration put forward 8 essential components of primary healthcare. They are:

1) **Education about prevailing health problems and methods of preventing and control them**

Ill health inhibit access to opportunities in education, work, income earning, political and cultural participation and other value dimensions of human life. Health education is important element to communicate with the facts that help to promote the ways of healthy livings and solve basic health problems.

2) **Prevention and control of Locally endemic diseases**

The other aspect of the primary health care is to establish measures to prevent and control the diseases that may attack and spread rapidly throughout the community.

3) **Provision of Essential drugs**

PHC also emphasize on the availability of essential medicine such as drugs against diarrhea, fever, pain, malaria, etc. free of cost.

4) **Maternal and child health, Family planning**

With the world population increasing and women's health in danger as they have to work for their families and still get pregnant; the primary health care also focuses on improvement of the maternal and child health by ensuring trained staffs to help mother while pregnant, giving birth and after birth and to care for the babies and also by availing the family planning methods to all people in need.

5) **Expanded Immunization against major infectious diseases**

Most people, especially in the developing world, due to lack of proper knowledge of health, poor economic status, lack of sophisticated curative health services are not in position to afford the costs of treatment, therefore, Immunization is the only major preventive measure against various communicable diseases such as Tuberculosis, tetanus, Diphteria, Whopping cough, etc.

6) **Promotion of Food supply and proper Nutrition**

A balanced diet is highly necessary to live healthy lives. Sufficient supply of food and management of proper nutrition is necessary to get balanced diet. People suffer from malnutrition due to lack of balance in diet and various related health problems emerge along with malnutrition. Therefore, food supply and proper nutrition is one of the important aspects of PHC.

7) **Treatment of common infections**

In the absence of proper and time treatment on communicable diseases various rural people have died immature death. Treatment of various such disease can be managed at the local level with short training preparation.

8) Adequate supply of safe water and basic Sanitation

Safe water supply and sanitation are close related: without water, the sanitary conditions are automatically affected. Without safe drinking water and poor sanitation, we are exposed to the gastrointestinal diseases such as diarrhea, cholera, typhoid, round worm, amoeba, dysentery, etc. therefore, good supply of safe drinking water is and ensuring good sanitation are critically important for our good health.

Self-assessment 6.1.5

1) Explain the elements of the primary health care

6.1.6. Principles of PHC.

Learning activity 6.1.6



Look at the diagram above which represents the six primary principles. Reading the books that talk about the primary health. Respond to the following questions

1) Explain each of the above point in the above image

Attributes of primary health care

The following are attributes of primary health care: Essential healthcare, Universally accessible, Acceptable, Community bases, First point of contact, Affordability, Adaptability, Appropriateness, Community participation, Continuity, Comprehensiveness, Continuity, and coordination

a. Core principles of primary health care

The primary health care principles, are:

Equitable distribution: inequitable access to the health care services is a major concern especially in the marginalized and poor community. One author Julian Tudor Hart described the health inequality as the "inverse care law" where by the care is mostly availed to those who are in need of it whilst the people in need cannot access. The first key principle in primary healthcare is that individuals with more compromised health should receive more health services. Commitment to health equity does not only focus only on ensuring program inputs but also reducing differences in health outcomes. Aspects of health and health care are: equity in access to healthcare, equity in health and effective coverage.

Community participation: refers to the involvement of individuals, families and community, determine the collective needs and priorities. Universal health coverage cannot be achieved without involving the local community. They are two types of community participation: Active community participation; this involves the cooperation of the community with the health administration with the community share the financial implications; and Passive community participation; the community and the administration are working cooperatively but community is not actually required to have certain financial involvement.

The following are advantages of community participation: increases program acceptance and leadership, ensures that the program meets the local needs, cost of implementing the program may be reduced by using the local resources, use local/familiar organizations and hence problem solving is efficient, commitments to the decisions is facilitated and the community is key to sustainability.

Intersectoral communication: primary health care involves in addition to the health sector, all related sectors and aspects of national and community development. It includes sustainable participation that combine inter-organizational cooperative working alliances. Here are the pre-requisites of the Intersectoral coordination: proper orientation of policies and program, formation of joint coordination committee at each level. Defining role and responsibilities of participatory agencies and participatory decision making.

Use of appropriate technology: the use of technology that is scientifically sound, adaptable to local needs and acceptable to those for whom it is used and is maintained by the people themselves in keeping with the principle of self-reliance with the resources the country and the community can afford. The technology should be designed to meet the specific health needs and it should be selected with reference to the magnitude of the population affected the health condition.

The use of technology is effective only when it is accompanied by the following: Knowledgeable and skilled users, clear practice guidelines and policies, effective financing and distribution to make them available, community efforts to bring clients into contact with health services in timely way.

Self-assessment 6.1.6

1) Explain the following principles of primary health care according to the Alma-Ata declarations

a. Bottom-up and community engaged
b. Priority to those in need
c. Involving many counterparts

6.1.7. Levels of Healthcare Essential components of PHC.

Learning activity 6.1.7

1) Illustrate the public health care service delivery in Rwanda

a. Back ground of health system in Rwanda

Following the African regional committee of the World Health Organization held at Lusaka in 1985, Rwanda has adopted a health development strategy based on decentralized management and district-level care. The decentralization process began with the development of provincial-level health offices for health system management. Progress was made toward decentralizing management to the province and, ultimately, to the district level.

During the Genocide against Tutsi in 1994, the health system has been disrupted; infrastructures, equipment, personnel and the health system itself, have been destroyed. In February 1995, the government has issued a new policy for health system reconstruction; district health offices have been established and started to work as autonomous entities and providing services to a well-defined population.

b. Institutional overview of the health sector in Rwanda

The Rwandan health sector is a pyramidal structure and consists of three levels: the central level, the intermediary level, and the peripheral level.

The Central Level

The central level comprises (i) Ministry of Health (MOH), (ii) Rwanda Biomedical Center (RBC) and the (iii) national referral and teaching hospitals.

- The responsibility of the MOH at central level is to formulate policies and strategies, ensure monitoring and evaluation, facilitate capacity building and mobilization of resources. The central level organizes and coordinates the intermediary and peripheral levels of the health system and provides them with administrative, technical and logistical support.
- The RBC's mission is to provide quality affordable and sustainable health care services to the population through innovative and evidence based interventions and practices, guided by ethics and professionalism. The core functions of the RBC include coordination and improvement of biomedical research activities, coordination of various activities geared towards the fight against communicable and non-communicable diseases, provide high level technical expertise in the health realm, ensure availability of medicines and medical supplies at all times in health facilities, and establish strategic relations with regional and international institutions, so as to achieve the strategic health goals.
- The mission of the national referral and teaching hospitals is to provide tertiary care to the population. These include King Faisal Hospital (KFH), Rwanda Military Hospital, Kigali University Hospital (CHUK), Butare University Hospital (CHUB) and Ndera Hospital for mental health and psychiatric care. King Faisal hospital was created to provide a higher level of technical expertise than that available in the national referral hospitals to both the private and public sector and to reduce the number of patients being referred abroad for complex medical interventions.

The Intermediary Level

To decrease the pressure of demand for services in the national referral hospitals, 3 district hospitals were upgraded to referral hospital level (Ruhengeri, Kibuye and Kibungo hospitals) and four other district hospital were upgraded to provincial hospital level (Rwamagana, Bushenge, Ruhango and Kinihira) in order to form an intermediary level of referral hospitals. In addition, there are private practices operating in most of these cities.

The Peripheral Level: DHs, HCs and HPs

The peripheral level is represented by the health district and consists of an administrative office; District Health Unit (DHU), a district hospital (DH), and a network of health centers and health posts (HCs /HPs). As part of the decentralized structure of the GOR, the District Health Unit (DHU) is an administrative unit in charge of coordination of the provision of health services (including the private sector) and responsible for planning, monitoring and supervision of the decentralized implementing agencies. The DHU is part of the DHMT and reports to the Vice Mayor in charge of social affairs.

The functions of the DHU include organization and coordination of health services in the Health Facilities (DH, HCs and HPs) and the Community. Health facilities deliver the approved healthcare packages (annex 6), provide administration, manage logistics supplies and supervise Community Health Workers (CHWs).

Generally, the service package at a district hospital (DH) includes inpatient / outpatient services, surgery, laboratory services, gynecology-obstetrics, radiology, mental health, dental and eye services. The HCs provide preventive services, primary health care, in-patient care, referrals, and basic maternity services, while the HPs provide services such as immunization, family planning, growth monitoring, and antenatal care.

At the village level, Community Health Workers (CHWs) provide prevention, promotion and some curative health services. Community health services are integrated into the community development services and administrative structures. There are 499 HCs spread-out all over the country.

c. Level of services provided within the public healthcare system in Rwanda

Regarding the healthcare services provision, it is offered into levels whereby each level works in complementarity to the other levels. It starts by the community health workers, working closely with the health posts and health centers. These are primary level. The secondary level is composed by the district hospitals located in each district. The tertiary level is composed by the provincial referral hospitals and the national referral hospitals and University teaching hospitals.

Table 6.1 1 Existing Administrative Structures and related health facilities (HSSP4 2018-2024)

S/N	Administrative level/ Structure	Number	Health care delivery structures	Number
	Villages / Imidugudu	14,837	CHW	45,516
	Cells / Utugari	2,148	Health Posts	476
	Sectors / Imirenge	416	Health Centers	499
	Districts/Uturere	30	District Hospitals District Pharmacies	36 30
	Provinces (including the City of Kigali)	5	Provincial Hospitals	4

	National		National Referral and Teaching Hospitals	8
	Referral systems		Ambulances / SAMU	225
	Registered Private HFs	250		

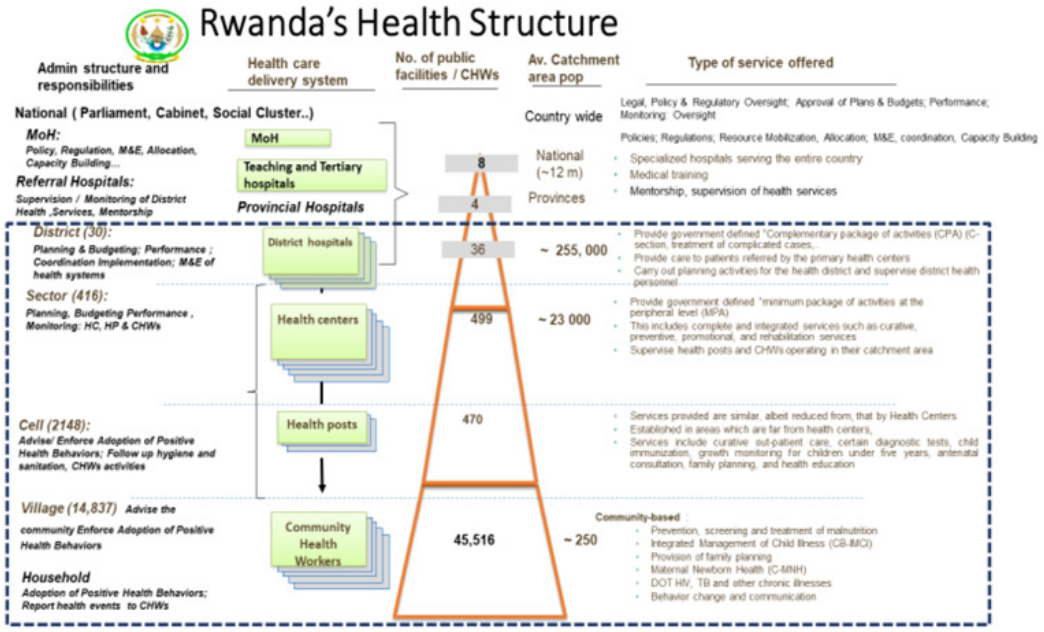


Figure 6.1 2 Rwanda health care system organization chart

d. Package of the health services

Most common illnesses in Rwanda are transmissible diseases that are preventable through improved hygienic measures and changes in individual health behavior (cfr Rwanda Health statistics). A package of activities directed toward these, as well as common preventive interventions, has been defined for each level of the health system. Here below are different package of activities according to levels:

i. Health center level, the minimum package of activities (MPA)

- **Promotional activities**: including information, education, and communication (IEC); psychosocial support nutritional activities related to small farming and food preparation; community participation; management and financing of health services; home visits; and hygiene and sanitation in the catchment area around the health center

- **Preventive activities:** premarital consultation, Ante Natal Care (ANC) services, postpartum care for the mother and child, family planning counseling and services, school health, and epidemiologic surveillance activities
- **Curative activities:** including consultations, management of chronically ill patients, nutritional rehabilitation, curative care, observation before hospitalization, normal deliveries, minor surgical interventions, and laboratory testing

ii. District hospitals, complementary package of activities

The complementary package of activities (CPA) for district hospitals includes almost all activities of the MPA for the peripheral level, but emphasizes treating referred case. Additional activities under the CPA include the following:

- **Prevention,** including preventive consultations for referred cases and ANC consultations for at-risk pregnancies. Family planning, with the provision of all methods for referred cases, including female and male sterilization.
- **Curative care,** including management of referred cases, referrals for tertiary-level care, management of difficult labor, medical and surgical emergencies, minor and major surgical interventions, inpatient care, laboratory testing, and medical imaging;
- **Management,** including the training of paramedical personnel in district schools and collaboration with the district work group for continuing education and supervision activities.

iii. Complementary package of activities for national referral hospitals

Although the national referral hospitals provide the highest level of service and should function almost solely as referral centers from district hospitals, in reality, there is an overlap of the activities of the district and national referral hospitals.

This is because there is still an unclear delineation of responsibilities for the central-level national referral hospitals, and there are not enough functioning district hospitals, especially in urban areas. This results in national referral hospitals often assuming the responsibilities of district hospitals.

e. Standards of functioning health system

A well-functioning health system responds in a balanced way to a population‘s needs and expectations by: Improving the health status of individuals, families and communities, Defending the population against what threatens its health, Protecting people against the financial consequences of ill-health, Providing equitable access to people-centered care and Making it possible for people to participate in decisions affecting their health and health system

Self-evaluation 6.1.7

1) What are the levels of health care delivery in Rwanda?
2) What are the characteristics of the well-functioning health system?

6.2. Health Promotion

6.2.1. Background of health promotion.

Learning activity 6.2.1

Read this link below about background of health promotion and briefly give an overview, strategy and focus of health promotion according to WHO.

https://www.who.int/health-topics/health-promotion#tab=tab_1

The first International Conference on Health Promotion was held in Ottawa in 1986, and was primarily a response to growing expectations for a new public health movement around the world. It launched a series of actions among international organizations, national governments and local communities to achieve the goal of “Health For All” by the year 2000 and beyond. The basic strategies for health promotion identified in the Ottawa Charter were: advocate (to boost the factors which encourage health), enable (allowing all people to achieve health equity) and mediate (through collaboration across all sectors).

Since then, the WHO Global Health Promotion Conferences have established and developed the global principles and action areas for health promotion. Most recently, the 9th global conference (Shanghai 2016), titled ‘Promoting health in the Sustainable Development Goals: Health for all and all for health’, highlighted the critical links between promoting health and the 2030 Agenda for Sustainable Development. Whilst calling for bold political interventions to accelerate country action on the SDGs, the Shanghai Declaration provides a framework through which governments can utilize the transformational potential of health promotion.

Self-assessment 6.2.1

1) Where was the first International Conference on Health Promotion held?
2) Which was the goal of the first International Conference on Health Promotion?
3) What are the basic strategies for health promotion identified in the Ottawa Charter?

6.2.2. Concept definition of “Health promotion”.

Learning activity 6.2.2



1) What is the relationship between these components (physical activity, health eating, stop smoking, community development, health schools, and health trainers) and health promotion?

The most well-known definition of health promotion is that of the World Health Organization’s Ottawa Charter **(1986)**: Health promotion is the process of enabling people to increase control over, and to improve, their health. This definition was slightly modified in 2005, in WHO’s Bangkok Charter for Health Promotion in a Globalized World to: Health promotion is the process of enabling people to increase control over their health and its determinants, and thereby improve their health.

To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is therefore, seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy life-styles to well-being.

Health promotion is the process of enabling people to exert control over the determinants of health and thereby improve their health. (WHO, 2009)

Purpose of health promotion

The purpose of this activity is to strengthen the skills and capabilities of individuals to take action and the capacity of groups or communities to act collectively to exert control over the determinants of health and achieve positive change.

Health promotion and determinants of health.

Many factors combine together to affect the health of individuals and communities. Whether people are healthy or not, is determined by their circumstances and environment.

To a large extent, factors such as where we live, the state of our environment, genetics, our income and education level, and our relationships with friends and family all have considerable impacts on health, whereas the more commonly considered factors such as access and use of health care services often have less of an impact.

Self-assessment 6.2.2

1) What is health promotion according to WHO?
2) What must an individual/ group be able to do in order to reach a state of complete physical, mental and social well-being?
3) List five determinants of health.

6.2.3. The scope of health promotion.

Learning activity 6.2.3

Open one of the following links and read about the scope of health promotion, describe briefly five health promotion actions.

https://www.euro.who.int/__data/assets/pdf_file/0004/129532/Ottawa_Charter.pdf

https://bsahely.com/2018/09/12/the-ottawa-charter-for-health-promotion-who-1986/

a. Developing personal skills

Youth organizations, through the broad range of programmes and activates delivered to young people, including health education and health information, positively influence the development of personal skills, for example self-esteem, self-efficacy, communication, negotiation, life skills and motivation. The development of these skills has a positive impact on health.

b. Creating supportive environments

Through creating safe and secure physical and social environments, youth organizations provide young people and staff with opportunities to discuss and explore health issues and practice health-enhancing behaviors, thus supporting health education and 'making the healthier choice the easier choice'; for example providing healthy food options in the tuck shop; providing healthy snacks for after schools clubs; providing a smoke free environment, implementing an anti-bullying policy, providing an adolescent friendly health service.

c. Strengthen community action

Through developing partnerships and alliances with other organizations and sectors in the community, youth organizations can build capacity and positively influence health within the wider community, which in turn, can continue to support the health of their target groups who live in the community, for example delivering parent programmes, working in partnership with healthy towns' initiatives.

d. Delivering health public policy

Through the development of health-related policy internally, youth organizations demonstrate evidence-based practice indicating the importance of having policy in place to support practice, for example sexual health policy; substance use policy. Additionally, youth organizations have a key role to play in raising awareness and advocating for public policy development and change in order to support their health-related work and the health of their target groups, for example national alcohol policy.

e. Reorient the health services

Advocating for the development and provision of health services that can respond to the health needs of young people is a key role of youth organizations, for example youth organizations have a role in creating awareness and advocating for the provision of an adolescent friendly health service for young people.

Self-assessment 6.2.3

Consider each of the following activities and decide whether you think each is, or is not, health promotion.

1) Using TV advertisements to encourage people to more physically active.
2) Campaigning for smoking cessation programs such as 'quit' activities and 'brief interventions.
3) Explaining the mother how to breastfeed his child.
4) Setting up a self-help group for people who have been sexually abused as children.

5) Providing schools with a crossing patrol to help children across the road outside schools.

6) Raising awareness on how poverty affect health.

7) Giving people information about the way their bodies work.

8) Immunizing children against infectious diseases such as measles.

9) Protesting about a breach in the voluntary code of practice for alcohol advertising.

10) Running low-cost gentle exercise classes for older people at local leisure centres.

11) Proving healthier menu choices at workplace canteens.

12) Teaching a programme of personal and social education in a secondary education.

13) Proving support to people with learning disabilities living in the community.

14) Using social marketing tools to ensure behavioral change in a group of smokers.

15) Campaigning for increasing tax on tobacco.

What were your reasons for saying “yes” or “no”? Can you identify the criteria you are using for deciding whether an activity is “health promotion’?

6.2.4. Principles of health promotion.

Learning activity 6.2.4

Open the link below and read about Principles of health promotion and briefly give an overview of health promotion principles.

https://www.youth.ie/articles/principles-of-health-promotion/

a. Principles of health promotion

Empowerment: a way of working to enable people to gain greater control over decisions and actions affecting their health.

Participative: where people take an active part in decision making.

Holistic: taking account of the separate influences on health and the interaction of these dimensions.

Equitable: ensuring fairness of outcomes for service users.

Intersectoral: working in partnership with other relevant agencies/organizations.

Sustainable: ensuring that the outcomes of health promotion activities are sustainable in the long term.

Multi Strategy: working on a number of strategy areas such as programmes, policy.

Self-assessment 6.2.4

A	B
Intersectoral	Working on a number of strategy areas such as programmes, policy.
Empowerment	Ensuring fairness of outcomes for service users.
Sustainable	Taking account of the separate influences on health and the interaction of these dimensions.
Multi Strategy	Working in partnership with other relevant agencies/ organisations.
Equitable	A way of working to enable people to gain greater control over decisions and actions affecting their health
Holistic	Ensuring that the outcomes of health promotion activities are sustainable in the long term.

6.2.5. Main approaches to health promotion.

Learning activity 6.2.5

Open the link below and read about approaches to health promotion and describe briefly each approach.

https://repository.canterbury.ac.uk/download/e5b13fb82eb016e6c2bae128f962f54291a459571e774b8ec99c0b0d6d27f297/298377/Effective%20approaches%20to%20health%20promotion%20in%20nursing%20-%20Nursing%20Standard%20Oct%202018.pdf

a. Medical or Preventive Approach

The medical or preventive approach aims to reduce premature death by targeting the whole population or groups who are at higher risk of developing disease. This approach can operate at three levels:

- **Primary prevention** – preventing the onset of disease
- **Secondary prevention** – attempting to prevent disease progressing

- **Tertiary prevention level** – seeking to mitigate harm in people who have already developed disease. Nurses who work within this approach to health promotion may be involved in immunization programmes, screening for diseases such as cancers, or administering medicine to patients in palliative care settings.

b. Behavioral Approach

The behavioral approach, also known as the behavior change approach, makes the fundamental assumption that healthy lifestyles are crucial to maintaining good health. Some behavior change attempts have been targeted at the whole population, for example, 'Stoptober', the annual 28-day stop smoking campaign that was initiated by the Department of Health in 2012. Healthcare professionals who adopt the behavioral approach in their practice seek to provide individual patients with information concerning their unhealthy lifestyle behaviors and motivate them to change.

c. The Educational Approach

The educational approach to health promotion assumes that increasing people's knowledge about their health will lead to healthier behavior. Nurses who adopt an educational approach provide people with knowledge and information about their health. This differs from the behavior change approach in that it does not seek to attempt to motivate the individual to change their behavior in a specific direction decided by the professional, for example, to quit smoking, reduce alcohol intake or consume more fruit and vegetables.

The focus of the educational approach is on learning and comprises three aspects

- **Cognitive** -addresses people's understanding concerning a health topic.
- **Affective** -considers an individual's feelings and attitudes towards a health topic.
- **Behavioral** -concerned with people's skills, for example, their ability to cook. One important outcome of the educational approach is 'health literacy', which refers to "the personal, cognitive and social skills which determine the ability of individuals to gain access to, understand and use information to promote and maintain good health".

d. The Empowerment Approach

Within the context of health promotion, empowerment can be understood as "a process through which people gain greater control over decisions and actions affecting their health" (WHO, 1998, p. 6). An empowerment approach seeks to enable individuals and social groups to express their health-related needs and have greater involvement in decision-making regarding their health. It can be used when working directly with individual patients or whole communities. Since nurses

have an understanding of the needs and socio-cultural challenges within the local communities in which they work, it has been suggested that there is scope within some nursing roles, for example school nursing, to support whole families and collaborate with other healthcare professionals to achieve joint, local health goals.

One example of the empowerment approach being used to successfully promote patient health has been demonstrated within a hospice setting that specializes in cancer care. By improving open dialogue with patients and their families, nursing staff were able to elicit expressed needs and subsequently develop patient-centred care plans that promoted patients' autonomy

e. The Social Change Approach

The social change approach focuses on making changes to the physical, social and economic environment to increase their health promoting capacity. This approach assumes that if the healthier choice is made the easier choice, it will become increasingly realistic for individuals to make decisions to improve their health and wellbeing. Therefore, health promotion is therefore 'a social and political process' that regards health as a human right and considers the maintenance of population health to be a prerequisite for social progress.

Self-assessment 6.2.5

1) List five approaches to health promotion.
2) With supportive examples, describe briefly the aims of each approach to health promotion listed in question 1.
3) This approach to health promotion is based on the assumption that humans are rational decision-makers, this approach relies heavily upon the provision of information about risks and benefits of certain behaviors.

a. behavior change approach
b. community development approach
c. biomedical approach
d. none of these

4) This approach to health promotion is synonymous with health education as it aims to increase individuals' knowledge about the causes of health and illness.

a. behavior change approach
b. community development approach
c. biomedical approach
d. none of these

6.2.6.Basic strategies of health promotion

Learning activity 6.2.6

Open the link below and read about basic strategies of health promotion, describe briefly each strategy. https://www.betterhealth.vic.gov.au/health/servicesandsupport/ottawa-charter-for-health-promotion

The Ottawa Charter identifies three basic strategies for health promotion:

- **Advocate** – good health is a major resource for social, economic and personal development, and an important dimension of quality of life. Political, economic, social, cultural, environmental, behavioral and biological factors can all favour or harm health. Health promotion aims to make these conditions favorable, through advocacy for health.
- **Enable** – health promotion focuses on achieving equity in health. Health promotion action aims to reduce differences in current health status and to ensure the availability of equal opportunities and resources to enable all people to achieve their full health potential. This includes a secure foundation in a supportive environment, access to information, life skills and opportunities to make healthy choices. People cannot achieve their fullest health potential unless they are able to control those things that determine their health. This must apply equally to women and men.
- **Mediate** – the prerequisites and prospects for health cannot be ensured by the health sector alone. Health promotion demands coordinated action by all concerned, including governments, health and other social and economic sectors, non-government and voluntary organizations, local authorities, industry and the media.

Self-assessment 6.2.6

1) Outline three basic strategies for health promotion.

6.3. Health Education

6.3.1. Concept definition of health education.

Learning activity 1.9



A



B

Look at the images above and attempt the following questions

1) What do you see in the image A and B?
2) When observing carefully the image B, what should be going on?
3) Why do you think health education is important?

a. Definition of health education

Health education is defined as a process by which people learn about their health and more specifically, how to improve their health. It can also be defined as a development of individual, group, institutions, community and systemic strategies to improve health knowledge, attitudes, skills and behaviour.

The WHO defined health education as comprising of consciously constructed opportunities for learning involving some form of communication designed to improve health literacy, including improving knowledge, and developing life skills which are conducive to individual and community health.

Health education as a tool for health promotion is critical for improving the health of populations and promotes health capital.

Health literacy is the degree to which people are able to access, understand, appraise and communicate information to engage with the demands of different health contexts in order to promote and maintain good health across the life-course.

b. Relationship between health education and health promotion

Health promotion and health education are easily confused because both concepts are closely related and work together to help people make wise decisions about their health. Health education is one aspect of promoting a healthy lifestyle and it only aims to inform people and give them knowledge about health. Health promotion is more general and broader of an area and it involves government policy-making in addition to education. Health promotion also includes areas such as cultural, social and political factors, in addition to education.

Table 6.3 1 Table comparing health promotion and health education

Characteristics	Health promotion	Health education
Definition	Health promotion aims to improve a person's health via education, consideration of psychological, as well as various cultural, social and political factors	Health education aims to inform people about health

History	1986 was the first formal conference on health promotion	1914-1939 was when the first public schools of health came into existence
Form it takes	Policy development as well as educational materials; environmental agencies also collect statistics to inform their decision-making	Education in the form of lectures notes, pamphlets, seminars and courses
Social and political factors	Increased emphasis in recent years	Not an increased emphasis
Government policy	An important aspect, often policy is developed as a part of health promotion efforts for the population	Not important, policy is not a direct part of health education

Self-assessment 6.3.1

1) Define the term 'Health education'.
2) Is health education important in the community? Justify your answer.

6.3.2. Objectives of health education.

Learning activity 6.3.2

Referring to the definition of Health education as a process by which people learn about their health and more specifically, how to improve their health; and also considering the above topics, answer the following questions:

1) What should be the relationship between health education and nutrition?
2) Give at least 2 objectives of health education.

Health education programs help empower individuals and communities to live healthier lives by improving their physical, mental, emotional and social health by increasing their knowledge and influencing their attitudes about caring for their well-being.

Health education focuses on prevention, increasing health equity, and decreasing negative health outcomes such as availability and accessibility of health services, benefiting all stakeholders.

The following are the some of the main objectives of health education:

- **To provide information about health and its value as community asset:** Health education aims at acquainting the etchers with the rules of health and hygiene. Functioning of Precautionary measures to ward off diseases and to provide good disease-free working conditions.
- **To maintain norms of good health:** The authorities should provide hygienic environment in the form of adequate ventilation proper temperature, good sanitation and all-round cleanliness. It helps the authorities to keep certain norms of health.
- **To take precautionary and preventive measures against communicable** diseases. Its aim is to take adequate precautions against contamination and spread of diseases. Thus, good sanitary arrangements are made. Precautionary and preventive measures. If they are properly adopted can help in improving the health standards of society.
- **To render assistance to the school going children an understanding of the nature and purpose of health services and facilities** – It aims at discovering physical defects and other abnormalities in the child and promoting their reduction if they are easily curable.
- **To develop and promote mental and emotional health** – Mental and emotional health are also equally important along with physical health. While physically health makes a pupil physically fit mental and emotional health enables him to maintain an even temper and a happy disposition.
- **To develop a sense of civic responsibility.** School is a miniature society Responsibility of skill health does not lie on any one's shoulders. Even some cause of skill health has their origin in social conditions which require action on the part of community as a whole in order to eradicate them. It aims at realizing the people to make combined efforts and work for community health.

Factors affecting learning

The nurse should be aware of the following factors that can facilitate or hinder optimal learning by a client:

- **Age and developmental stage:** three major developmental stage factors associated with clients' readiness to learn include physical, cognitive, and psychosocial maturation.
- **Motivation:** Motivation to learn is the desire to learn. Motivation is generally greatest when a person experiences a need and believes the need will be met through learning
- **Readiness:** Readiness to learn refers to demonstrated behaviors that reflect not only the client's willingness to learn but also his or her ability to learn at a specific time. For example, a client may want to learn self-care during a dressing change, but when experiencing pain he may not be able or ready to learn.

- **Active involvement:** When the learner is actively involved in the process of learning, learning becomes more meaningful and faster, and retention is better. Active learning promotes more effective problem solving and application of learning to the clients' own situations
- **Relevance:** The client can learn more easily if he or she can connect or relate the new knowledge or skills to what he or she already knows.
- **Feedback:** Feedback is information regarding a person's performance in meeting a desired goal; it needs to be meaningful and given in a timely manner. Feedback that accompanies the practice of psychomotor skills helps the person learn those skills.
- **Nonjudgmental support:** People learn best when they believe they are accepted and not being judged. Once learners have succeeded in accomplishing a task or understanding a concept, they gain self-confidence in their ability to learn. This confidence reduces their anxiety about failure and can motivate further learning.
- **Simple to complex:** Learning is facilitated by material that is logically organized and proceeds from the simple to the complex. Such organization enables the learner to comprehend new information, assimilate it with previous learning, and form new understandings
- **Repetition:** Repetition of key concepts and facts facilitates retention of newly learned material
- **Timing** People retain information and psychomotor skills best when the time between learning and active use of the learning is short; the longer the time interval, the higher the chances of the learning being forgotten
- **Environment** An optimal learning environment with reduced distractions facilitates learning. Noise can distract the learner and interfere with listening and thinking.
- **Emotions:** Emotions, such as high anxiety, fear, anger, and depression, can impede learning. Clients or families who are experiencing extreme emotional states may retain only part of the communication.
- **Physiological events** Physiological events, such as a critical illness, pain, or sensory deficits, inhibit learning
- **Cultural barriers** Cultural barriers to learning include language, beliefs, and values. Western medicine may conflict with cultural healing beliefs and practices. Nurses need to be competent in providing culturally safe and sensitive care; otherwise, the client may be partially or totally noncompliant with recommended treatments
- **Psychomotor ability** Nurses must be aware of a client's psychomotor skills when planning teaching. Motor abilities can be affected by health status.

Self-assessment 6.3.2

1) List the main objectives of health education.
2) List factors that can affect learning during health education

6.3.3. Principles of Health education.

Learning activity 6.3.3

1) Read through the link below and list the principles of health education

http://nursingexercise.com/health-health-education-overview/

The following are principles of health education: Credibility, Interest, Participation, Motivation, Comprehension, Reinforcement, Learning by doing, Known to unknown, Setting an example, Good human relations, Feedback and Leaders. They are discussed below:

1. **Interest:** Health teaching should be related to the interests of the people. Health programmers should be based on the "FELT NEEDS", so that it becomes "people's programme. Felt needs are the real health needs of the people that is needs the people feel about themselves.
2. **Participation:** A high degree of participation tends to create a sense of involvement, personal acceptance and decision –making and provides maximum feedback. The Alma- Ata Declaration states "The people have a right and duty to participate individually and collectively in the planning and implementation of their health care". Health programmers are unlikely to succeed if community participation is not an integral part. Health educators should include clients from the identification of the problems, planning, implementation, and evaluation.
3. **Known to unknown:** We must proceed "from the concrete to the abstract", "from the particular to the general", "from the simple to the more complicated", "from the easy to more difficult" and "from the known to unknown" Here health communicator uses the existing knowledge of the people as pegs on which to hang new knowledge
4. **Reinforcement:** Repetition of message at intervals is necessary; if the message is repeated in different ways, people are more likely to remember it.
5. **Motivation:** In every person, there is a fundamental desire to learn. Awakening this desire is called motivation. Two types of motives are: primary motives-are driving forces initiating people into action; and secondary

motives –are created by outside forces or incentives. Need for incentives is a first step in learning to change and incentives may be positive or negative. Main aim of motivation is to change behavior and motivation is contagious: one motivated person may spread motivation throughout a group.

6. **Comprehension:** Health educator must know the level of understanding, education and literacy of people to whom the teaching is directed. Always communicate in the language people understand and consider the mental capacity of the audience when
7. **Communication:** Communication is very important. Health educator should know any barrier to communication like language, cultural background of the community. Health educator has to know the group for whom he/she has to give health education.
8. **Needed-based:** Any health-related education should focus on community health needs. It should be purposeful, ascertain, specific and relevant to the problems and available solutions.
9. **Change behavior:** Health educator should know the prior behavior of the community to educate. The purpose of health education is to change their behavior and adopt a healthier one. Therefore, multidisciplinary approach is necessary to understand human behavior as well as for an effective teaching process.
10. **Scientific based knowledge:** Health-related education must be scientific and current knowledge-based. Therefore, a health educator should have the recent scientific knowledge to provide health education.
11. **Rapport relationship:** The health educators are not teachers; they are facilitators, enablers. They need to be accepted by the community members; they have to win the confidence of their clients.
12. **Compare and upgrade knowledge:** It must be remembered that people have no information or ideas about health. The health educators are not only passing information but also allow clients to analyses old ideas with new ones, compare with experience, and take decisions that are found favorable and beneficial.

Targets people for health education:

- Individuals such as clients of services, patients, healthy individuals.
- Groups E.g. groups of students in a class, youth club.
- Community e.g. people living in a village.

Self-assessment 6.3.3

1) List at least five principles of health education
2) Who are the target people for health education?

6.3.4. Process of Health education

Learning activity 6.3.4

Referring to the books that talks about the health education and using the link below, give the steps that are involved in the teaching-learning process

Books on teaching content for a variety of health care conditions

- Nurse's Handbook of Patient Education, by Shirin F. Pestonjee (2000, Springhouse).
- Mosby's Handbook of Patient Teaching, by Mary Conobbio (2000, Harcourt Health Services).

Link:

https://www.euromedinfo.eu/process-of-patient-education-introduction.html/#:~:text=Developing%20learning%20objectives,Documenting%20patient%20teaching%20and%20learning

The process of patient teaching refers to the steps you follow to provide teaching and to measure learning. The steps involved in the teaching-learning process are:

- Assessing learning needs
- Developing learning objectives
- Planning and implementing patient teaching
- Evaluating patient learning
- Documenting patient teaching and learning

a. Assessing learning needs

The first step in the process of patient teaching is assessing the patient's learning needs, learning style, and readiness to learn. Assessment includes finding out what patients already know, what they want and need to learn, what they are capable of learning, and what would be the best way to teach them.

Begin the process by interviewing the patient. **First,** find out more about the patient as an individual and what his life is like. Questions you might ask include:

- Tell me what an average day is like for you
- How has your average day changed since you've been sick?
- What do you like to do in your spare time?
- Tell me about your family
- Tell me about your work

Second, start assessing the patient's learning needs. Questions you might ask include:

- What are you most concerned about?
- What are your goals for learning how to take care of yourself?
- What do you feel you need to know to achieve your goals?
- What specific problems are you having?
- What do you know about your condition?
- What are you most interested in learning about?
- How will you manage your care at home?

Third, find out what the patient's learning style is so you can match teaching strategies as closely as possible to the patient's preferred learning style. Questions you might ask to determine the patient's learning style are:

- What time of day do you learn best?
- Do you like to read/what types of books or magazines do you enjoy reading?
- Would you prefer to read something first, or would you rather have me explain information to you?
- Do you learn something better if you read it, hear it, or do it hands on yourself?

Forth, gather information about the patient's readiness to learn. Questions you might ask include:

- How do you feel about making the changes we've discussed?
- What changes would you like to work on now?
- Are there any problems that would prevent you from learning right now?

Forth, gather information about the patient's readiness to learn. Questions you might ask include:

- How do you feel about making the changes we've discussed?
- What changes would you like to work on now?
- Are there any problems that would prevent you from learning right now?

After you've talked with the patient, interview the family. Conversations with the patient's family can fill in missing information, change your understanding of what you've heard from the patient, or affect your view of what the patient's home situation might be. Do family members ask to be present during teaching, and when teaching occurs, do they actively participate? Do they seem supportive of the patient's need to change health behaviors and to learn new tasks and skills?

You can also consider using checklists and questionnaires to obtain information about learning needs, learning style, and learning readiness. Written materials

also help you determine the patient's literacy level and ability to understand written information. Confer with other health care team members. Each health care team member has valuable information about the patient and his or her learning needs and abilities. Collaborating with others who care for the patient can give you-and them-a better picture, allowing all of you to design more effective teaching strategies.

In some instances, there are differences between the patient's and the health professional's view of the need to know. The health professional may perceive the need for information when the patient does not. For example, a pharmacist tries to give the patient information when filling a prescription. The patient's response is: „Oh, I don't need to know that-I trust my doctor. Whatever he ordered is fine. There's no reason I should know all the details. " In this example, the best approach may be for the pharmacist to start with why the information is important and explain that the physician depends on the patient to know the information.

Determining learning style involves assessing how patients learn best, when they learn best, and how able they are to learn what they need to know. Finding out whether the patient learns best by hearing, reading, or hands-on learning is relatively straightforward. However, factors such as the patient's educational and literacy levels also need to be considered. Sometimes patients and families may seem uninterested in learning because they don't know what to ask or don't yet realize that they will need information. For example, family members of a patient with a stroke may have never known anyone else with a stroke and thus may have no idea of what to plan for or what to ask. In some instances, nurses and other health professionals may take it for granted that patients have a better understanding of their condition and treatment than they actually do.

During the acute phase of an illness, patients are dependent on health care professionals. Dependency may be a realistic and necessary condition because of physical and psychosocial demands caused by the illness. Available energy is invested in coping with the physiological and psychosocial demands of the illness and the person's focus may be on survival. Readiness to learn, therefore, is limited. Not only is energy diminished, but other distractors such as pain and fatigue are usually present. Learning needs at this time usually focus on diagnostic tests and treatments. These needs are considered short-term learning-the material being learned relates to the present situation and once the situation is over, it is usually no longer necessary to retain it. As the person recovers and independence increases, he or she progresses to the post-acute or resolution stage of illness. For most patients, an improving physical condition and the desire to return to normalcy acts as an incentive to learn how to recognize, prevent, and manage complications. Due to short hospital stays, much of the patient's learning readiness for management and prevention of further problems will take place in an out-patient or a home setting.

b. Developing learning objectives

To develop objectives, you need to define the outcomes you and the patient expect from the teaching-learning process. Unlike goals, which are general and long-term, learning objectives are specific, attainable, measurable, and short-term. For example, for a newly diagnosed diabetic patient, the overall learning goal may be to learn how to maintain blood glucose levels between 70 and 150 mg/dl at all times. Reaching such a goal may be overwhelming unless it's broken down into specific, short-term behavioral objectives that lead up to the overall goal. For this patient, an objective such as „After this session, the patient will be able to list five symptoms of hypoglycemia "is one step on the way to the larger goal.

A simple and practical way of developing learning objectives is to start with the words WHO, DOES, WHAT, HOW, and WHEN. For example, the objective "The patient will list five signs of hyperglycemia by time of discharge" could be broken down this way:

- WHO-the patient
- DOES-will list
- WHAT-five signs of hyperglycemia
- HOW-accurately or by stating out loud
- WHEN-by discharge

Make sure in writing objectives that you use action words that are measurable such as list, state, explain, and demonstrate. Avoid using terms that cannot be measured or observed easily, such as understand or appreciate.

c. Planning and implementing teaching

The next step in the process is to plan and implement an individualized teaching plan. Your teaching plan should include what will be taught, when teaching will occur, where teaching will take place, who will teach and learn, and how teaching will occur.

Patient/clients should be involved in what will be taught/learnt from the beginning up to the end. Nurse as educator should identify the needs of the client and engage the client in the whole learning process.

Plan when and where the teaching/learning will take place considering what is best for the client; ensure that the clients inform you what works for them and offer as many as possible realistic options available. Consider the time and the length and depth of the session that is good for the client.

d. Evaluating teaching and learning

Evaluation, the last phase of the teaching process, is the ongoing appraisal of the patient's learning progress during and after teaching. The goal of evaluation is to find out if the patient has learned what you taught.

Here are some ways you can evaluate learning:

- Observe return demonstrations to see whether the patient has learned the necessary psychomotor skills for a task
- Ask the patient to restate instructions in his or her own words
- Ask the patient questions to see whether there are areas of instruction that need reinforcing or re-teaching,
- Give simple written tests or questionnaires before, during, and after teaching to measure cognitive learning
- Talk with the patient's family and other health care team members to get their opinions on how well the patient is performing tasks he or she has been taught
- Assess physiological measurements, such as weight and blood pressure, to see whether the patient has been able to follow a modified diet plan, participate in prescribed exercise, or take antihypertensive medication
- Review the patient's own record of self-monitored blood glucose levels, blood pressure, or daily weights
- Ask the patient to problem solve in a hypothetical situation

e. Documenting patient teaching

Your documentation of patient teaching should take place throughout the entire teaching process. Documentation is done for several purposes. Documentation promotes communication about the patient's progress in learning among all health care team members. Good documentation helps maintain continuity of care and avoids duplication of teaching. Documentation also serves as evidence of the fulfillment of teaching requirements for regulatory and accrediting organizations such as the JCAHO, provides a legal record of teaching, and is mandatory for obtaining reimbursement from third party payers. Documentation of patient teaching can be done via flow-charts, checklists, care plans, traditional progress notes, or computerized documentation. Whatever the method, the information must become a part of the patient's permanent medical record. Table 6 shows suggestions on what to document and how.

Sample Teaching Plan: Wound Care

Assessment of Learner: A 24-year-old male university student suffered a 7-cm laceration on the lower anterior part of the left leg during a hockey game. The laceration was cleaned, sutured, and bandaged. The client was given an appointment to return to the health clinic in 7 days for suture removal. Client states that he lives in the university dormitory and is able to care for the wound if given instructions. Client is able to understand and read English.

- Nursing diagnosis: Lack of knowledge of wound and suture care
- Long-term goals: Client's wound will heal completely without infection or other complications.
- Intermediate goal: At clinic appointment, client's wound will be healing without signs of infection, loss of function, or other complication.
- Short-term goals: Client will (a) correctly list three signs and symptoms of wound infection and (b) correctly perform a return demonstration of wound cleansing and bandaging.

Behavioral outcomes.

On completion of the instructional session, the client will do the following:

- Describe normal wound healing
- Describe signs and symptoms of wound infection
- Demonstrate wound cleansing and bandaging

Content outline

- Normal wound healing
- Infection:
  - Signs and symptoms
  - Signs of systemic infection.
- Wound care equipment
  - Cleansing solution
  - Dressing materials
- Demonstration of wound cleansing and bandaging on the client's wound
- Resources available for client's questions
- Follow-up treatment plan

Teaching methods

- Describe normal wound healing with the use of audiovisuals.
- Discuss the mechanism of wound infection. Use audiovisuals to demonstrate infected wound appearance.
- Demonstrate the equipment needed for cleansing and bandaging wound.
- Demonstrate wound cleansing and bandaging on the client's wound.
- Discuss available resources.
- Provide a handout of the procedure and frequently asked questions (FAQs)

Evaluation

The client will do the following:

- Correctly describe normal wound healing and signs and symptoms of wound infection
- Return demonstration of wound cleansing and bandaging
- State contact person and telephone number to obtain assistance
- State date, time, and location of follow-up appointment

Documenting Patient Teaching

What to document

- The patient's learning needs
- The patient's preferred learning style and readiness to learn
- The patient's current knowledge about his or her condition and health care management
- Learning objectives and goals as determined by both you and the patient
- Information and skills you have taught
- Teaching methods you have used, such as demonstration, brochures, and videos.
- Objective reports of patient and family responses to teaching
- Evaluation of what the patient has learned and how learning was observed to occur

How to document

- Record the patient's name on every page of your documentation.
- Include the time and date on all entries.
- Sign each entry.

- Write in black or blue ink, for legal and reproduction purposes.
- Write legibly.
- Be accurate and truthful when discussing facts and events.
- Be objective-don't show personal bias or let others influence what you write.
- Be specific.
- Be concise-record information succinctly, without compromising accuracy.
- Be comprehensive-include all pertinent information.
- Record events in chronological order.

Source: Rankin, S.H., & Stallings, K.D. (1996). Patient Education: Issues, Principles, Practices, 3rd ed. Philadelphia: Lippincott-Raven, 233-236.

Self-assessment 6.3.4

1) List the steps used in the teaching learning process
2) What to document in patient teaching

End unit assessment 6

1) Selective Public Health Care is:

a. Client is a passive recipient
b. Service provision is not holistic, equitable or sustainable
c. Health achieved through medical interventions
d. All of the above

2) Comprehensive PHC is?

a. Holistic understanding and implementation of healthcare and wellbeing that is equitable, empowering and sustainable.
b. Health achieved through medical interventions
c. Client is a passive recipient and Service provision is not holistic, equitable or sustainable
d. All of the above

3) Health is best described as a resource that allows a person to have

a. A social and spiritual life
b. A productive social and economic life
c. Economic well being
d. Physical capacity

4) What distinguishes primary healthcare from primary care

a. A focus on primary, secondary, and tertiary intervention
b. Provision of interventions specific to the health need
c. Works within a multidisciplinary framework
d. Planning and operation of services is centralized

5) Primary prevention is concerned with

a. Preventing disease or illness occurring
b. Delaying the progress of an existing disease or illness
c. Maintaining current health status
d. Treatment of existing disease or illness

6) Which of the following approaches to health promotion aims to reduce premature death by targeting the whole population or groups who are at higher risk of developing disease?

a. Medical/preventive
b. Behavioural
c. Educational
d. Empowerment

7) A home health nurse who provides skin care and repositioning of a client on bedrest is conducting activities in:

a. Health promotion
b. Health protection
c. Health prevention
d. Rehabilitation

8) The public health nurse who does Blood Pressure screening and related health education is conducting activities in the level of :

a. Primary prevention
b. Secondary prevention
c. Tertiary prevention
d. Focused prevention

9) The major goal of health promotion includes all of the following Except:

a. optimizing health
b. focusing on subacute diseases
c. staying health
d. creating new health environment

10) Which of the following is the core principle of health promotion?

a. one or two strategies
b. inequity
c. sustainability
d. disempowerment

11) A person's health and wellbeing are dependent on a good, good future, good care, and support. These influences, social, economic, physical, and environmental factors, are known as:

a. Health care
b. Health promotion
c. Public health
d. Determinants of health.

12) The scope of health promotion in which developing partnerships and alliances with other organizations and sectors in the community to build capacity and positively influence health within the wider community is ….

a. Developing personal skills
b. Creating supportive environments
c. Strengthen community action
d. Delivering health public policy

13) The principle of health promotion where people take an active part in decision making is:

a. Empowerment
b. Participative
c. Holistic
d. Equitable

14) 14) Which audience comment best demonstrates self-efficacy?

a. I believe I can learn to do this.
b. I think the nurse is a real expert in this stuff.

c. Those computer graphics really make it clear how people can do this.

d. Wow. The nurse really expects us to do this

15) Which of the following would be the best question for a nurse to ask to determine whether an educational intervention had any effect?

a. Are you interested in any other topics for me to teach?

b. Did you find this program useful to you?

c. Do you understand the material I presented?

d. How are you going to apply these ideas at home?

16) In preparing to give a presentation on breast self-examination, a nurse went to the Rwandan Cancer Center and obtained a variety of handouts to use during the presentation. Which possibly erroneous assumption is the nurse make?

a. Handouts are the best technique for emphasizing important points.

b. Handouts will be easily read by people in the audience.

c. People will appreciate the brochures and freebies such as shower hook reminders.

d. People will use the reminders and put them in their bathrooms

17) Principles of health education includes all except:

a. Participation

b. Motivation

c. Reinforcement

d. Punishment

18) What are the key elements of health promotion?

19) What is the Purpose of health promotion?

UNIT 7 INTROUCTION TO ENVIRONMENTAL SANITATION

Key unit competence

Apply house and environmental sanitation

Introductory activity 7



A



B

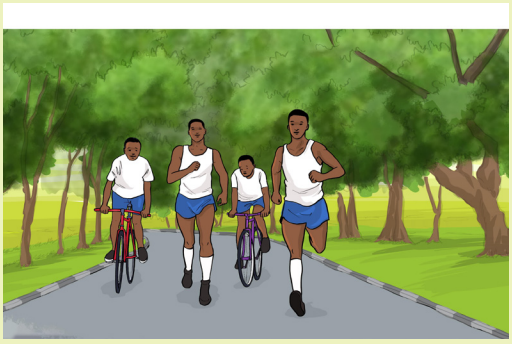


C

1) Observe and think about the environmental aspects of image A, B, and C
2) Does the status of the above images have an impact on people's health? Yes or No? Explain your answer.
3) What can you do to maintain a good sanitation in this environment?

7.1. Introduction to environmental health

Learning activity 1.8



A



B



C



D

1) Identify image(s) that reflect on good environmental health and explain why.
2) Identify image(s) that reflect on poor environmental health and outline the three possible health risks for people who live in that area.

7.1.1. Concepts definition

Environment

The term environment refers to “the complex of physical, chemical, and biotic factors (as climate, soil, and living things) that act upon an organism or an ecological community and ultimately determine its form and survival.

The term environment captures the notion of factors that are external to the individual.

Environment also refers to ssurroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans and their interrelationships.

Environmental aspect

Element of an organisation's activities, products or services that interacts or can interact with the environment – ***the activity***

Environmental condition

A state or characteristic of the environment as determined at a certain point in time.

Environmental impact

Change to the environment (adverse or beneficial), wholly or partly resulting from the organisation's environmental aspects – ***potential change or harm.***

The environment has a major impact on the risk of chronic diseases such as cancers, chronic lung disease, and birth defects and on the risk of acute illnesses such as viral gastroenteritis, respiratory infections, and such vector-borne diseases as malaria.

Ecological System (Ecosystem)

An **ecosystem** is a dynamic complex of plant, animal, and microorganism communities and the nonliving environment interacting as a functional unit. Humans are an integral part of ecosystems.

Survival of the human population depends upon ecosystems, which aid in supplying clean air and water as part of the earth's life support system. Ecosystems are being degraded with increasing rapidity because of human environmental impacts such as urbanization and deforestation. Degradation of ecosystems poses environmental dangers such as loss of the oxygen-producing capacity of plants and loss of biodiversity.

Environmental Health

Environmental health comprises those aspects of human health, including quality of life, that are determined by physical, chemical, biological, social and psychosocial factors in the

environment. It also refers to the theory and practice of assessing, correcting, controlling, and preventing those factors in the environment that can potentially affect adversely the health of present and future generations." (World Health Organization)

Environmental pollution

Pollution is the introduction of contaminants into the natural environment that causes adverse change. Pollution can take the form of chemical substances or energy, such as noise, heat or light. Pollutants, the components of pollution, can be either foreign substances/energies or naturally occurring contaminants. Environmental pollution is one of the most serious problems facing humanity and other life forms on our planet today.

"Environmental pollution is defined as "the contamination of the physical and biological components of the earth/atmosphere system to such an extent that normal environmental processes are adversely affected." Pollutants can be naturally occurring substances or energies, but they are considered contaminants when in excess of natural levels. Any use of natural resources at a rate higher than nature's capacity to restore itself can result in pollution of air, water, and land.

Environmental pollution is of different types namely air, water, soil, noise and light-weight. These cause damage to the living system. How pollution interacts with public health, environmental medicine and the environment has undergone dramatic change.

Environmental health Prevention

Prevention lies at the core of environmental public health. It includes not only the control of hazards but also health promotion through environmental strategies. Prevention in environmental health extends upstream to the root causes of environmental change and to the resulting environmental pressures that eventually have an impact on human health and well-being.

Actions to reduce or control the hazards (or to promote environmental health) can be taken at all points in this chain of events. In this three-level model:

Primary prevention involves interventions prior to the development of any signs of ill health. In the case of environmental health, strategies directed toward modifying driving forces, pressures, and state of the environment are primary prevention efforts.

Secondary prevention is early detection of a health problem, prior to the onset of disease, for the purpose of intervening at an early stage to prevent the development of the disease. In environmental health this is usually a preventive effort targeting the phase when exposure has begun to occur but prior to the development of any health impacts.

Tertiary prevention involves early identification and treatment of people with a disease, to prevent or forestall disability and/or death. An example of tertiary prevention is the effort to ensure that patients with asthma follow recommended

guidelines for medical treatment and environmental remediation in order to reduce the frequency and severity of asthma attacks.

7.1.2. Essential Services of Environmental Health

1. Monitor environmental and health status to identify and solve community environmental health problems.
2. Diagnose and investigate health problems and health hazards in the community.
3. Inform, educate, and empower people about health issues.
4. Mobilize community partnerships and action to identify and solve health problems.
5. Develop policies and plans that support individual and community environmental health efforts.
6. Enforce laws and regulations that protect environmental health and ensure safety.
7. Link people to needed environmental health services and assure the provision of health care when otherwise unavailable.
8. Assure a competent public health and personal health care workforce.
9. Evaluate effectiveness, accessibility, and quality of personal and population-based environmental health services.
10. Research for new insights and innovative solutions to environmental health problems.

Self-assessment 7.1

1) What is the difference between environment and environment health?
2) What are the environment impacts that degrade the Ecosystem?
3) Why is it important to assess and control environmental factors?
4) Explain environmental pollution and outline its types.
5) Enumerate 4 essential services of Environmental Health

7.2. Sanitation

Learning activity 7.2



A



B

Observe the above images and respond to the following questions:

1) Explain image A and B
2) What are possible health risks from the above images?
3) Talk briefly on the measures should be implemented to prevent these risks?

7.2.1. Definition

Sanitation is the hygienic means of promoting health through prevention of human contact with the hazards of wastes. Hazards can be physical, microbiological, biological or chemical agents of disease. Wastes that can cause health problems are human and animal feces, solid wastes, domestic wastewater (sewage, sullage, greywater), industrial wastes, and agricultural wastes.

Sanitation generally refers to the provision of facilities and services for the safe disposal of human urine and faeces.

7.2.2. Objectives of Sanitation

a. Protect and promote Health

Keeping disease carrying waste and insects away from the people, toilets and home, break the spread of disease, prevent spreading of waterborne diseases, and improve the health and quality of life.

b. Protect environment against pollution

Keeping disease carrying waste and insects away from the environment prevent environment from pollution (air, soil and emission) and prevent contamination of water resources (surfaces and ground water)

7.2.3. Types of Sanitation

Basic sanitation: refers to the management of human feces at the household level.

On-site sanitation: the collection and treatment of waste is done where it is deposited. Examples are the use of pit latrines, septic tanks, and imhoff tanks.

Off-site sanitation: A sanitation system, in which waste is collected, transported away from the plot where it was generated and treated.

Food sanitation: refers to the hygienic measures for ensuring food safety.

Environmental sanitation: the control of environmental factors that form links in disease transmission. Subsets of this category are solid waste management, water and wastewater treatment, industrial waste treatment and noise and pollution control.

Ecological sanitation: a concept and an approach of recycling to nature the nutrients from human and animal wastes. Ecological sanitation is based on composting or vermicomposting toilets where an extra separation of urine and feces at the source for sanitization and recycling has been done. It thus eliminates the creation of backwater and eliminates fecal pathogens from any still present wastewater (urine).

7.2.4. Poor sanitation

Poor sanitation is linked to transmission of diseases such as cholera, diarrhea, dysentery, hepatitis A, typhoid, polio and stunting. Poor sanitation reduces human wellbeing, social and economic development. Poor sanitation also is a major cause of neglected tropical diseases such as intestinal worms, schistosomiasis and trachoma. Poor sanitation contributes to malnutrition.

a. The main causes of poor sanitation and solutions

The biggest cause of poor sanitation globally is simply lack of education. Even the simple act of washing hands regularly can have a huge impact on the overall health of a community. There are many causes of poor sanitation, let's explore a few of these.

Open defecation

This is an area we focus on as Ecoflo-WASH has the capacity to help communities with composting toilets that will alleviate many of the issues surrounding open defecation. Put simply, open defecation fouls surrounding environments and is a major cause for the spread of preventable diseases.

Unsafe drinking water

Unsafe, untreated and contaminated drinking water is estimated to cause more than 500,000 diarrhoeal deaths each year. Many of these could be prevented with simple sanitary practices and clean drinking water. Diseases like diarrhoea, cholera, dysentery, typhoid and polio are rife in areas where clean drinking water isn't available.

High density living

In areas where informal or temporary / semi-permanent settlements crop up, the high-density nature of these areas along with less access to sanitation programs and products means there's a high likelihood of sewage and waste not being dealt with properly.

Lack of education

This is a relatively easy issue to combat as education starts typically in the form of school programs teaching children the importance of healthy habits when it comes to sanitation, waste control, clean drinking water and washing their hands.

7.2.5. Benefit of improving sanitation

Benefits of improved sanitation extend well beyond reducing the risk of diarrhea. These include: reducing the spread of intestinal worms, schistosomiasis and trachoma, which are neglected tropical diseases that cause suffering for millions; reducing the severity and impact of malnutrition; promoting dignity and boosting safety, particularly among women and girls; promoting school attendance: girls' school attendance is particularly boosted by the provision of separate sanitary facilities; and potential recovery of water, renewable energy and nutrients from faecal waste.

Self-assessment 7.2

1) Define sanitation
2) Explain the objectives of sanitation?
3) Explain 2 factors that may contribute to poor sanitation
4) What are the benefits of improving Sanitation?

7.3. Environmental Sanitation

Learning activity 7.3

In the previous lessons we learnt about environment and sanitation, Please think more on that lesson and respond to the following questions:

1) What do you think is environmental sanitation?
2) What do you think as characteristics of good environment sanitation?
3) What can you do to maintain a good environmental sanitation?

7.3.1. Definition of environmental sanitation

Environmental sanitation is a set of interventions that reduce peoples' exposure to disease by providing a clean environment in which to live, with measures to break the cycle of disease. This usually includes hygienic management of human and animal excreta, solid waste, wastewater, and storm water; the control of disease vectors; and the provision of washing facilities for personal and domestic hygiene. Environmental Sanitation involves both behaviors and facilities that work together to form a hygienic environment.

7.3.2. Importance of environmental Sanitation

There are so many reasons why sanitation and hygiene are crucial.

a. Protecting from illnesses and diseases

The lack of sanitation in water and nutrition kills many people. Eating contaminated food has been shown to be one of the leading causes of worm infections. Individuals who live in neglected houses suffer from asthma conditions, experience more fall and slip injuries, and can get microbial infections from germs growing up in their bathrooms and kitchens. Maintaining a good environmental sanitation enhance the prevention of illness and diseases.

b. Maintaining mental health

Maintaining good sanitation and hygiene also plays an essential role in nourishing mental health. Researchers have long linked mental stress and anxiety to messy environments and lack of organization. Mental health also comes hand-in-hand with physical health, and each of them will always impact the other in turn. A healthy body will nurture a healthy mind, and the opposite holds true as well.

c. Improving self-image and self confidence

By ensuring the house, nutrition, and lifestyle are sanitary and by guiding population through proper personal hygiene care, are empowering them to be the best

versions of themselves. As a result, their self-image improves and they gain more self-confidence.

d. Improving population social status

Good environmental sanitation improve social status of the population, because the people are clean, no skin rashes or other pathology their sociability will increase.

e. Increasing population focus and productivity

Providing the optimum environment for them, both physically and mentally, will help them grow. They'll grow as balanced individuals who strive to achieve the best versions of themselves, and they'll have an adequate environment that helps in achieving that. They'll be able to focus more on their work or studies without any distractions or limitations. As a result, their productivity will increase, allowing them to achieve more growth and nourishment.

f. Providing a better quality of life

By maintaining proper sanitation and ensuring good hygiene, create the perfect environment for the community. Making the most out of living conditions, and, in doing so, it provides a better quality of life. The quality of life provided can be measured by the lack of illnesses and diseases, the lack of psychological issues, and the growth they experience while living under your roof.

7.3.3. Characteristics of environmental sanitation

Description	Concerns
Personal hygiene	Hygiene of body and clothing
Water supply	Adequacy, safety (chemical, bacteriological, physical) of water for domestic, drinking and recreational use.
Human waste disposal	Proper excreta disposal and liquid waste management
Solid waste management	Proper application of storage, collection, disposal of waste. Waste production and recycling
Vector control	Control of mammals (such as rats) and **arthropods** (Insects such as flies and other creatures such as mites) that transmit disease
Food hygiene	Food safety and wholesomeness in its production, storage, preparation, distribution and sale, until consumption
Healthful housing	Physiological needs, protection against disease and accidents, psychological and social comforts in residential and recreational areas

Institutional hygiene	Communal hygiene in schools, prisons, health facilities, refugee camps, detention homes and settlement areas
Water pollution	Sources, characteristics, impact and mitigation
Occupational hygiene	Hygiene and safety in the workplace

7.3.4. Strategies to improve environmental sanitation

The improved sanitation shall be promoted through a combination of measures:

Awareness campaigns related to visible and non-visible health impacts of poor sanitation and aiming at behavior change;

Marketing the sanitation offer, targeting on people's expectations and preferences such as comfort, status, health benefits, value or safety;

Education and training in schools and universities; Urban and rural population about the maintenance of environmental sanitation

Provision of limited material incentives or subsidies to accelerate the improvement, construction or replacement of sanitary facilities; using the provision of water supply services as an incentive and opportunity to improve sanitation facilities.

Self-assessment 7.3

1) In which way good environmental sanitation can improve population social status: Choose the correct answer

a. If the people are clean, no skin rashes or other pathology their sociability will rise

b. If the people are clean, with skin rashes or other pathology their sociability will rise

c. If the people are clean, no skin rashes or other pathology their sociability will decrease

d. If the people are dirty, no skin rashes or other pathology their sociability will rise

2) Define Environmental sanitation

3) Outline two strategies that my enhance environmental sanitation improvement

4) Explain how environmental sanitation increase population focus and productivity

7.4. Human excreta management

Learning activity 7.4



A



B

Observe the above image A and B respond to the following questions:

1) What are the sanitation problems do you observe?
2) What do you think as consequences of the sanitation problems observed for human health?
3) What advices can you give to that people in order to resolve the observed problems

7.4.1. Introduction

Human excreta are the wastes products of the human digestive system, menses and human metabolism including urines and feces.

Human excreta should be disposed safely in order to avoid contamination of the environment, food or hands. Safe disposal of excreta is crucial to ensure a health environment and for protecting personal health; is one of the principal ways of breaking the fecal -oral disease transmission cycle.

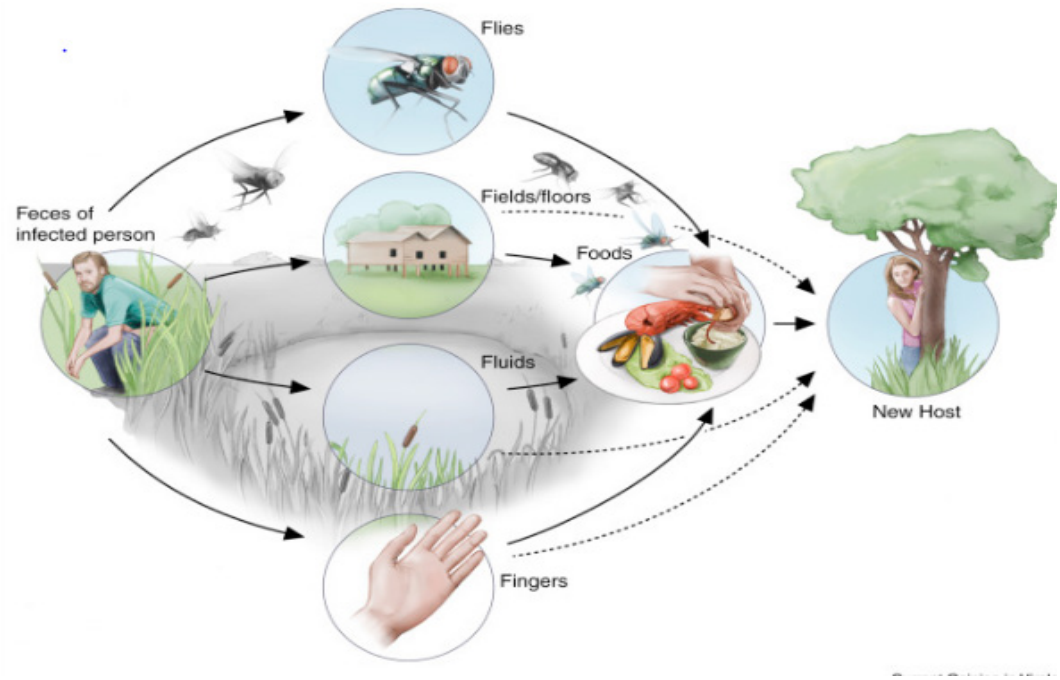


Figure 7.4 1 Fecal-oral transmission

Bacterial, viral and parasitic zoonotic pathogens that transmit via the fecal-oral route have a major impact on global health. A well-established sanitation system is a key barrier to disease transmission.

7.4.2. Sanitation system

A **sanitation system** is a combination of different functional units and technologies for safe collection, transport, treatment or disposal of human waste in order to protect people and environment.

Safe sanitation is essential for health; for preventing infection, improving and maintaining mental and social well-being. The lack of safe sanitation systems leads to infection and disease, including: **Diarrhea,** a major public health concern and a leading cause of disease and death among children under five years in low- and middle-income countries, **neglected tropical diseases** such as soil-transmitted helminth infections, **schistosomiasis** and **trachoma** that cause a significant burden globally and **Vector-borne diseases** such as West Nile Virus or lymphatic filariasis through poor sanitation facilitating the proliferation of Culex mosquitos.

7.4.3. Components of a sanitation system

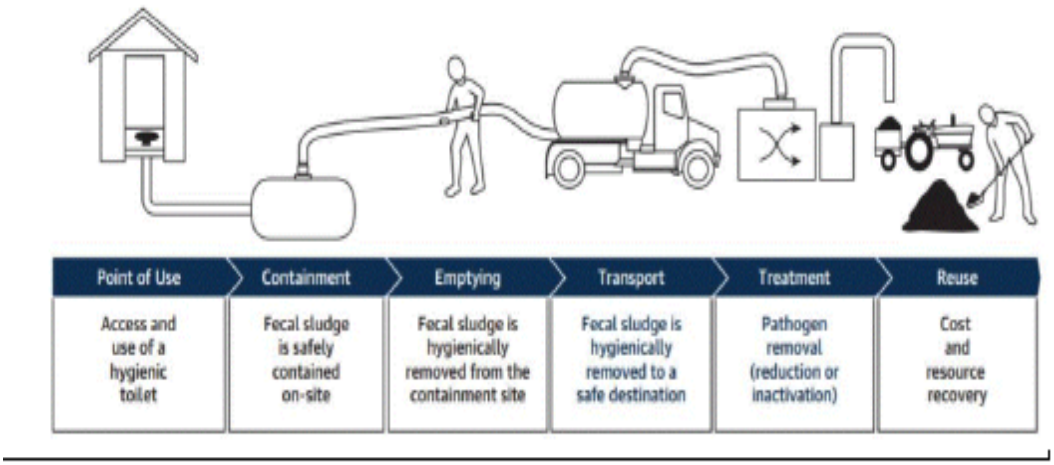


Figure 7.4 2 Components of sanitation system

A sanitation system has five components: User interface, Collection and storage, Conveyance, Treatment, Use and /or Disposal

a. User interface

The user interface is the way in which the sanitation system is accessed. The user interface strongly influences the technological choices of subsequent processes.

The following should be considered while siting the on-site systems:

- An on-site sanitation system must not be located over a surface water body and should be at 30 m from the edge of the flood plain of a surface water body.
- Onsite systems should be sited away from trees to prevent obstruction of their features such as ventilation pipes.
- On-site system should be constructed with enough space for easy access and movement during desludging.
- Soil conditions such as rocky outcrops, unstable ground and depressions with shallow water table should be avoided as much as possible.

They are two types of toilets depending on operational modes:

Dry toilets: A dry toilet refers to a toilet that operates without flushing water. The design for dry toilets requires careful judgment and considerations for the following features:

- **The slab or pedestal** (user can sit on) base should be well sized to the pit so that it is both safe for the user and prevents storm water from infiltrating the pit (which may cause it to overflow).

- For smooth emptying, the slab should provide a hole for desludging with cover,
- Slab should be at least 150 mm above the ground level with a hole covered with a lid when not in use.
- **The hole** should be closed with a lid to prevent unwanted intrusion from insects or rodents entering the containment technology. The lid also controls odours and flies from the toilets.
- The pit should be lined with stones or burnt clay bricks to prevent the collapse of the earth.
- **The superstructure** should be designed and constructed so that it prevents intrusion of rainwater, storm water, animals, rodents or insects. It should also provide maximum level of privacy. Features of the superstructure include:

– Roof should be waterproof to ensure user comfort (protection against the rain and sun)

– Ventilation should be provided between the walls and roof for aeration,

– Door with a locker.

- **Accessible handwashing** facilities with soap and water should be available nearby in a location that encourages use.

Operation maintenance of dry toilets

The following practices should be respected in operation and maintenance for dry toilets:

- **Operation and maintenance** of the interface (toilet) should be practiced to avoid risk of illness to public health.
- **Cleanliness:** The toilet and all surfaces of the room (e.g. bathroom, washroom, rest room, cubicle, etc.) should be kept clean and free of excreta.
- **Cleaning arrangements:** Locally-available cleaning materials should be safely stored and used, and all people carrying out cleaning should observe safe working practices.
- Where dry toilets are used as public ones, the following should be specifically catered for operation and maintenance:

– Safety (adequate lighting, no slippery grounds or surface, firm construction and cleaning agents), privacy (doors with lockers) and accessibility should be ensured,

– Public toilets should be placed again with a visible sign for visitors' convenience,

– Each public toilet should have at least one toilet for the people with disability. They should have bigger doors for wheel chair access, and railing for support near the latrines.

– Each public toilet should also be well designed to meet the needs of the children and pregnant women.

Water-based toilet: flush toilets; toilets that uses water.

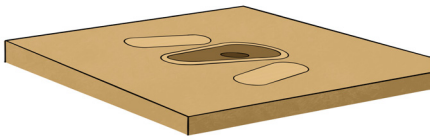
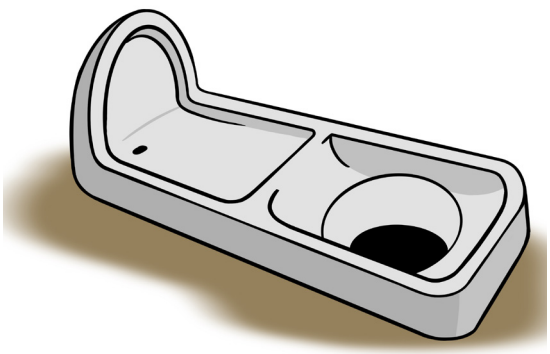
The design of water-based toilets should consider the following minimum requirements to ensure safely managed sanitation across the service chain.

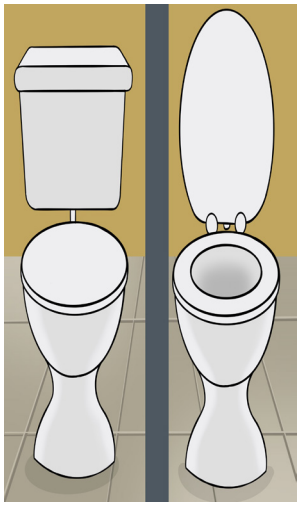
- The water seal at the bottom of the pour flush toilet or plan should have a slope of at least 25o.
- Water seal should be made out of plastic or ceramic to prevent clogs and to make cleaning easer (concrete may clog super easily if it is rough or textured),
- The s shape of the water seal determines how much water is needed for flushing and optimal depth of the water seal head should be approximately 2 cm to minimize the water required to flush the excreta,
- The trap should be approximately 7 cm in diameter
- For public toilets, the design should mention clear sign boards for visitors and at least one door for disabled (with big door with wheel chair access) and railing for support near accessible,
- Appropriateness: Pour flush toilet is appropriate for those who sit or squat (pedestal or slab) as well as for those who cleanse with water. It is also appropriate when there is a constant supply of water

Operation and maintenance

- Pour flush toilets rarely require repair. However, it should be cleaned regularly to maintain hygiene and prevent the build-up of stains.
- To reduce water requirements for flushing and to prevent clogging, it is recommended that dry cleansing materials and products used for menstrual hygiene be collected separately and not flushed down the toilets.
- For pour flush toilets used as public toilets, priority should be given to efficient-flush toilets5 which can reduce each full flush, from 11 to 3 litres per flush.

Table 7.4 3 Examples of different types of toilets

Types of toilets	Description
 **Pedestral dry toilet**  **Slab or squat pan**	• Operates without water. • Both urine and faeces falls through a drop hole • Can be made on site with locally available materials, very low cost • Odors are a constant nuisance • Safety concerns for children, disabled, elderly
Urine diverting dry toilet (UDDT) 	• Operating without water and separate the liquid (urine) from the solid (faeces) fraction. • Smells are minimal, • Very inexpensive, UDDTs can be built locally. • Allows practical reuse of excreta and saves water. • If not well used faeces can be accidentally deposited in the urine section and lead to clogging and cleaning problems • -Urine pipes/fittings can become blocked with time

Pour -Flush toilet 	• A pour-flush toilet is or can be a regular flush toilet except that water does not come from the cistern above but is poured by the user. 2−3 L of water are required per flush • May be pedestal (sitting) and squatting pans No constant water supply is required. Stored water can be used for flushing instead. • a water trap can reduce fly and odor nuisance • Dry cleansing materials should be discarded separately to prevent clogging.
Cistern-Flush toilet(CFT) 	• The flush toilet is mass-produced and usually made of porcelain, Water stored in the cistern behind the toilet is released by pushing the handle for it to run into the bowl, mixing with the excreta and carrying it away. • The toilet is comfortable and easy to use • The water seal prevents odors from coming back • Minimum 3 L of water per flush • Require regular water supply • Generates a large volume of sewage to be discharged

b. Collection and storage

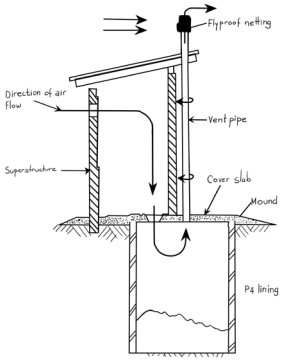
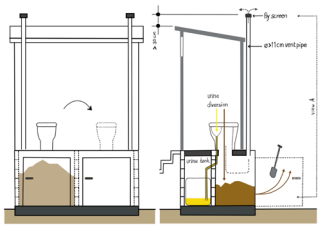
The products generated at the user interface need to be collected and stored safely. In the case of extended storage, some treatment may be provided, though it is generally minimal and dependent on storage time.

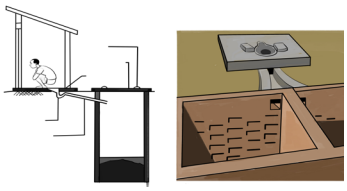
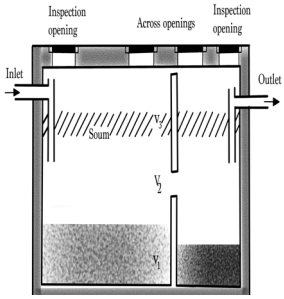
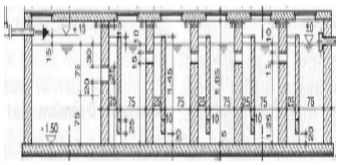
Where groundwater is used as a drinking-water source, a risk assessment should ensure that there is sufficient vertical and horizontal distance between the base of a permeable container, soak pit or leach field and the local water table and/or drinking-water source (allowing at least 15 m horizontal distance and 1.5 m vertical

distance between permeable containers and drinking-water sources is suggested as a rule of thumb).

When any tank or pit is fitted with an outlet, this should discharge to a soak pit, leach field or piped sewer. It should not discharge to an open drain, water body or open ground. Where products from storage or treatment in an on-site containment technology are handled for end use or disposal, risk assessments should ensure workers and/or downstream consumers adopt safe operating procedures.

Table 7.4 1 Examples of Collection and storage technologies

Types	Description
Single , double and ventilated improved pits  	• **The single pit:** Excreta, along with anal cleansing materials (water and/or solids) are deposited into a pit. • **A ventilated improved pit** (VIP) is similar to a single pit with addition of a vertical ventilation pipe. The ventilation pipe reduces odor nuisance • **Double pits:** When double pits are used, one side is used at a time. The material is emptied from the first pit once the second pit is full, and the cycle is started again. **Note:** • Risk of contaminating groundwater if pits are improperly located. • Stagnant water in pits may cause insect breeding • Pits may be susceptible to failure or overflowing during floods or heavy rain events.
Double dehydration vaults 	• Urine and faeces are stored separately, thereby facilitating hygienisation and reuse. • Vaults should be used with UDDTs and/or urinals. When urine is separated from faeces, the faeces dry quickly. • In the absence of moisture, organisms cannot grow and as such, smells are minimized and pathogens are destroyed. **Note:** Additional urinals should be provided for men

Twin pits for pour-flush 	• Two alternating pits connected to a pour flush toilet. The blackwater (and greywater) is collected in the pits and allowed to slowly infiltrate into the surrounding soil. With time, the solids are sufficiently dewatered and can be manually removed with a shovel. **Note:** Excreta requires manual removal • Stagnant water in pits may promote insect breeding.
septic tank 	• A septic tank is a watertight storage container (concrete or fiberglass) for storage as well as for physical and chemical treatment of liquid household waste. In the first chamber, most of the solids accumulate; in the second or 'polishing chamber', the effluent is further processed.
Anaerobic baffled reactor (baffled septic tank) 	• An anaerobic baffled reactor (ABR) is mainly a small septic tank (settling compartment) followed by a series of anaerobic tanks (at least three). • Most of the solids are removed in the first and largest tank. Effluent from the first tank then flows through baffles and is forced to flow up through activated sludge in the subsequent tanks. • Requires expert design and skilled Construction. • Requires secondary treatment and discharge

c. Conveyance of wastes products

Consist of empting and transport of products from one functional group to another. Full latrines must be either emptied or moved to a new location. Latrines should be emptied in a safe and hygienic manner by well trained, equipped and protected workers (e.g., gloves, masks, hats, full overalls and enclosed waterproof footwear) who transport the sludge to a treatment, use or disposal site.

For septic tanks, a common rule is that they should be emptied when the solids' component of the waste fills between one-half and two-thirds of the. Based on the

most common sizes, septic tanks should be cleaned, at the least, every five to seven years.

The choice of the technology for emptying and transportation depends on different factors including types and quantity of products to be transported, distance to cover, accessibility, topography, soil and ground characteristics, financial resources and availability of the service provider

They are two types of emptying and transportation of Feacal sludge:

- **Human powered emptying technologies:**

Human powered emptying technologies have been innovatively developed in recent years. These technologies are appropriate for areas that are not served or not accessible by vacuum trucks, or where vacuum truck emptying is too costly. They are well suited to dense, urban and informal settlements. The most common types of human powered emptying equipment including Sludge Gulper, Diaphragm pump, Nibbler and semi-manual pit emptying technology.

- **Fully motorized emptying and transportation technologies**

Fully motorized emptying and transport technologies refer to a vehicle equipped with a motorized pump and a storage tank for emptying and transporting faecal. The pump is connected to a hose, which is lowered down into the tank or pit, and the sludge is sucked up into the holding tank of the vehicle. These technologies are powered by the electricity, fuel or pneumatic systems. Provide an essential service to unsewered areas. They are more used in urban areas with good road and to containments that are easily accessible. They can also be used to empty schools, public places and public institutions.

d. Treatment of Fecal sludge

Treatment helps to protect the environment and public health from fecal pathogens and other contaminants. The treatment facility should be designed and operated according to the specific end use/disposal objective and operated using a risk assessment and management approach to identify, manage and monitor risk throughout the system.

Generally, faecal sludge treatment plants treat faecal sludge in three steps: (i) solid/ liquid separation, (ii) dewatering and (iii) stabilization of further treatment.

From the technical performance, investment needed for installation, operation and maintenance (O&M) perspective for different systems, the following treatment systems for faecal sludge are most appropriate in Rwanda:

- **Imhoff tanks:** Can treat high organic loads and are resistant to organic shock loads. Space requirements are low and Imhoff tanks can be used in warm and cold climates. As the tank is very high, it can be built underground if the groundwater table is low and the location is not flood-prone.

- **Settling/thickening tank:** It is a low-cost technology for treating faecal sludge, low operating costs can be built and repaired with locally available materials and no energy is required.
- **Unplanted drying beds:** Have low operating costs, can be built and repaired with locally available materials, no energy is required and good dewatering efficiency.
- **Anaerobic digestion (for biogas production):** It is a net energy-producing process which produces renewable energy in the form of biogas. The liquid digestate is a better fertilizer in many ways than normal chemical fertilizers. The digestate produces fewer odours when it is spread on farmland, and is less likely cause pollution of local rivers and streams and spreading untreated manure.
- **Solar drying beds:** Solar greenhouse is the use of renewable energy sources, reduces the cost of drying. The dried sewage sludge is characterized by a smaller volume and a ceramic structure, which facilitates storage and transport.
- **LaDePa (Latrine Dehydration and Pasteurization):** Converts raw FS from pit latrine, public toilets and households' septic tanks into enriched and pelletized compost, low-cost technology with limited energy requirement.
- **Co-composting:** Enriches soil, helping retain moisture and suppress plant diseases and pests, reduces the need for chemical fertilizers, encourages the production of beneficial bacteria and fungi that break down organic matter to create humus, a rich nutrient-filled material

e. Disposal / Reuse

Excreta should be disposed or used in ways that are the least harmful to people and environment. Workers handling effluent or faecal sludge (FS) should be trained on the risks and on standard operating procedures and use personal protective equipment. A multi-barrier approach (i.e., the use of more than one control measure as a barrier against any pathogen hazard) should be used.

There are different options for FS use, particularly as a soil conditioner (land application in raw form or as compost or co-compost), building material (cement mixture), biofuel (gas, char briquettes) and in the production of protein (e.g., animal feed and via the black soldier fly). Inappropriate disposal in soils and leach field are discouraged.

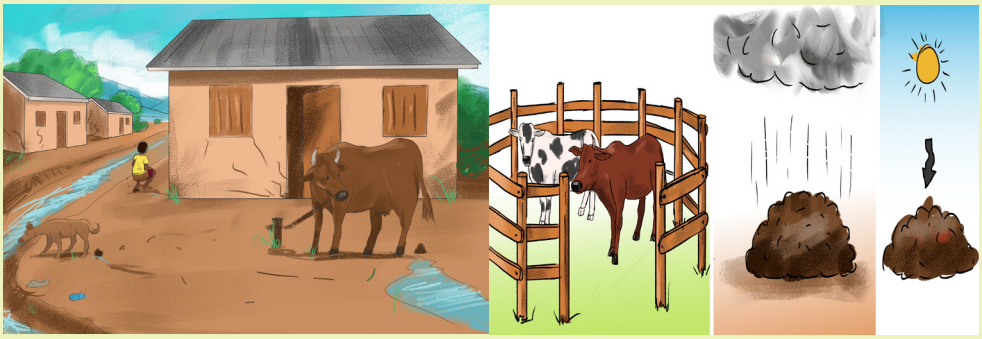
In Rwanda, faecal sludge is mostly used as a soil conditioner for agriculture purposes especially in rural areas to schools and prison farms. However, the end products should be well treated to avoid illness that may occur once in contact with them. The dewatered solid content seen with no viable reusable option is disposed in either dumpsite or sanitary landfill.

Self-assessment 7.4

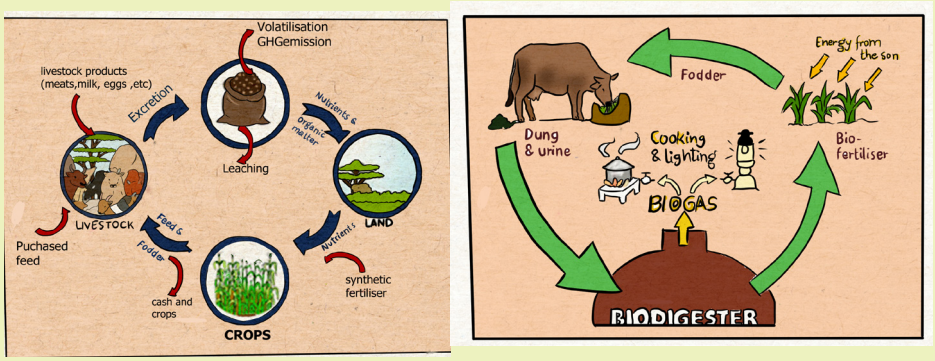
1) Family of X live in rural area where it is difficult to access water, which kind of toilet will you advise them to use and why? Enumerate the features to consider while designing that toilet.
2) Enumerate and explain three components of a sanitation system?
3) What are benefits of safe excreta disposal?
4) Talk about a urine diverting toilet?
5) Differentiate Cistern Flush toilet from a flush pour toilet
6) Define a septic tank and give its class in a sanitation system component

7.5. Animal Excreta management

Learning activity 1.8



A



B

Observe carefully the above image and respond to the following questions

1) Think about the practices observed on image A
2) What may be the consequences of practices on image A?
3) What do you think will be good practices can you advise to the people on image A.
4) Think about image B, what is your observation?

7.5.1. Definition

Animal excreta consist of animal feces and urines; also called manure. Animal manure contains significant number of micro-organisms such as bacteria, virus and parasites, responsible of many diseases in humans.

7.5.2. Importance of Animal excreta management

Animal excreta may cause pollution of air and water. If animal excreta are well managed; it can be beneficial to the population.

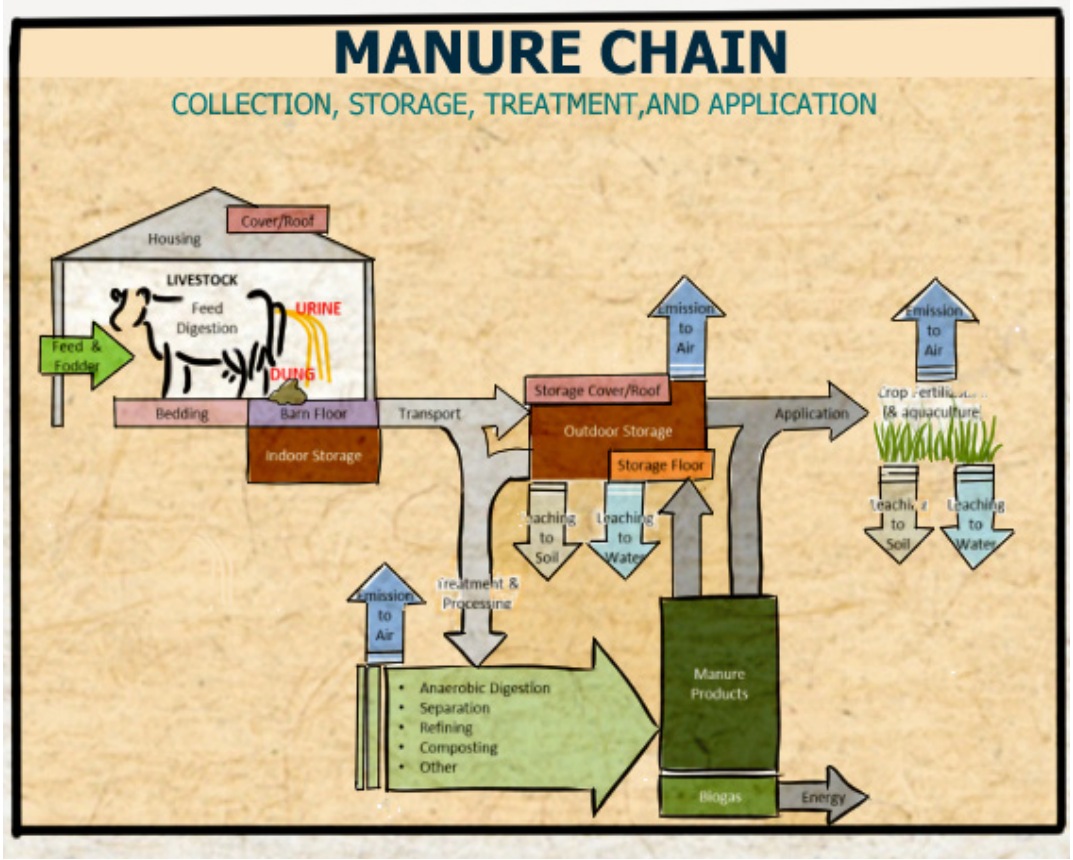
Management of animal excreta has a great importance on environment, health and economy:

- **Environment:** Reduce detrimental environmental effects; prevent the environment impacts on air, soil, wildlife and the marine, reduces greenhouse gas emission from waste, reduces liter and odor and prevent the risks of flood.
- **Economy:** Increases business opportunities, provides savings to business, especially in resources extraction and use, by waste prevention actions recovery and/or recycling activities, achieves economic saving by improvements in human health and the environment leading to higher productivity, lower medical costs, better environmental quality and the maintenance of ecosystem services. Capturing methane as biogas provides cooking fuel and lighting that can replace firewood and charcoal.
- **Agriculture:** used as fertilizer, promote sustainable agriculture and increase crop production.
- **Public Health:** Protects human health and safety in community and at waste management facilities, minimize the risks associated with the wastes, and improves occupational health. Prevent transmission of zoonotic diseases that be transmitted through manure.

7.5.3. Animal excreta management practices

Safe and effective animal excreta management practices are key to prevention of disease transmission from animal excreta to human.

Animal excreta management is done into four steps: Collection, storage, treatment and reuse or application.

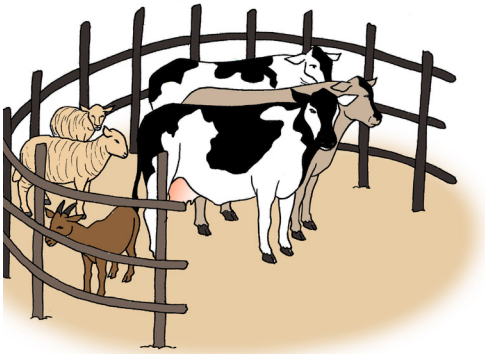


a. Excreta collection or manure collection

Manure collection is very dependent on livestock housing.

Zero –grazing system that consist of confinement of animals in housing with open sheds with roofing, sloping, concrete floor , slurry pit and manger. Frequent dung removal is recommended and if possible separate urine collection and drainage to limit Nitrogen loss. Remove manure as frequent as possible, locally available materials such tridents, hoe and basket may be used to handle manure.

Deep litter system: these are system where layers of bedding material are repeatedly spread on older layers as the get soiled. Deep litter poultry ensure a collect moisture balance in the litter. Prevent any water spills from drinker and add litter when necessary.

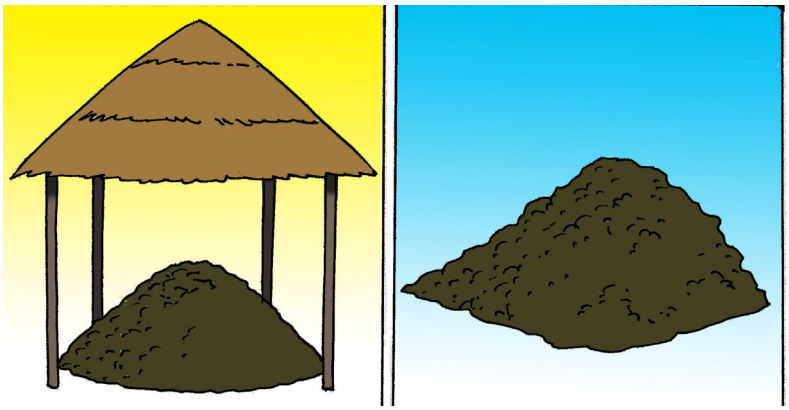




b. Manure storage

Manure may be stored in over-ground piling or heaping, underground pit or ditch. Good storage should aim prevention of nutrient loss and pollution.

Heap or Pit should be covered to reduce ammonia volatilization, reduce odor and flies. The floor should be impermeable to reduce nitrate leaching.



c. Treatment of animal excreta

They are three most common ways of treating manure:

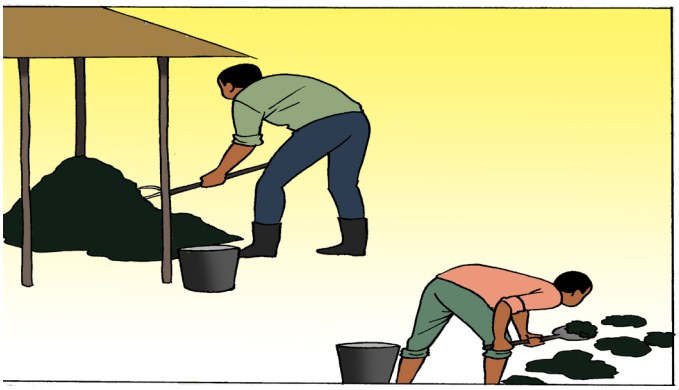
- **Drying:** urines and feces captured using bedding materials
- **Composting:** is the natural process of decomposition of organic matter by micro -organism under aerobic condition.
- **Anaerobic digestion:** anaerobic digestion is biological process that produces biogas.

d. Manure application

Consist of safe use of manure in agriculture as fertilizer.

Manure application rates vary according to the type of animal, Collection and storage method available soil nutrient content and the crop cultivated.

General rule; apply two handfuls of solid manure (cattle, goat, sheep etc) or one handful of poultry manure per hole/plant.



7.5.4. Animal manure, potential pathogens and illnesses Caused in humans

Animal excreta can cause many illnesses if handled inappropriately.

The table below summarizes potential pathogens and illness caused in humans.

Organism	Type of organism	Illness caused in humans	Route of infection
Escherichia coli	Bacteria	Bloody diarrhea, severe anemia, kidney failure or even death	Direct contact with feces and through water contaminated with feces
Campylobacter	Bacteria	Diarrhea and systemic illness	Fecal contaminated water
Salmonella	Bacteria	Diarrhea, fever, and abdominal cramp	Through fecal contaminated water or food
Leptospira	Bacteria	Leptospirosis with symptoms such as high fever, kidney or liver failure, meningitis, or even death	Directly through animal urine or soil containing animal urine contacting breaks in the eyes, skin, mouth or nose
Listeria	Bacteria	Listeriosis characterized by fever, chills, headache, upset stomach and vomiting, most likely to affect pregnant women and unborn babies	Manure contaminated food
Shigella	Bacteria	Bloody diarrhea	Direct contact with feces

Organism	Type of organism	Illness caused in humans	Route of infection
Cryptosporidium	Parasite	Watery diarrhea, may be life-threatening to peoples with poor immune system	Soil, water, food, or surfaces contaminated with feces of infected animal
Hepatitis A	Virus	Viral liver disease causing mild to severe illness, flu-like symptom, diarrhea, fever, discomfort, decreased appetite, tiredness	Fecal, or by indirect contact through contaminated food and water
Rotavirus	Virus	Gastroenteritis. Symptoms include severe diarrhea, vomiting, fever, and dehydration	Contamination of hands, objects, food or water with infected feces
Nipah virus	Virus	Severe illness in both animal and human. Asymptomatic infection to acute respiratory syndrome and fatal encephalitis	Eating food contaminated by feces of infected animal
Avian Influenza	Virus	Conjunctivitis, fever, cough, sore throat, muscle aches, pneumonia	Contact with contaminated droppings

7.5.5. Different ways to block transmission of pathogen from animal excreta

- Treat your water to make it safe to drink
- Wash your hands
- Prepare food well (e.g., washing vegetables with safe water)
- Cover food and water to prevent contact from animals and flies
- Fence or tether animals
- Fence gardens to prevent animals from accessing them
- Wear protective footwear to prevent soil-transmitted helminth infections
- Remove excreta from the living environment and treat/dispose in a safe location

Self-assessment 7.5

1) What is the collect sequence of animal excreta management:

a. Collection, storage, treatment and application
b. Collection, treatment, reuse and storage,
c. Storage, Collection, treatment and application
d. Treatment, reuse, Collection, and storage,

2) Match the following items:

Organism	Illness caused in humans	Route of infection
Escherichia coli	a. Gastroenteritis. Symptoms include severe diarrhea, vomiting, fever, and dehydration	i. Directly through animal urine or soil containing animal urine contacting breaks in the eyes, skin, mouth or nose
Leptospira	b. Viral liver disease causing mild to severe illness, flu-like symptom, diarrhea, fever, discomfort, decreased appetite, tiredness	ii. Fecal, or by indirect contact through contaminated food and water
Shigella	c. Leptospirosis with symptoms such as high fever, kidney or liver failure, meningitis, or even death	iII. Direct contact with feces and through water contaminated with feces
Hepatitis A	d. Bloody diarrhea	Iv. Contamination of hands, objects, food or water with infected feces
Rotavirus	e. Bloody diarrhea, severe anemia, kidney failure or even death	v. Direct contact with feces

7.6. Solid waste management overview

Self-assessment 7.6

In your community you have various waste resulted from home activities, community population activities, industries, and medical waste.

Based on observed waste in your community, respond to the following questions:

1) What types of solid wastes do you observe in your community?
2) What do you do to manage them?

7.6.1. Introduction

Waste in general is defined as materials, which have lost their value to their first owners. In other words, the term waste is used to describe materials that are perceived to be of negative value.

"Solid Waste" is defined as a solid material possessing a negative economic value, which suggests that it is cheaper to discard than to use.

Solid waste is another type of human wastes, which refers to the solid or semi-solid forms of wastes that are discarded as useless or unwanted. It includes food wastes, rubbish, ashes and residues, etc.

Solid wastes generated from human activities include those from residential, commercial, street sweepings, institutional and industrial categories. Solid waste can create significant health problems and a very unpleasant living environment if not disposed of safely and appropriately. If not correctly disposed of, waste may provide breeding sites for insect-vectors, pests, snakes and vermin (rats) that increase the likelihood of disease transmission. It may also pollute water sources and the environment. All generated solid waste must be managed to minimize environmental impact and to protect human health.

7.6.2. Classification of solid waste

Solid waste can be classified into two categories by its characteristics. These are: Organic solid waste and Inorganic Solid waste

Organic solid waste: Wastes that are generally biodegradable and decompose in the process of which emits offensive and irritating smell when left unattended.

Putrescible wastes e.g., Garbage

Inorganic solid waste: Solid matter that does not decompose at any rat. This category of waste matter may be combustible depending on the type of the nature of the material they constitute. Non-putrescible wastes e.g., Rubbish

7.6.3. Solid Waste Management

The most environmentally preferred strategy consists of reduction of waste production. Through source reduction, the volume of solid waste that must be deposited in landfills is limited, e.g: Improved packaging designs that reduce the number of materials that must be discarded (e.g., the use of smaller packages for products); design products, such as refillable bottles, that can be reused.

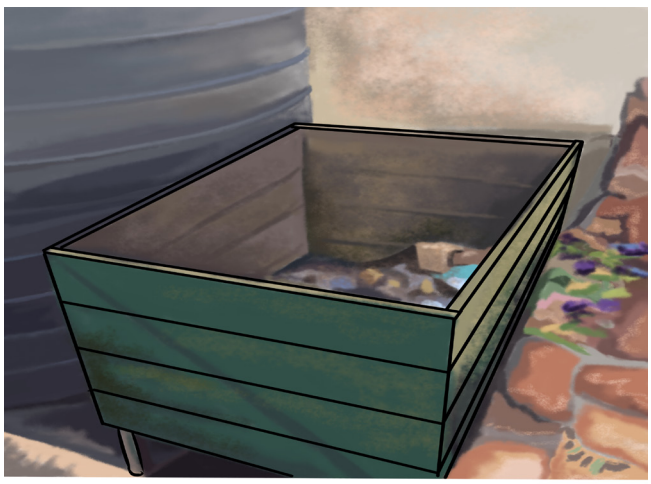
Solid waste management consists of four steps: storage, collection, transportation, and disposal.

a. Storage

Storage is a system for keeping materials after they have been discarded and prior to collection and final disposal. Where on-site disposal systems are implemented, such as where people discard items directly into family pits, storage may not be necessary. In emergency situations, especially in the early stages, it is likely that the affected population will discard domestic waste in poorly defined heaps close to dwelling areas. If this is the case, improved disposal or storage facilities should be provided fairly quickly and these should be located where people are able to use them easily. Improved storage facilities include:

- Small containers: household containers, plastic bins, etc
- Large containers: communal bins, oil drums, etc.
- Shallow pits: is larger-diameter sewer that carry both solid and liquid wastes.
- Communal depots: walled or fenced-in areas

In determining the size, quantity and distribution of storage facilities the number of users, type of waste and maximum walking distance must be considered. The frequency of emptying must also be determined, and it should be ensured that all facilities are reasonably safe from theft or vandalism.



b. Collection

Collection simply refers to how waste is collected for transportation to the final disposal site. Any collection system should be carefully planned to ensure that storage facilities do not become overloaded. Collection intervals and volumes of collected waste must be estimated carefully. Waste collection services are provided by private operators or companies based on door-to-door collection. Waste is collected using specific trucks which are dominated by used roll-on-trucks owned by private operators.

c. Transportation

This is the stage when solid waste is transported to the final disposal site. There are various modes of transport which may be adopted and the chosen method depends upon local availability and the volume of waste to be transported. Types of transportation can be divided into three categories:

- Human-powered: open hand-cart, hand-cart with bins, wheelbarrow, tricycle
- Animal-powered: donkey-drawn cart
- Motorized: tractor and trailer, standard truck, tipper-truck

d. Disposal

The final stage of solid waste management is safe disposal where associated risks are minimized. There are four main methods for the disposal of solid waste: Land application (burial or landfilling), compositing, Burning or incineration and recycling.

i. Land application: burial or landfilling

A landfill is an engineered pit, in which layers of solid waste are filled, compacted and covered for final disposal. It is lined at the bottom to prevent groundwater pollution.

Advantages

Effective disposal method if managed well

Sanitary disposal method if managed effectively

Energy production and fast degradation if designed as a bioreactor landfill

Disadvantages

Fills up quickly if waste is not reduced and reusable waste is not collected separately and recycled

A reasonably large area is required

Risk of groundwater contamination if not sealed correctly or the liner system is damaged

High costs for high-tech landfills

If not managed well, there is a risk of the landfill degenerating into an open dump

Once the landfill site is shut down Operation, Maintenance (O&M) and monitoring must continue for the following 50 to 100 years.

ii. Composting

Defined as "the aerobic biological decomposition of organic materials (e.g., leaves, grass, and food scraps) to produce a stable humus-like product. A natural process that breaks down organic material (material that once came from a living thing) to create a valuable soil amendment.

Items **that can be composted** include: vegetable scraps, fruit scraps, nuts, nutshells, eggshells, coffee grounds, tea leaves, yard trimmings, grass clippings, leaves, twigs, woodchips and straw.

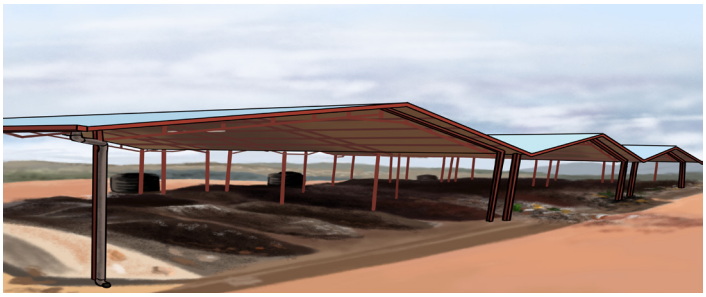


Figure 7.6 1 Organic waste compositing at the landfill

Benefits of composting

- Supports healthy soil structure and plant growth
- Creates valuable resource for agriculture, including a home garden
- Reduces the amount of waste to be collected and transported
- Eliminates the need for chemical fertilizers by serving as a homemade organic fertilizer
- Soil holds water better
- Reduces methane emissions from landfills
- Costs very little to get started and nothing to operate, can be done at home

How to Use the Compost

- Place it around the plant that requires extra attention
- Cover the compost layer with soil
- Add extra compost on top by scooping out a small proportion of the soil from around the plant
- Create a shallow dip to make watering easy and for runoff to not occur

Wait a few weeks so that the plants have time to grow. Hopefully, when they're grown, you will be able to see the effect compost has on your plants.

iii. Burning or incineration

Incineration is defined as the controlled burning of solid, liquid, or gaseous wastes. In other words; incineration is a treatment technology involving the destruction of waste by controlled burning at high temperatures.



Figure 7.6 2 Incineration site

Burning wastes at home is dangerous to public health and environment; chemicals released into the air cause serious air pollution and are related to illnesses such as cancer. Smoke from burning is hazardous to human health, especially lungs. Also bothers eyes, nose, and throat. Plastics are especially dangerous than wood, paper and some construction debris.

Benefits of Waste Incineration

Proper and responsible waste incineration provides various benefits:

Some progressive countries use modern waste treatment and incineration facilities to convert heat used in the burning of trash to electric power.

The incinerator bottom ash can be used as an aggregate in creating lightweight blocks, pavement concrete, bulk fill, and more. Environment conscious entities are using novel technologies to create bricks, tiles, shingles, and other construction materials from ash.

Incineration can decrease the solid mass of the original waste, which is already compacted by garbage trucks, to a further 80 to 85%. It can also reduce the volume of trash up to 95%.

The reduction of solid waste by incineration drastically reduces the amount of trash that ends up in a landfill.

Incineration can also be used to treat hazardous waste (such as materials contaminated with hazardous chemicals) or medical waste (such as hospital waste contaminated with blood or other potentially infectious materials). The high heat of incineration can destroy these hazards. Hazardous and medical wastes can only go to special incinerators that are permitted to treat these types of wastes.

Safety precautions of burning and burying solid waste

- Combustible waste should always be separated from non-combustible waste before being loaded into the burn chamber.
- The incinerator should have had sufficient air pollution controls, meets specific air emission standards
- If burning and incineration is used, the equipment chosen should be designed and sized to accommodate the waste produced, minimize fire hazard and result in the complete combustion of the waste.
- Burn waste as far away as possible from people and items that can catch fire, such as your house
- Burn it in a pit or a barrel to prevent fire spreading
- Bury ashes in a pit or landfill; they may have dangerous substances in them
- Locate the site at least 500 meters away and downhill from drinking water sources.
- Ensure that there is at least 2 meters between the bottom of the disposal pit and the highest annual groundwater level. The more distance between the bottom of the pit and the groundwater, the lower the risk of contamination.
- Do not dispose waste in an area susceptible to flooding.
- Locate the site in clay-like soil if possible. The smaller the soil grain size, the lower the risk of soil and groundwater contamination. Do not dispose waste in sandy areas.
- Cover waste with 0.1 meters of soil or ash regularly (e.g., daily or weekly) to reduce smells and pests, and prevent waste from blowing away.
- Construct a fence to keep animals and children out of the disposal site.

iv. Recycling

Recycling is defined as the process of "**collecting and reprocessing a resource so it can be used again**," e.g: collecting aluminum cans, melting them down, and using the aluminum to make new cans or other aluminum products." Recycling is taking a product, breaking it down from its current form and making something new from the same material

Items that can be recycled are: Papers, metal, plastics and glass.

Benefits of recycling

- Reduces emissions of greenhouse gases
- Prevents pollution generated by the use of new materials,
- Decreases the number of materials shipped to landfills, thereby reducing the need for new landfills,

- Recycling companies often pay for materials, income can be generated
- Preserves natural resources, opens up new manufacturing employment opportunities and Saves energy

Self-assessment 7.3

1) Wastes that are generally biodegradable and decompose in the process of which emits offensive and irritating smell when left unattended. These wastes are known as:

a. Inorganic wastes
b. Organic wastes
c. Metal Wastes
d. Paper Wastes

2) One of the following items is the benefit of waste composting

a. Supports healthy soil structure and plant growth
b. Eliminates the need for chemical fertilizers by serving as a homemade inorganic fertilizer
c. Increase methane emissions from landfills
d. Discourage household because composting consume much time

3) Match each concept with its definition

Concept	Definition
Incineration	A. Solid matter that does not decompose at any rate This category of waste matter may be combustible depending on the type of the nature of the material they constitute
Shallow pits	B. system for keeping materials after they have been discarded and prior to collection and final disposal
Inorganic solid waste	C. a treatment technology involving the destruction of waste by controlled burning at high temperatures
Recycling	D. a larger-diameter sewer that carry both solid and liquid wastes.
Storage	E. the process of “collecting and reprocessing a resource so it can be used again

4) define the following terms

a. waste
b. solid waste

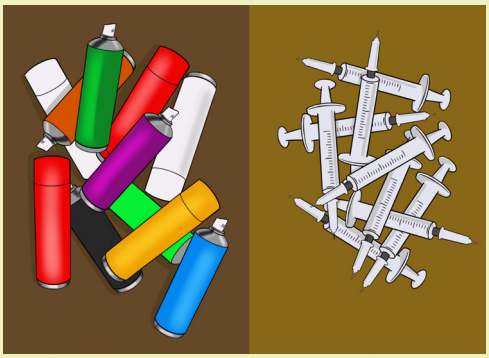
5) outline 5 safety precautions of burning and burying solid waste

7.7. Hazards waste management

Learning activity 7.7



A



B



C



D

Observe the above images and respond to the following questions

1) What do you consider as difference or similarities between images in row A?
2) Illustrate the difference between images in row A and B
3) What to do you think as risks to the environment or Human health can be resulted from Images in row A if are not well handled?

7.7.1. Definition

Hazardous waste: is a contaminant that is a dangerous good and is no longer wanted or is unusable for its original intended purpose and is intended for storage, recycling, treatment or disposal.

Hazardous waste is waste that is dangerous or potentially harmful to our health or the environment. Hazardous wastes can be liquids, solids, gases, sludge's, discarded commercial products (e.g., cleaning fluids or pesticides), or the by-products of manufacturing processes.

7.7.2. Categories of hazardous waste

a. Radio-active substance

Radioactive waste is the type of hazardous waste that contains radioactive material. Radioactive waste is a by-product of various nuclear technology processes, industries based on nuclear medicine, nuclear research, nuclear power, manufacturing, construction, coal and rare-earth mining and nuclear weapons reprocessing. Any substances capable of emitting ionizing radiation are said to be radioactive and are hazardous because prolonged exposure often results in damage to living organisms.

b. Chemicals

The hazardous chemical wastes can be categorized into five group's namely synthetic organics, inorganic metals, salts, acids and bases, and flammables and explosives. Some of the chemicals are hazardous because they threaten human lives.

c. Bio-medical wastes

The main sources of hazardous biological wastes are from hospitals and biological research facilities. The biological waste has the capability of infecting other living organisms and has the ability to produce toxins. Biomedical waste mainly includes malignant tissues discarded during surgical procedures and contaminated materials, such as hypodermic needles, bandages and outdated drugs.

d. Flammable wastes

The hazardous waste category also includes flammable wastes. This grouping is necessary because of risk involved in storage, collection and disposal of flammable wastes. The flammable wastes may be of solid, liquid or gaseous form. Examples of flammable waste include organic solvents, oils, plasticizers and organic sludge's.

e. Explosives

Explosive hazardous wastes are mainly ordnance (artillery) materials. Explosives also involve high potential for hazard in case of storage, collection and disposal. These types of wastes may exist in solid, liquid or gaseous form.

7.7.3. Risks of hazardous waste

Hazardous waste presents a danger to the environment, or to people in the nearby vicinity if it is not handled correctly. Inhalation, ingestion, or dermal exposure to hazardous materials can cause significant harm to humans, animals and plants,

whilst the environment can and has been damaged by improper disposal. Hazardous waste presents a serious danger if:

It's released into the air, water, or land and can contaminate the surrounding environment

A large amount is released at one time, or if small amounts are released frequently at the same location

It comes into contact with humans via skin contact, ingestion, or breathing in hazardous materials

Improper storage or disposal leading to spills and leaks which can lead to fires

Hazardous wastes can cause dermatitis to the skin, some cause asthma on long exposure, and others cause the eyes to smart and run and also tightening of the chest

7.7.4. Principles of hazardous waste management

a. Requirement for Environmental Impact

No person shall engage in any activity likely to generate any hazardous waste without a valid Environmental Impact Assessment Certificate issued by a competent Authority.

b. Collection of hazardous waste

Any generator of hazardous waste shall ensure that all hazardous waste generated are collected in appropriate manner.

c. Segregation of hazardous waste

The segregation for hazardous waste must meet the following requirements:

- All hazardous waste must be segregated to prevent incompatible mixtures;
- The segregation can be done by hazard class

d. Packing material for hazardous waste

The packing materials of hazardous waste shall be: inert and not react with the hazardous waste the materials which can be used include: Steel; Aluminium; Natural Wood; Plywood; Reconstituted wood.

e. Types of containers for hazardous waste packing

The hazardous waste containers shall be in the following types: Bags; Boxes; Drums; Jerrycans; Combination packaging; Composite packaging.

f. Characteristics of containers

The containers when used for packaging of hazardous wastes shall meet the following requirements:

Container shall be of mild steel with suitable corrosion-resistant coating and roll-on roll-off cover or plastic drums, cardboard cartons for a variety of wastes. However, all such containers should hold up mechanical handling; the containers for liquid hazardous waste should be completely closed, in fact sealed. Container should be easy to handle during transportation and also emptying. Manual handling of containers should be minimized to the extent possible.

g. Packaging of hazardous waste

The containers of hazardous waste must be able to withstand normal handling and retain integrity for at least six months. In general, packaging for hazardous waste must meet the following requirements: All packaging material shall be of such strength, construction and type that they would not break or become defective during transportation; Packaging material should be such that there will be no significant chemical or galvanic action among any of the material in the package.

h. Labeling of hazardous waste

All hazardous waste containers must be clearly labeled showing all its contents. The labels must be waterproof and firmly stuck to the containers so that they cannot be removed. Containers storing hazardous waste shall be labeled with the words “HAZARDOUS WASTE” in official language or Warning or caution statements which may include any of the following as appropriate: the words “WARNING” or “CAUTION”. The information on the label must include the waste type, origin (name, address, telephone number of generator), hazardous property (flammable), and the symbol for the hazardous property (The red square with flame symbol).

i. Transportation for hazardous waste

The following are requirements pertaining to the transportation of hazardous wastes:

- The transportation vehicles and containers shall be suitably designed to handle the hazardous wastes and must be closed at all times;
- Vehicles shall be painted preferably in blue color to facilitate easy identification;
- Vehicle should be fitted with mechanical handling equipment for safe handling and transportation of wastes;
- The words “HAZARDOUS WASTE” shall be displayed on all sides of the vehicle in one of the officials’ languages;
- Transporter shall carry documents of manifest for the wastes during transportation;
- The trucks shall be dedicated for transportation of hazardous wastes and they shall not be used for any other purpose;
- Each vehicle shall carry first-aid kit, spill control equipment and fire extinguisher;

- Driver(s) shall be properly trained for handling the emergency situations and safety aspects involved in the transportation of hazardous wastes;
- The design of the trucks shall be such that there is no spillage during transportation.

j. Storage facilities for hazardous waste

The following are requirements pertaining to the storage of hazardous waste facilities:

- The storage area should have a proper containment system. The containment system should have a collection area to collect and remove any leak, spill or precipitation;
- No open storage is permissible and the designated hazardous waste storage area shall have proper enclosures, including safety requirements;
- Proper stacking of drums with wooden frames shall be practiced; d. In case of spills/leaks, cotton shall be used for cleaning instead of water;
- Signboards showing precautionary measures to be taken in case of normal and emergency situations shall be displayed at appropriate locations;
- Manual operations within storage area are to be avoided to the extent possible. In case of personnel use, proper precautions need to be taken, particularly during loading/unloading of liquid hazardous waste in drums.

k. Treatment of Hazardous Waste

Any person who generates hazardous waste shall treat or cause to be treated such hazardous waste using the classes of incinerators manner. Any products treated shall be disposed of or treated in accordance with the conditions set by the Regulatory Authority in consultation with the concerned stakeholders.

Do not dispose hazardous waste in latrines, drainage channels, water sources or on the ground.

Dispose hazardous waste in a separate landfill site from general household waste

l. Exportation permit

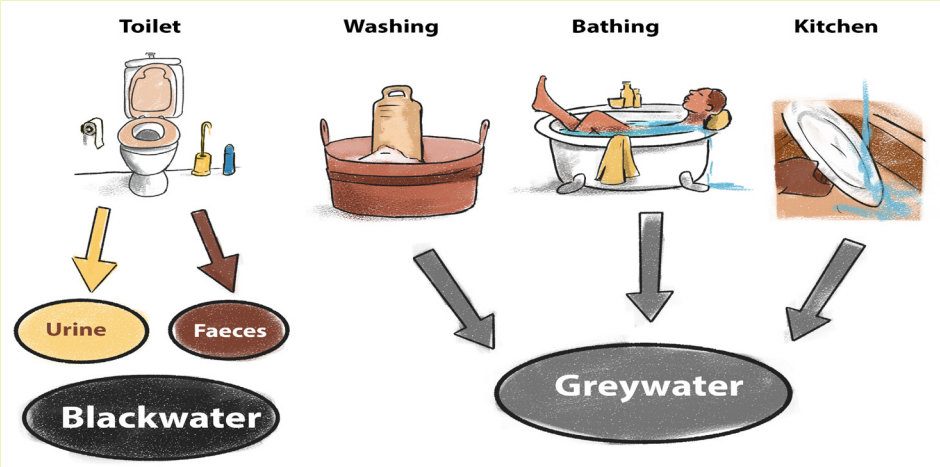
No person shall export hazardous wastes without a valid permit issued by a national competent Authority.

Self-assessment 7.7

1) Define hazardous waste
2) Talk about hazardous Bio-medical wastes
3) Give the typical information should appear on label of hazardous waste?
4) Explain 2 requirements pertaining to the storage of hazardous waste facilities
5) Discuss the hazardous waste treatment

7.8. Domestic waste water management

Learning activity 7.8



A B

Observe carefully the above image and respond to the following questions

1) Think about the names the waste water A and B?
2) Do you think that there is a difference between the waste water A and waste water B. If yes what is the difference between them.
3) What do you think as the importance of managing waste A and waste B

7.8.1. Definition

Domestic waste water is the wastewater that is produced due to human activities in households. They are three types of domestic water:

- **Black water:** A mixture of urine, faeces and flush water along with anal cleansing water (if water is used for cleansing) and/or dry cleansing materials. Black water contains pathogens of faeces and the nutrients of urine that are diluted in flush water.
- **Grey water:** Water generated from domestic activities; such as laundry, dish washing, bathing, cleaning and in the kitchen except water from toilets. Usually has low levels of pathogens, especially compared to black water. Any pathogens are usually from cross-contamination with excreta. Fecal pathogens can end up in grey water through hand washing after defecation, washing children after defection, and washing children's diapers. Grey water may also have other contaminants like oil, grease, soap, detergent or other household chemicals.
- **Overflow water:** Waste water that has spilled from wells or water points. Normally it has very low levels of pathogens. However, overflow water can quickly become contaminated with pathogens from human and animal feces when it is not well managed and causes standing water.

Domestic wastes water have a negative impact on the environment and public health if is not well managed. The table below summarizes the domestic waste water components and its environmental effect.

Table 7.8 1 Domestic waste water pollution

Component	Special interest	Environmental effect
Microorganisms	Pathogenic bacteria, virus and worms eggs	Risk when bathing and eating shellfish
Biodegradable organic materials	Oxygen depletion in rivers and lakes	Fish death, odours
Other organic materials	Detergents, pesticides, oil and grease, coluuring, solvents, phenols, cyanide	Toxic effect, aesthetic inconveniences, bioaccumulation in the food chain
Nutrients	Nitrogen, phosphorus, ammonium	Eutrophication,, oxygen depletion, toxic effect
Metals	Hg, Pb,Cd, Cr,Cu, Ni	Toxic effect, bioaccumulation

Other inorganic materials	Acids for example hydrogen sulphide, bases	Corrosion, toxic effect
Thermal effects	Hot water	Changing living conditions for flora and fauna
Odour(and teste)	Hydrogen sulphide	Aesthetic inconveniences, toxic effect
Radioctivity		Toxic effect, accumulation

7.8.2. Importance of domestic waste water management

Domestic waste water management aims to remove the wastewater pollutants in other to protect the environment and protect public health.

- **Environment:** Prevent pollution of surface or ground water sources such as ocean, lakes, rivers and streams. It prevents euthrophication and pollution of sensitive aquatic systems (surface water, groundwater, drinking water reservoirs) as well as terrestrial systems (irrigated soil). It preserves aquatic life from toxics and biological decomposition of pollutants that may kills fishes and other aquatic livings.
- **Public health:** management of domestic waste water aim to protect public health by eliminating waterborne diseases. It creates an effective physical barrier between contaminated wastewater and user, as well as avoid odor emissions and stagnant water leading to breeding sites for mosquitoes.
- **Infrastructure:** It prevents erosion of shelter and facilities such roads, bridges etc.
- **Agriculture:** well, treated domestic water may be used in agriculture to irrigate crops.
- **Economic:** Treatment of domestic water aim to prevent the use of excessive water as treated water may be recycled and reused thus by reducing the cost of water.

7.8.3. Management of Domestic waste water

Management of domestic waste water may be done in two ways: on site management and off-site management

Off-site safely managed sanitation: A sanitation system, in which domestic waste water is collected, transported away from the plot where it was generated and treated. Following this, remaining products are either disposed or re-used. Currently, there are few safe treatment options for off-site faecal sludge management in Rwanda.

On-site safely managed sanitation: A sanitation system or technology in which faecal sludge is contained, collected, stored, emptied and treated on the institutional or household plot where it was generated.

a. Management of black water

Methods and processes to manage fecal sludge (The settled contents of pit latrines and septic tanks) and sewage (Untreated wastewater which contains feces and urine) were discussed previously in five components of a sanitation system; through collection, transport and treatment of faecal sludge from pit latrines, septic tanks or other on-site sanitation systems.

b. Management of grey water

The amount of grey water produced depends on how much water a person uses in a day. A household with no water shortages and a piped supply typically produces about 90–120 liters/person/day. But this can be much less, especially in water scarce areas where people must fetch their water and use only 20–30 litres/person/day.

The most main step in management of grey water is to control the source by reducing the amount of grey water contamination in the first place.

i. Collection and containment

Grey water may be managed by on site system by collecting and containing water using soak pits, grease trap and septic tanks.

ii. Treatment of grey water

The grey water may be treated using different methods:

Physical treatment: In this stage, physical methods are used for cleaning the wastewater. Processes like screening, sedimentation and skimming are used to remove the solids. No chemicals are involved in this process.

One of the main techniques of physical wastewater treatment includes sedimentation, which is a process of suspending the insoluble/heavy particles from the wastewater. Once the insoluble material settles down at the bottom, you can separate the pure water.

Another effective physical water treatment technique includes aeration. This process consists of circulating air through the water to provide oxygen to it. Filtration, the third method, is used for filtering out all the contaminants. You can use special kind of filters to pass the wastewater and separate the contaminants and insoluble particles present in it. The sand filter is the most commonly used filter. The grease found on the surface of some wastewater can also be removed easily through this method.

Biological water treatment:

This uses various biological processes to break down the organic matter present in wastewater, such as soap, human waste, oils and food. Microorganisms metabolize

organic matter in the wastewater in biological treatment. It can be divided into three categories:

- Aerobic processes: Bacteria decomposes the organic matter and converts it into carbon dioxide that can be used by plants. Oxygen is used in this process.
- Anaerobic processes: Here, fermentation is used for fermenting the waste at a specific temperature. Oxygen is not used in anaerobic process.
- Composting: A type of aerobic process where wastewater is treated by mixing it with sawdust or other carbon sources.

Chemical waste water treatment

Secondary treatment removes most of the solids present in wastewater, however, some dissolved nutrients such as nitrogen and phosphorous may remain

As the name suggests, this treatment involves the use of chemicals in water. Chlorine, an oxidizing chemical, is commonly used to kill bacteria which decompose water by adding contaminants to it. Another oxidizing agent used for purifying the wastewater is ozone. Neutralization is a technique where an acid or base is added to bring the water to its natural pH of 7. Chemicals prevent the bacteria from reproducing in water, thus making the water pure.

c. Reuse and disposal of grey water

Reuse grey water to irrigate household gardens and agricultural crops

Reuse grey water as toilet flush water.

Dispose of grey water into the ground using a soak pit or infiltration trench

Discharge grey water into a surface water body (e.g., pond, stream, river, lake)

7.8.4. Overflow water management

Over flow water should be channeled away so that it does not cause standing water.

Overflow water that does not drain away from water points could backflow into the water source and possibly contaminate the drinking water. Or the overflow water can cause the soil to erode away and damage the water point structure. Overflow water may be used as irrigation water for agriculture. It may be infiltrated into the ground using soak pits and infiltration trenches. Over flow water may be released directly to surface waters (e.g., lakes, rivers or ponds). Overflow water does not normally require treatment before it can be used, infiltrated or disposed.

Self-assessment 7.8

1) What is blackwater and where does it come from?
2) What is greywater and where does it come from?
3) What is overflow water and where does it come from?
4) What are options to manage greywater?
5) What are options to manage overflow water?

7.9. Environmental sanitations inspections

Learning activity 7.9

In the previous lessons, you leant about sanitation and environmental sanitation, human and animal excreta management, solid waste water management and domestic waste water management. Based on these covered lessons:

1) What do you think as environmental inspection?
2) What can you think as benefits and purpose of an environmental sanitation inspection?

7.9.1. Environmental sanitations inspections overview

An environmental sanitation inspection is onsite inspection of environmental sanitation practices and technologies, to identify potential source and transmission of diseases related to unsafe water, poor sanitation and poor hygiene. Community representatives, government officers such as environmental health inspectors, or field officers from national and international organizations, may use sanitary inspections.

Environmental sanitation inspection focuses on Domestic wastewater, excreta management, and public facilities. Solid waste and vector control.

7.9.2. The benefits and purpose of an environmental sanitation inspection.

Environmental sanitations inspection helps to:

- Provide a simple and fast means of assessing and identifying hazards associated with unsanitary practices
- Observation and inspection of community and household practice
- Identify potential and actual risks

- Useful in assessing small community upgrading options
- Identify WASH practices: excreta management, hygiene, domestic wastewater
- Management, animal excreta management, vector control and solid waste management.
- Identify potential sources of microbiological (fecal) contamination

7.9.3. Environmental sanitations inspections data collection methods

During Data, collection different method of data collection may be used such as **Observation** and **Interview.**

Observation can be used for observing the presence or absence of things and their condition. It may also indicate some behavioral practices. For example, you can directly observe solid waste in drainage ditches, or the lack of a latrine facility, or animal excreta management practices.

Interview may be necessary to collect information about practices and behavior, as they are hard to observe directly. For example, defecation practices, hygiene practices, and the presence or absence of vectors.

7.9.4. Environmental sanitation inspection forms

Environmental sanitation inspection uses standardized environmental sanitation inspection forms to ensure consistent assessments. Inspectors use appropriate forms for the situation being assessed. Questions on the form are designed in a simple way by open-ended question by Yes or No to reduce subjectivity.

a. Environmental sanitation Inspection Form: Animal Excreta management

PART 1	**General Information**				
	Location				
	Province:	**District:**	Sector:	**Cell:**	**Village:**
	Date of visit				
PART 2	Walk through the community to observe practices and ask community members questions. Be respectful of the community and local traditions. When necessary, seek permission from community leaders to do the inspection. Circle 'Yes' if there is a potential risk and 'No' if there is no or very low risk. Add notes to the results and comments section on the next page. See explanation on the next page for details about each question.				

	Question	Observation		Rationale
1	Are animals walking through the community freely?	**Yes**	**No**	Animals that freely roam the community can contaminate water sources, food, people and other animals
2	Do livestock live in the household with family members?	**Yes**	**No**	There is a high risk of contamination when livestock sleep and live within the household
3	Do cats live in the household with pregnant women?	**Yes**	**No**	Cat feces can transmit a disease called toxoplasmosis. A pregnant women infected with toxoplasmosis can pass the parasite on to their unborn child. The disease has health impacts on the child, such as vision loss, mental disability and seizures. Women who are or may become pregnant should avoid coming into contact with cat feces, wash hands with soap after contacting soil or clean food from a garden.
4	Is animal excreta poorly managed around the households (e.g., animal feces are not collected or properly disposed)?	**Yes**	**No**	Animal excreta around households should be collected on a daily basis and moved to a location that is away from water, food and people, especially children
5	Do people use untreated animal excreta on crops or gardens as fertilizer?	**Yes**	**No**	There is a high risk of contamination if the community uses animal excreta directly on crops or gardens. Depending on the type and extent of treatment, if treatment is used at all, pathogens may still be a risk to both human and animal health.

6	Do animals have access to crops or gardens in the community?	**Yes**	**No**	If there is no fence (or the fence is damaged) then animals can access the crops or gardens and may pollute the area with excreta. You will need to check the protection of the site as well as check whether animals are routinely in the area of crops or gardens.
7	Do animals have access within 10 m of water sources in the community?	**Yes**	**No**	If there is no fence (or the fence is damaged) then animals can access the water source and may damage the structure as well as pollute the area with excreta. You will need to check the protection of the site as well as check whether animals are routinely in the area (sometimes animals are kept in the fenced area for security purposes)
8	Is animal excreta poorly handled when used as fuel or within the home (e.g., no handwashing with soap after making or burning dung cakes/ pats)?	**Yes**	**No**	There is a high risk of contamination if people are not practicing good hygiene when handling animal excreta. It is very important that people wash their hands with soap and water after making animal dung cakes or pats and before touching food (e.g., preparing food, eating). People can also reduce transmission of pathogens by wearing protective clothing, such as gloves, when handling animal dung in the home.

9	Is animal excreta compost poorly managed (e.g., people or animals can easily contact the excreta while being composted)?	**Yes**	**No**	Composting is a traditional practice in many rural communities. The risk of contamination from the compost pile is high if the compost is easy to access by household members and animals. If this is not practiced,
10	Do people practice poor personal hygiene after handling livestock and animal excreta?	**Yes**	**No**	It is very important that people wash their hands with soap and water after handling livestock and animal excreta. People can also reduce transmission of pathogens by wearing protective clothing, such as gloves, when handling livestock and animal excreta.
Part 3. Results and Comments				
a.	**Risk of contamination (check the appropriate box):**			
	9-10 = Very high	**6-8 = High**	**3-5 = Medium**	**0-2 = Low**
b.	**The Following risk were observed**			
Part 4 **Name and Signature of inspectors**				

b. Environmental Sanitation Inspection Form: Domestic waste water Management

PART 1	General Information				
	a. Location				
	Province:	**District:**	**Sector:**	**Cell:**	**Village:**
	Date of visit				
PART 2	Walk through the community to observe practices and ask community members questions. Be respectful of the community and local traditions. When necessary, seek permission from community leaders to do the inspection. Circle 'Yes' if there is a potential risk and 'No' if there is no or very low risk. Add notes to the results and comments section on the next page. See explanation on the next page for details about each question.				
	Question	**Observation**		**Rationale**	
1	Is untreated Blackwater disposed in areas where it can contact people or animals?	**Yes**	**No**	*Blackwater is wastewater that has been used to flush a toilet or latrine and contains excreta (e.g., sewage). Blackwater should be disposed in areas where it will not contact people or Animals. This water has many pathogens in it, and is a high risk of contamination if disposed of close to humans or animals.*	
2	Is untreated Blackwater used to irrigate crops?	**Yes**	**No**	*Blackwater is wastewater that has been used to flush a toilet or latrine and contains excreta (e.g., sewage). This water has many pathogens in it, and is a high risk of contamination if used to irrigate crops for people or animals to eat. It is recommended that blackwater only be used to irrigate crops that will not be eaten raw*	

3	Is there a lack of drainage channels in the community for rainwater?	**Yes**	**No**	*Drainage channels carry rainwater away from households, to prevent standing water. Drainage channels can be used to carry wastewater to be treated, infiltrated into the ground or to irrigate crops.* *Observe if the community has enough drainage channels to prevent standing water.*
4	Are drainage channels blocked by solid waste, vegetation or silt?	**Yes**	**No**	*Drainage channels need to be clear of solid waste, vegetation, and silt to work well. Observe whether the drainage channels are unblocked and clear of debris.*
5	Are there wells or boreholes where the drainage is absent or faulty allowing water to pool within 2 m of the drinking water source?	**Yes**	**No**	*If pools of water collect around the well or borehole they may provide a way for contaminants to enter the source*
6	Are there drainage channels that are absent, cracked, broken or in need of cleaning?	**Yes**	**No**	*Poor construction or maintenance of the drainage channel, leading to cracks or breaks, is a high risk to water quality, especially when combined with water spillage and poor sanitary conditions*
7	Is there standing water in other locations in the community?	**Yes**	**No**	*Standing water can spread pathogens and breed vectors. Poor drainage and drainage management can cause more frequent and severe flooding, spreading contamination. There is a high risk of spreading pathogens and disease.*
Risk of contamination **Add the number of YES answers**				
Part 3. Results and Comments				
a.	**Risk of contamination (check the appropriate box):**			

	7 = Very high	**5-6 = High**	**3-4= Medium**	**0-2 = Low**
b.	**The Following risk were observed**			
Part 4 **Name and Signature of inspectors**				

C.Environmental Sanitation Inspection Form: Human Excreta Management

PART 1	**General Information**				
	Location				
	Province:	**District:**	**Sector:**	**Cell:**	**Village:**
	Date of visit				
PART 2	Walk through the community to observe practices and ask community members questions. Be respectful of the community and local traditions. When necessary, seek permission from community leaders to do the inspection. Circle 'Yes' if there is a potential risk and 'No' if there is no or very low risk. Add notes to the results and comments section on the next page. See explanation on the next page for details about each question.				
	Question	**Observation**		**Rationale**	
1	Do people practice open defecation (e.g., adults or children)?	**Yes**	**No**	*Open defecation scatters human excreta in and near to the living environment where children, adults, animals, rodents and insects may come in contact with it. The risk of contamination and disease transmission is very high, especially in crowded living conditions. The risk is lower in a hot and dry climate or in a region where population density is very low.*	

2	Do people with access to a latrine practice open defecation?	**Yes**	**No**	*Open defecation scatters human excreta in and near to the living environment where children, adults, animals, rodents and insects may come in contact with it. The risk of contamination and disease transmission is very high, especially in crowded living conditions. The risk is lower in a hot and dry climate or in a region where population density is very low.*
3	Are there households that use unimproved latrines (e.g., pit latrine without a slab, open pit, hanging latrines, or bucket latrine)?	**Yes**	**No**	*Unimproved latrines do not prevent contact between excreta, people and/or the environment. Therefore, they do not protect human and environmental health. These latrines present a high risk of contamination*
4	Are there latrines that overflow with excreta?	**Yes**	**No**	*Latrines that overflow with excreta do not prevent contact between excreta, people and/or the environment. Therefore, they do not protect human and environmental health. These latrines present a high risk of* *contamination*
5	Are latrines poorly maintained or dirty?	**Yes**	**No**	*Dirty latrines may have excreta on the slab or seat, garbage disposed of in the latrine, or have a hole cover that is dirty. Poorly maintained latrines may lack of a superstructure, superstructure is in poor condition, slab is in poor condition, or lack a hole cover. These latrines may not prevent contact between excreta, people and/or the environment. Therefore, they may not protect human and environmental health*

6	Is there a latrine located less than 30 metres from a drinking water source?	**Yes**	**No**	*Latrines located less than 30 metres from a drinking water source may contaminate the source. There is a risk of contamination, depending on the soil and groundwater conditions*
7	Is there a latrine or other source of fecal contamination uphill of a drinking water source?	**Yes**	**No**	*Contamination on higher ground poses a risk, especially in the wet season, as excreta (and other contaminants) may flow into the water source. The risk is increased if no surface water* *diversion is present*
8.	Do latrines sometimes fill with water during the year (e.g., during the rainy season)?	**Yes**	**No**	*Contamination of the groundwater occurs when latrines fill with water at any time of the year. There is a risk of contaminating drinking water sources such as wells, boreholes, or springs that are located near the latrine*
9.	Are latrines contaminating other water sources (e.g., rivers, lakes)?	**Yes**	**No**	*People, animals and other communities may use other water sources such as rivers, lakes, lagoons, and streams. Contaminating any water source presents a risk of contamination and disease for people and animals.*
10.	Is there an accessible handwashing facility near the latrine	**Yes**	**No**	*After using a toilet people should wash their hands in other to to block the feacal oral disease transmission channel*
11.	Does the latrine has a water proof roof , has a door with a lock, a slab or pedestal with cover	**Yes**	**No**	*A roof protect user from rain and the latrines to be full of rainy water, a door help user to be secured and prevent animal to enter the toilets, the cover of the help to prevent odor and flies*
Risk of contamination **Add the number of YES answers**				

Part 3. Results and Comments				
a.	Risk of contamination (check the appropriate box):			
	9-11= Very high	6-8= High	3-5= Medium	0-2 = Low
b.	The Following risk were observed			
Part 4 Name and Signature of inspectors				

d. Environmental sanitation inspection forms: Public facilities

PART 1	General Information				
	a. Location				
	Province:	District:	Sector:	Cell:	Village:
	Date of visit				
PART 2	Walk through the community to observe practices and ask community members questions. Be respectful of the community and local traditions. When necessary, seek permission from community leaders to do the inspection. Circle 'Yes' if there is a potential risk and 'No' if there is no or very low risk. Add notes to the results and comments section on the next page. See explanation on the next page for details about each question.				
	Question	Observation		Rationale	
1	Do schools have enough latrines for every student (1 latrine for every 25 girls and female staff and 1 latrine for every 50 boys and male staff)?	Yes	No	*If schools do not have enough latrines, then students may practice open defecation, which is a health risk. Schools may have both latrines and urinals for students.* *This depends on the local context and number of students*	

2	Is there enough water (minimum of 5 litres per person per day) for hygiene at schools (e.g., handwashing, anal cleansing)? Exf099711 0788614210	**Yes**	**No**	*The World Health Organization(WHO) recommends 5 litres per person per day for all school children and staff. This is for drinking and handwashing. Latrines require: 10-20 litres per person per day for conventional flushing toilets, 1.5-3.0 litres per person per day for pour-flush toilets, and 1-2 litres perperson per day for anal washing Contamination spreads quickly without enough water for hygiene.*
3	Is there a lack of menstruation management options in schools with girls aged 11 or older?	**Yes**	**No**	*Girls in schools need somewhere safe and private to change their sanitary products; clean* *water and soap for washing their hands, bodies, and reusable cloths; and facilities for safely disposing of used sanitary products or a clean place to dry them if reusable. School latrines* *should meet these criteria.*
4	Do public or community latrines close for a period of time each year?	**Yes**	**No**	*Public or community latrines may close during the year because of management issues or because they are broken and unusable. If public or community latrines are not reliable places for defecation, people may practice open defecation.*
5	Is there a lack of menstruation management options at public or community latrines?	**Yes**	**No**	*Women and girls need somewhere safe and private to change their sanitary products; clean water and soap for washing their hands, bodies, and reusable cloths; and facilities for safely disposing of used sanitary products. Public or community latrines should meet these criteria.*

6	Are public or community latrines poorly maintained or dirty?	**Yes**	**No**	*Dirty latrines may have excreta on the slab or seat, garbage disposed of in the latrine, or have a hole cover that is dirty.* *Poorly maintained latrines may lack of a superstructure, superstructure is in poor condition, slab is in poor condition, or lack a hole cover. These latrines may not prevent contact between excreta, people and/or the environment. Therefore, they may not protect human and environmental health*
7	Are there public or community latrines without handwashing facilities?	**Yes**	**No**	*A handwashing facility has water and soap or ash in one place for proper handwashing. Different types of handwashing hardware include: a sink with piped water, tippy taps, buckets with taps, and a pitcher and a basin.*
8.	Are handwashing facilities at public or community latrines poorly maintained or dirty?	**Yes**	**No**	*A public handwashing facility may spread contamination, if it's poorly maintained or dirty.* *Poorly maintained facilities may not have enough water or lack soap or ash. Dirty handwashing facilities have visible dirt or excreta contaminating the facility.*
9.	Are public or community latrines inaccessible to people with disabilities or other physical limitations (e.g., children, elderly, pregnant women)?	**Yes**	**No**	*Consider how level and firm the path is to the latrine, whether there are steps, how level the latrine slab is, and the general accessibility by all people. If public or community latrines are not accessible places for all people, then people may practice open defecation*

10.	Are public or community latrines have visible panel to indicate their location women and male latrines	**Yes**	**No**	*The public latrines should have panel for easy access and separated for men and women*
11	Do people need to wait more than 10 minutes to use a public latrine facility?	**Yes**	**No**	*Public facilities with long lines discourage people from using the latrine. Some people may practice open defecation instead of waiting to use a public latrine facility*
Risk of contamination **Add the number of YES answers**				
Part 3. Results and Comments				
a.	Risk of contamination (check the appropriate box):			
	9-11= Very high	**6-8= High**	**3-5= Medium**	**0-2 = Low**
b.	**The Following risk were observed**			
Part 4 **Name and Signature of inspectors**				

e. Environmental Sanitation Inspection Form: Solid waste management

PART 1	**General Information**				
	Location				
	Province:	**District:**	**Sector:**	**Cell:**	**Village:**
	Date of visit				
PART 2	Walk through the community to observe practices and ask community members questions. Be respectful of the community and local traditions. When necessary, seek permission from community leaders to do the inspection. Circle 'Yes' if there is a potential risk and 'No' if there is no or very low risk. Add notes to the results and comments section on the next page. See explanation on the next page for details about each question.				

	Question	Observation		Rationale
1	Are there uncollected piles of solid waste in the community?	**Yes**	**No**	*Irregular or no formal waste collection services exposes people to waste and increases the risk of disease transmission. Uncollected solid waste can be a breeding site for disease vectors, including flies, mosquitos and rodents.*
2	Are waste disposal sites located within 500 metres from drinking water sources?	**Yes**	**No**	*This distance can help to protect ground and surface water from becoming contaminated.*
3	Are waste disposal sites located in an area with a high water table and/ or susceptible to flooding?	**Yes**	**No**	*Disposal sites should be located in areas with a lower water table and that are not susceptible to flooding. This can help to protect soil, groundwater and surface water from becoming contaminated.*
4	Are waste disposal sites covered regularly (e.g., daily or weekly) with soil or ash?	**Yes**	**No**	*Waste disposal sites should be covered with 0.1 metres of soil or ash regularly (e.g., daily or weekly) to reduce odours and disease vectors, as well as prevent waste from blowing away*
5	Is there a fence around waste disposal sites?	**Yes**	**No**	*Waste disposal sites should have a fence to keep animals and children out of the area. As well, fences can prevent lighter materials (e.g., plastic bags) from blowing away. Children are especially vulnerable to risks from solid waste. They often play outside and might pick up waste materials that adults know to avoid*

6	Do people unsafely scavenge for waste materials?	**Yes**	**No**	*Waste picking without the use of personal safety equipment (such as gloves, masks and shoes) increases people's risk of diarrhea, infections and respiratory illnesses. Punctures caused by pieces of glass or needles are very common and can lead to infections, tetanus, hepatitis or HIV*
7	Do animals roam in waste disposal sites?	**Yes**	**No**	*Animals often look for food among waste disposal sites. They can become vectors of different diseases and increase the spread of waste in the environment.*
8.	Is there uncontrolled burning of solid waste?	**Yes**	**No**	*Uncontrolled burning can result in large fires at disposal sites. As well, the smoke contributes to air pollution and can cause respiratory problems. It may be necessary to burn household waste if landfill space is very limited. In this case, it is best to burn the waste as far as possible from people,keep it contained in a pit or barrel to prevent the fire from uncontrolled spreading, and burn it as hot as possible.*
				The ashes may be contaminated and should be disposed of in a pit or landfill.
9.	Does solid waste block drainage channels?	**Yes**	**No**	*Blocked drains can cause increased flooding, especially in high-density urban areas. Blocked drains can create standing water, which is an ideal breeding site for mosquitos*

10.	Is solid waste disposed in other water sources (e.g., lagoons, rivers)?	**Yes**	**No**	*Waste can block water sources and cause increased flooding. Liquid produced from waste can contaminate the water source.*
11	Is hazardous waste (e.g., medical waste, chemicals, batteries) collected and disposed separately from household waste?	**Yes**	**No**	*collected and disposed separately from household waste? Hazardous waste includes toxic waste, medical waste, pharmaceuticals, chemicals, and batteries. Do not dispose hazardous waste in latrines, drainage channels, water sources or on the ground. Hazardous waste that is disposed with household waste is dangerous, especially for waste pickers.*
Risk of contamination **Add the number of YES answers**				
Part 3. Results and Comments				
a.	**Risk of contamination (check the appropriate box):**			
	9-11= Very high	**6-8= High**	**3-5= Medium**	**0-2 = Low**
b.	**The Following risk were observed**			
Part 4 **Name and Signature of inspectors**				

Self-assessment 7.9

1) Why do we use environmental sanitation inspection forms?
2) During inspection, you find that the goats and cows lives in the same house with the family member. What will be you recommendation to the family and why?
3) Is it dangerous for pregnant women to live with cats in the household? Yes or No , explain you answer.
4) What data gathering methods could you use to learn about excreta management practices in a community?
5) What is environmental inspection?

End unit assessment 7

1) A dynamic complex of plant, animal, and microorganism communities and the nonliving environment interacting as a functional unit is:

a. Environment
b. Ecosystem
c. Environmental health
d. Environmental sanitation

2) The contamination of the physical and biological components of the earth/atmosphere system to such an extent that normal environmental processes are adversely affected is:

a. Environmental pollution
b. Environmental health Prevention
c. Primary prevention
d. Tertiary prevention

3) The biggest cause of poor sanitation globally is:

a. Lack of education
b. Lack of hand washing
c. Lack of pure water supply
d. Lack of food industry

4) The below items are benefits of improved sanitation except;

a. Reducing the spread of intestinal worms

b. Reducing the severity and impact of malnutrition
c. Promoting dignity and boosting safety
d. Curing the intestinal worms

5) Sanitation system is:

a. Essential for health; for boosting virus vaccination, improving and maintaining mental and social well-being
b. A combination of different functional units and technologies for safe collection, transport, treatment or disposal of human waste.
c. Water seal made out of plastic or ceramic to prevent clogs and to make cleaning easer
d. Well designed to meet the needs of the children and pregnant women.

6) The name of Water generated from domestic activities; such as laundry, dish washing, bathing, cleaning and in the kitchen except water from toilets is:

a. Overflow water
b. Black water
c. Grey water
d. No correct answer

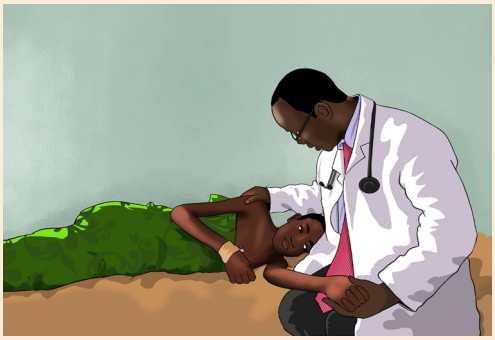
7) Explain the importance of disposing safely the human excreta
8) Give difference between dry toilet and wet toilet
9) Explain the way of treating the Manure
10) Explain the ways of using compost
11) Outline 5 safety precautions of burning or burying solid waste
12) Give 3 benefits of recycling solid waste
13) Explain 5 Precautions of transporting hazardous waste
14) Discuss the importance of domestic wastewater management to public health
15) Enumerate 2 methods used in data collection during environmental sanitations inspections.

UNIT 8 INTRODUCTION TO PALLIATIVE CARE

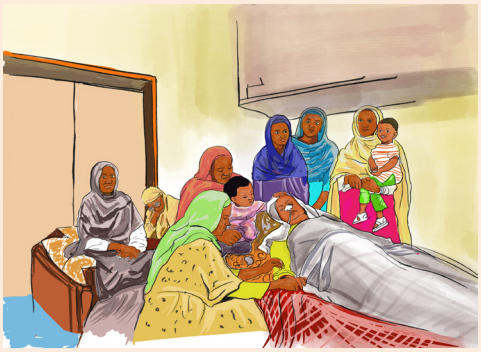
Key unit competence:

Apply the principles of palliative care to alleviate pain, support psychologically and spiritually the individuals, families and community during life threatening illnesses and during end-of-life period

Introductory activity 8



A



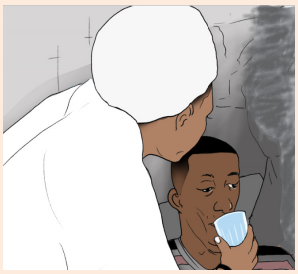
B



C



D



E

1) What do the pictures A, B, C, D, and E have in common?
2) What do you think is the focus of this unit 8?

Definition:

The World Health Organization (WHO) defined Palliative care "as an approach to care which improves quality of life of patients and their families facing life-threatening illness, through the prevention, assessment and treatment of pain and other physical, psychological and spiritual problems."

The primary goal of palliative care:

It is to help patients and families achieve the best possible quality of life.

The goals of palliative care:

For patients with active, progressive, far-advanced disease, the goals of palliative care are

- To provide relief from pain and other physical symptoms
- To maximize the quality of life
- To provide psychosocial and spiritual care
- To provide support to help the family during the patient's illness and bereavement

Scope of palliative care:

Although it is especially important in advanced or chronic illness, it is appropriate for patients of any age, with any diagnosis, at any time, or in any setting.

Patients who have complex serious illnesses often benefit from palliative care throughout the course of their illness, even while seeking treatment for their disease. As the goals of care change and cure for illnesses becomes less likely, the focus shifts to more palliative care strategies. Palliative care interventions are not only appropriate at the end of life. Making this distinction is important because some patients, family members, or health care professionals refuse helpful palliative care interventions, believing that palliative care is only for the dying.

8.1. Historical background of palliative care

Self-assessment 8.1

1) Shortly explain at least 4 timeline of important events in the history of palliative care

At the end of the Second World War in 1945, people in Western societies were tired of death, pain, and suffering. Cultural goals shifted away from war-centered activities to a focus on progress, use of technology for better living, and improvements in the health and well-being of the public. Guided by new scientific knowledge and

new technologies, health care services became diversified and specialized and lifesaving at all costs became a powerful driving force.

End-of-life care was limited to postmortem rituals, and the actual caregiving of dying patients was left to nursing staff. Palliative nursing in those days depended on the good will and personal skills of individual nurses, yet what they offered was invisible, unrecognized, and unrewarded.

Thanks to the efforts of many people across the years, end-of-life care is acknowledged today as an important component of integrated health care services. Much knowledge has accrued about what makes for good palliative care, and nurses have been in the forefront of efforts to improve quality of life for patients and families throughout the experience of illness.

The nurse gives attention to the physical, psychological, social, spiritual, and existential aspects of the patient and family—whole person care.

Below is a brief timeline of important events in the history of palliative care:

- **1967: Palliative care was born out of the hospice movement.** Dame Cicely Saunders is widely regarded as the founder of the hospice movement. She had degrees in nursing, social work, and medicine. She introduced the idea of "total pain," which included the physical, emotional, social, and spiritual dimensions of distress. Saunders opened St. Christopher's Hospice in London in 1967.
- **1969: Elisabeth Kübler-Ross published her book On Death and Dying.** In this book, she defined the five stages of grief through which many terminally ill patients progress: denial, anger, bargaining, depression, and acceptance. Although we now believe dying patients do not necessarily go through these phases and that these phases do not necessarily occur in a set order, Kübler-Ross's book and lectures raised public consciousness about care for patients at the end of life.
- **1974:** Florence Wald, the dean of Yale School of Nursing, was so inspired by a lecture by Dr. Saunders at Yale that she went to visit St. Christopher's in 1969. Florence Wald then founded the first hospice in the United States, in Branford, Connecticut, in 1974. At the start of the hospice movement in the United States, most hospices were home based and volunteer led.
- **1974: Dr. Balfour Mount,** a surgical oncologist from McGill University, coined the term "palliative care" to distinguish it from hospice care. While hospice falls under the umbrella of palliative care, palliative care can be provided from the time of diagnosis of a serious illness and concurrently with curative or life-prolonging treatment.
- **1990: The World Health Organization recognized palliative care as a distinct** specialty dedicated to relieving suffering and improving quality of life for patients with life-limiting illness.

- **1997: The Institute of Medicine report "Approaching Death:** Improving Care at the End of Life" noted discrepancies between what the American public wanted for end-of-life care and how Americans were experiencing end of life in the United States. With tremendous support from multiple philanthropic foundations, multifaceted efforts were made to promote palliative care.
- **2006: The American Board of Medical Specialties** (ABMS) and the Accreditation Council for Graduate Medical Education (ACGME) recognized hospice and palliative care as its own specialty.
- **2010: The New England Journal of Medicine published a study by Dr. Jennifer Temel** and colleagues that showed that people with lung cancer who received early palliative care in addition to standard oncologic care experienced less depression and increased quality of life and survived 2.7 months longer than those receiving standard oncologic care.

Self-assessment 8.1

1) What did world Health Organization do in 1990 as regards to palliative care?
2) What are the five stages of grief according to Elisabeth Kübler-Ross 1969 book on death and dying?
3) How did Dr. Balfour Mount distinguish hospice care from palliative care in1974?

8.2. Components of palliative care

Learning activity 8.2

Use the following link and watch the video on palliative care: https://www.youtube.com/watch?v=TZCI25C8tEQ

With use of student text book of fundamentals of nursing or any relevant book, discusses the components of palliative care

Palliative care incorporates the whole spectrum of care—medical, nursing, psychological, social, cultural and spiritual. A holistic approach, incorporating these wider aspects of care is essential in palliative care.

The following table illustrates the components of palliative care, or the aspects of care and treatment that need to be addressed, follow logically from the causes of suffering. Each has to be addressed in the provision of comprehensive palliative care, making a multidisciplinary approach to care a necessity.

Suffering	Care
Pain	Treatment of pain
Other physical symptoms	Treatment other physical symptoms
Psychological problems	Care of psychological problems
Social difficulties	Care of social difficulties
Cultural issues	Care for cultural issues
Spiritual concerns	Care for spiritual concerns
Total suffering	**Multidisciplinary Palliative Care**

Treatment of **pain and physical symptoms are addressed first** because it is not possible to deal with the psychosocial aspects of care if the patient has unrelieved pain or other distressing physical symptoms.

The **various causes of suffering are interdependent** and unrecognized or unresolved problems relating to one cause may cause or exacerbate other aspects of suffering.

Unrelieved pain can cause or aggravate psychosocial problems. These psychosocial components of suffering will not be treated successfully until the pain is relieved.

Pain may be aggravated by unrecognized or untreated psychosocial problems. No amount of well prescribed analgesia will relieve the patient's pain until the psychosocial problems are addressed.

Palliative care nursing reflects a "whole-person" philosophy of care implemented across the lifespan and across diverse health care settings.

Relieving suffering and enhancing quality of life include the following: providing effective pain and symptom management; addressing psychosocial and spiritual needs of the patient and family; incorporating cultural values and attitudes into the plan of care; supporting those who are experiencing loss, grief, and bereavement; promoting ethical and legal decision-making; advocating for personal wishes and preferences; using therapeutic communication skills; and facilitating collaborative practice.

In addition, in palliative nursing, the "individual" is recognized as a very important part of the healing relationship. The nurse's individual relationship with the patient and family is seen as crucial. This relationship, together with knowledge and skills, is the essence of palliative care nursing and sets it apart from other areas of nursing practice.

Palliative care as a therapeutic approach is appropriate for all nurses to practice. It is an integral part of many nurses' daily practice, as is clearly demonstrated in work with the elderly, the neurologically impaired, and infants in the neonatal intensive care unit.

The palliative care nurse frequently cares for patients experiencing major stressors, whether physical, psychological, social, spiritual, or existential. Many of these patients recognize themselves as dying and struggle with this role. To be dying and to care for someone who is dying are two sides of a complex social phenomenon. There are roles and obligations for each person. To be labeled as "dying" affects how

Self-assessment 8.2

1) Identify the aspects of care and treatment that need to be addressed in palliative care
2) Explain how the various causes of suffering are interdependent

8.3. Principles of palliative care

Learning activity 8.3

Use the following link and watch the video on palliative care: https://www.youtube.com/watch?v=TZCI25C8tEQ

With use of student text book of fundamentals of nursing or any relevant book, discusses the principles of palliative care

The following principles have been informed by research-based evidence:

- A caring attitude
- Consideration of individuality
- Care is patient, family and carer centered
- Care provided is based on assessed need
- Cultural considerations: linking the principles of ethics, humanities, and human values into every patient- and family-care experience
- Consent
- Choice of site of care
- Effective communication
- Clinical context: Appropriate treatment
- Comprehensive inter-professional care / Multidisciplinary care
- Care excellence
- Consistent medical care
- Coordinated care

- Care should be integrated
- Continuity of care
- Crisis prevention
- Caregiver support
- Continued reassessment
- Advance Care Planning
- Patients, families and carers have access to local and networked services to meet their needs
- Care is evidence-based, clinically and culturally safe and effective
- Care is equitable
- Scope of care
- Timing of palliative care
- Holistic care

Here below, each of the principles of palliative care is explained:

A caring attitude:

It involves sensitivity, empathy and compassion, and demonstrates concern for the individual. There is concern for all aspects of a patient's suffering, not just the medical problems. There is a non-judgmental approach in which personality, intellect, ethnic origin, religious belief or any other individual factors do not prejudice the delivery of optimal care.

Consideration of individuality:

There are psychosocial features and problems that make every patient a unique individual. These unique characteristics can greatly influence suffering and need to be taken into account when planning the palliative care for individual patients.

Care is patient, family and career centered:

Patient, family and carer centered care requires that they be actively involved in all aspects of care, including care planning and setting holistic goals of care. Patients, families and careers are 'partners' in the decision making regarding the provision of their healthcare. This results in care that aims to ensure 'patients receive comprehensive health care that meets their individual needs, and considers the impact of their health issues on their life and wellbeing. It also aims to ensure that risks of harm for patients during health care are prevented and managed through targeted strategies. Comprehensive care is the coordinated delivery of the total health care required or requested by a patient. This care is aligned with the patient's expressed goals of care and healthcare needs, considers the impact of the patient's health issues on their life and wellbeing, and is clinically appropriate.

Patient, family and carer centered care is an historical cornerstone of end of life and palliative care. When patients, families and carers are supported by the health system to actively participate, research has shown that it can lead to increased patients' satisfaction with health care services, improved patients' self-perceptions, reduced stress and increased empowerment.

Care provided is based on assessed need:

Making care available on the basis of assessed need ensures that every patient, family and carer gets access to care that is individualised based on their goals, wishes and circumstances.

A key learning from consultations is that "people's needs change." The needs of the patient, family and carer will vary with time and across care settings during their palliative and end of life journey.

Needs-based care requires services be available with skilled staff to meet the needs of patients, families and carers. Regular assessment of need allows patients, families and carers to describe their changing needs over time and helps services be responsive, coordinated and flexible in meeting these changing needs including reassessing care plans and goals of care. Needs-based assessment drives effective referral and clinical handover therefore, clinical staff must have the skills to undertake holistic needs assessments as people in their care approach and reach the end of life helping to ensure that people get the right care in the right place at the right time.

Cultural considerations: linking the principles of ethics, humanities, and human values into every patient- and family-care experience:

Ethnic, racial, religious and other cultural factors may have a profound effect on a patient's suffering. Cultural differences are to be respected and treatment planned in a culturally sensitive manner.

Good palliative care is significant in the manner, in which it embraces cultural, ethnic, and faith differences and preferences, while interweaving the principles of ethics, humanities, and human values into every patient- and family-care experience

Consent:

The consent of a patient, or those to whom the responsibility is delegated, is necessary before any treatment is given or withdrawn. In most instances, adequately informed patients will accept the recommendations made

Choice of site of care:

The patient and family need to be included in any discussion about the site (place/ setting) of care.

The patients with a terminal illness should be managed at home whenever possible.

Effective communication:

Good communication between all the health care professionals involved in a patient's care is essential and is fundamental to many aspects of palliative care. Good communication with patients and families is also essential. Healthcare providers should develop communication skills including listening, providing information, facilitating decision making and coordinating care.

Important and potentially difficult discussions are frequently necessary with palliative care patients, who have active, progressive, far-advanced disease, regarding:

- Breaking bad news
- Further treatment directed at the underlying disease
- Communicating prognoses
- Admission to a palliative care program
- Artificial nutrition
- Artificial hydration
- Medications such as antibiotics
- Do-not-resuscitate orders
- Decisions must be individualized for each patient and should be made in discussion with the patient and family.

Clinical context: Appropriate treatment:

All palliative treatment should be appropriate to the stage of the patient's disease and the prognosis. Over-enthusiastic therapy that is inappropriate and patient neglect are equally deplorable. Care must be taken to balance technical interventions with a humanistic orientation to dying patients. The prescription of appropriate treatment is particularly important in palliative care because of the unnecessary additional suffering that may be caused by inappropriately active therapy or by lack of treatment.

When palliative care includes active therapy for the underlying disease, limits should be observed, appropriate to the patient's condition and prognosis. Treatment known to be useless, given because you have to do something', is unethical.

Where only symptomatic and supportive palliative measures are employed, all efforts are directed at the relief of suffering and the quality of life, and not necessarily at the prolongation of life.

Comprehensive inter-professional care / Multidisciplinary care:

The provision of total or comprehensive care for all aspects of a patient's suffering requires an interdisciplinary team.

A multidisciplinary team approach is essential to address all relevant areas of patient care. In order to facilitate a family in crisis to establish and then achieve mutually agreed upon goals, the palliative care team integrates and coordinates the assessment and interventions of each team member and creates a comprehensive plan of care.

A multidisciplinary approach to assessment and treatment is mandatory. Failure to do this often results in unrelieved pain and unrelieved psychosocial suffering.

Successful palliative care requires attention to all aspects of a patient's suffering, which requires input or assistance from a range of **medical, nursing and allied health personnel**—a multidisciplinary approach. Established palliative care services work as a **multidisciplinary** or **inter-professional team.**

Multidisciplinary is the term that used to be applied to palliative care teams, but if the individuals work independently and there are no regular team meetings, patient care may become fragmented and conflicting information given to patients and families.

Inter-professional is the term now used for teams that meet on a regular basis to discuss patient care and develop a unified plan of management for each patient, and provide support for other members of the team.

Where palliative care services have not yet been established, it is important for the few professionals providing such care to work as a team, meeting regularly, planning and reviewing care, and supporting each other.

The patient may be considered a 'member' of the team (although they do not participate in team meetings), as all treatment must be with their consent and in accordance with their wishes.

The members of the patient's family can be considered 'members', as they have an important role in the patient's overall care and their opinions should be included when formulating a plan of management.

The ideal multidisciplinary team involves:

- Medical staff,
- Nursing staff,
- Social worker
- Physiotherapist
- Occupational therapist
- Dietician
- Psychologist (or liaison psychiatrist)
- Chaplain (or pastoral care worker)

- Volunteers
- Other personnel, as required
- Family members
- Patient

Volunteers play an important role in many palliative care services

Care excellence:

Palliative care should deliver the best possible medical, nursing and allied health care that is available and appropriate.

Palliative care is active care and requires specific management for specific conditions. It requires health care providers equipped with quality knowledge and skills.

Consistent medical care:

Consistent medical management requires that an overall plan of care be established, and regularly reviewed, for each patient. This will reduce the likelihood of sudden or unexpected alterations, which can be distressing for the patient and family.

Coordinated care:

It involves the effective organization of the work of the members of the inter-professional team, to provide maximal support and care to the patient and family. Care planning meetings, to which all members of the team can contribute, and at which the views of the patient and the family are presented, are used to develop a plan of care for each individual patient.

Care should be integrated:

Integration of care is an approach that aims to deliver seamless care within the health system and its interface with social care. It laces people at the centre of care, providing comprehensive wrap around support for individuals with complex needs and enabling individuals to access care when and where they need it.

Palliative care is integral to all healthcare settings (hospital, emergency department, health clinics and homecare).

A more integrated healthcare system is easy to use, navigate and access. It is responsive to the specific health needs of local communities, providing them with more choice and greater opportunities to actively engage with the health system. For service providers and clinicians, integrating care supports them to collaborate more effectively across health and with social care.

Healthcare providers and patients, families and carers at times describe health services as being siloed / isolated in their care and in the systems they use to

support that care. This results in care that is delayed and or fragmented and not supported with timely, transferable data that works across agencies and jurisdictions. Integrating care is vital to improving outcomes for vulnerable and at-risk populations and people with complex health and social needs.

Continuity of care:

The provision of continuous symptomatic and supportive care from the time the patient is first referred until death is basic to the aims of palliative care. Problems most frequently arise when patients are moved from one place of care to another and ensuring continuity of all aspects of care is most important.

Crisis prevention:

Good palliative care involves careful planning to prevent the physical and emotional crises that occur with progressive disease. Many of the clinical problems can be anticipated and some can be prevented by appropriate management. Patients and their families should be forewarned of likely problems, and contingency plans made to minimize physical and emotional distress

Caregiver support:

The relatives of patients with advanced disease are subject to considerable emotional and physical distress, especially if the patient is being managed at home. Particular attention must be paid to their needs as the success or failure of palliative care may depend on the caregivers' ability to cope

Continued reassessment:

This is a necessity for all patients with advanced disease for whom increasing and new clinical problems are to be expected. This applies as much to psychosocial issues as it does to pain and other physical symptoms.

Advance Care Planning:

Advance care planning is a means for patients to record their end-of-life values and preferences, including their wishes regarding future treatments (or avoidance of them)

Advance care planning involves a number of processes:

- Informing the patient
- Eliciting preferences
- Identifying a surrogate decision maker to act if the patient is no longer able to make decisions about their own care

It involves discussions with family members, or at least with the person who is to be the surrogate decision maker.

The **principle** of advance care planning is not new. It is common for patients aware of approaching death to discuss with their carers how they wish to be treated. However, these wishes have not always been respected, especially if the patient is urgently taken to hospital and if there is disagreement amongst family members about what is appropriate treatment. There is less conflict between patients and their families if advance care planning has been discussed.

Patients, families and carers have access to local and networked services to meet their needs

Providing care as close to home as possible means that people have access to high quality, services and supports required to meet their needs, wishes and circumstances. Home can include a residential aged care facility or a relative's home.

Decisions about how close to home it is possible to provide care will start with a detailed understanding of the patient, family and carer wishes combined with good clinical judgement and decision-making about safe and practical options. As always in a patient-centred model of care these options need to be negotiated and agreed with the patient, family and carer.

Care is evidence-based, clinically and culturally safe and effective

This means that: people receive health care without experiencing preventable harm. People receive appropriate evidence-based care. There are effective partnerships between consumers and healthcare providers and organizations at all levels of healthcare provision, planning and evaluation. Ensuring clinical, cultural and psychological safety means patients; families and carers experience no negative consequences.

All people in need should have equitable access to quality care based on assessed need as they approach and reach the end of life. Ensuring that care provided is in accordance with best practice recommendations, is organized for quality and is driven by the collection and reflection of appropriate and meaningful clinical data are all necessary components of quality systems. Quality and safety in palliative and end of life care is eroded when there are gaps in resourcing and support available to those providing such care.

Care is equitable:

We know that some population groups and clinical cohorts do not have equitable access to care or experience care that is sub-optimal and or culturally unsafe or inappropriate.

Equity in relation to health care means that patients, families and carers have equal access to available care for equal need; equal utilization for equal need and equal quality of care for all.

Evidence shows that care to people approaching and reaching the end of life is often fragmented and under-utilized by identified population groups or clinical cohorts. These included Aboriginal people, people under the age of 65, people who live alone, and people of culturally and linguistically diverse backgrounds, people with a non-cancer diagnosis, people living with dementia and people living with a disability.

There is a growing body of evidence indicating that given a choice, patients would prefer to die at home or as close to home as possible. However, a lack of services to support that care means that many people die in acute care settings or for people in rural and remote areas, death occurs far from their local community. A lack of after-hour support services particularly inhibits carers and family members' ability to provide home care.

The next text discusses the principles of palliative care management:

Scope of care:

It includes patients of all ages with life-threatening illness, conditions or injury requiring symptom relief from physical, psychosocial and spiritual suffering.

Timing of palliative care:

Palliative care should ideally begin at the time of diagnosis of a life threatening condition and should continue through treatment until death and into the family's bereavement.

Holistic care:

Palliative care must endeavor to alleviate suffering in the physical, psychological, social and spiritual domains of the patient in order to provide the best quality of life for the patient and family.

Self-assessment 8.3

Explain the following principles of palliative care:

1) Care is integrated and coordinated
2) Care is equitable
3) Holistic care
4) Multidisciplinary care
5) Effective communication

8.4. Non-pharmacological Pain management techniques

Learning activity 8.4

Observe the pictures below and answer the asked questions:



1) What are you seeing on the image above?
2) Describe the importance of this action on patient pain

8.4.1. Advantages and disadvantages of non-pharmacological interventions

Non-pharmacological pain managements are ways to decrease pain without medicine. Non-pharmacological pain management interventions are a set of psychological and physical pain management methods that play a vital role and can be used both complementarily and independently.

a. Advantages of non-pharmacological interventions

Non pharmacological interventions lower medical costs, greater availability to patients, diversification and ease of use and greater patient satisfaction. They also reduce the likelihood of dependence on drug interventions by facilitating pain relief as the first line of treatment.

b. Disadvantages

Disadvantage of non-pharmacological pain management include time consuming, may request advanced technology such as network in case of video, need the patient cooperation and understanding its benefits for both nurses and patients in order to be a successful method.

8.4.2. Non-pharmacological pain management approaches

Non-pharmacological approaches to the relief of pain may be classified as follows :(1) psychological interventions, (2) physical therapies.

a. Psychological interventions

Psychological interventions include distraction, stress management, hypnosis, and other cognitive-behavioral interventions. For patients dealing with chronic pain, psychological interventions plans are designed often involves teaching relaxation techniques, changing old beliefs about pain, building new coping skills and addressing anxiety or depression that may accompany pain. In this approach there are two methods

1) Music may help increase energy levels and improve your mood. It may help reduce pain by triggering your body to release endorphins. These are natural body chemicals that decrease pain. Music may be used with any of the other techniques, such as relaxation and distraction.
2) Psychosocial therapy/counseling: Psychosocial therapy/counseling may
3) Guided imagery/distraction teaches you to imagine a picture in your mind. You learn to focus on the picture instead of your pain. It may help you learn how to change the way your body senses and responds to pain.involve individual counseling, family counseling and group counseling.

b. Physical therapies

Physical therapy teaches you exercises to help improve movement and strength, and to decrease pain. In physical therapy we find there the following methods,

1) Heat application. Heat helps decrease pain and muscle spasms. Apply heat to the area for 20 to 30 minutes every 2 hours for as many days as directed. Remember to be cautious in order to avoid to burn the patient
2) Cold application. Cold object like ice helps decrease swelling and pain. Ice may also help prevent tissue damage. Use an ice pack, or put crushed ice in a plastic bag. Cover it with a towel and place it on the area for 15 to 20 minutes every hour, or as directed.

Self-assessment 8.4

1) What is non -pharmacological pain management?
2) Outline three examples non pharmacological pain management
3) What are advantages and disadvantages of non-pharmacological pain management?

8.5. Pain evaluation in palliative care

Learning activity 8.5

Watch this picture provide the answers to the questions presented below it:



The above patient is hospitalized in a district hospital and he was diagnosed with pancreatic cancer at advanced stage. He is experiencing irresistible pain, crying for help. You give painkiller and after 1 hour he told you that he still experiences pain and requests additional painkiller.

1) How are you going proceed in managing this patient?
2) What are possible complications that can arise if the pain is not treated?

The pain evaluation should encompass physical, psychological, social and spiritual components as they all interact upon one another. Untreated chronic pain can cause different complications including decreased mobility, decreased concentration, depression, anorexia, sleep disturbances and impaired immunity with all associated complications that can arise from impaired immune system. Adequate management of pain will alleviate the complications of pain.

Pain causes distress and suffering for people and their loved ones. Pain can also increase blood pressure and heart rate, and can negatively affect healing. Pain keeps people from doing things they enjoy. It can prevent them from talking and spending time with others. It can affect their mood and their ability to think. Managing the pain is very important as it helps ease suffering, improving patient comfort and therefore patient satisfaction. Pain control can facilitate early ambulation, adequate oxygenation and nutrition and reduce the stress. This helps the speed up the recovery time and may reduce the risk of developing depression.

The first principle of managing pain is an adequate and full assessment of where the underlying pain is coming from. Patients may have more than one area of pain and different pains have different causes. The acronym SOCRATES is used to assess pain:

- **S**ite: Where is the pain? The maximal site of the pain.
- **O**nset: When did the pain start, and was it sudden or gradual? Include also whether it is progressive or regressive.
- **C**haracter: What is the pain like? An ache? Stabbing?
- **R**adiation: Does the pain radiate anywhere?
- **A**ssociations: Any other signs or symptoms associated with the pain?
- **T**ime course: Does the pain follow any pattern?
- **E**xacerbating/relieving factors: Does anything change the pain?
- **S**everity: How bad is the pain?

Self-assessment 8.5

1) Using SOCRATES, describe how you can assess pain
2) What is importance of managing of patient pain?
3) What are complications associated with pain?

8.6. Psychosocial support

Learning activity 8.6

Mr. F aged 35 is a married with 3 children. The first born is 6 years old; the second is 4 years old while the last is one year old. He is the chief of his family and he was working to satisfy his family's basic needs, his wife is a nurse at one District hospital. Mr. F has been informed that he has stage IV Metastatic Melanoma since 6 months ago. He has been receiving chemotherapy over the duration of his illness. Chemotherapy can cause side effects such as nausea, vomiting depression, tiredness and thinning or loss of hair. His family cared for him at home until two weeks ago. He has now moved to a hospice for respite care. Mr. is a pastor in one protestant church and therefore he receives many visitors.

1) What do you think could be the psychological impacts of Mr. F's disease?
2) If you are nurse caring M.r F what do you think as nursing actions that could help Mr.F alleviate his discomfort other than medication.

End of life is a difficult time for patients and their relatives and careers. It is important that psychosocial care is provided to palliative patients and their families in various ways through a range of medical, nursing and allied healthcare professionals. It is imperative for nurses in palliative care to know about any specific cultural practices, spiritual and psychosocial conditions of the patients.

The term psychosocial denotes both the psychological, spiritual and social aspects of a person's life and may describe the way people make sense of the world. Psychological characteristics include emotions, thoughts, attitudes, motivation, and behavior, while social aspects denote the way in which a person relates to and interacts with their environment.

Psychosocial support is care concerned with the psychological and emotional well-being of the patient and their family or careers, including issues of self-esteem, insight into an adaptation to the illness and its consequences, communication, social functioning and relationships. It is a form of care that encourages patients to express their feelings about the disease while at the same time providing ways by which the psychological and emotional well-being of such patients and their caregivers are improved.

In most cases, palliative patients have severe functional and cognitive limitations requiring support in basic needs, such as hygiene, food, money, medication and mobility, relying on others for daily life activities, with increasing dysfunction and psychological repercussions.

8.6.1. Consequences of diagnosis

The psychological and social consequences of a diagnosis of life-limiting illness on the patient need to be considered. A diagnosis of this kind may provoke a range of emotional responses in the patient or family member. These include:

- **Fear** of physical deterioration/ dying; pain/suffering; losing independence; the consequences of illness or death on loved ones
- **Anger** at what has happened or what may have caused/ allowed it to happen; unsuccessful treatment Sadness at approaching the end of life; restriction of activities due to illness
- **Guilt**/regret for actions; in some cases for contributing to the development of the illness
- **Changes in sense of identity**, adjusting to thinking of themselves as unwell/ dependent
- **Loss of self-confidence,** sometimes related to loss of physical functioning/ changes in appearance Confusion about what has happened; the future and choices available.

8.6.2. Importance of psychosocial support

Psychosocial support is very important for patients in palliative care by reducing both psychological distress and physical symptoms through increasing quality of life, enhancing coping and reducing levels of pain and nausea with a consequent reduction on demands for hospital resources.

8.6.3. Components of psychosocial support

Psychosocial support and services may include any or all of the following:

- Emotional support, including social activities, companionship and befriending
- Personal care, help with bathing or providing massage and other complementary therapies
- Assistance in securing financial support
- Help inside and outside the home; for example, cleaning and shopping
- Supplying practical aids such as wheelchairs and other equipment
- Offering counseling and psychological support to help people come to terms with dying religious/spiritual support, whatever a person's beliefs
- Practical support in preparing for death, including saying farewell, making end-of-life decisions and arranging funerals.

8.6.4. Features of psychosocial care

The care taken to address the psychological and social concerns of patients in palliative care might involve:

Communication

Good communication is at the core of positive end of life experiences. Communication underpins every aspect of care and is a conduit to psychosocial aspects of care. Unmet communication needs of people with life limiting illnesses and of carers can undermine the coordination of care and compromise the provision of relevant information and subsequent decision-making.

Effective communication and meaningful ongoing conversations during care can help facilitate knowledge about the palliative patients, their life experiences and needs of care. Through this increased understanding of the person, it assists in identifying any emotional, or spiritual concerns they may have which in turn can improve physical and emotional wellbeing.

Allowing adequate time for communication to occur improves the quality of the interaction with the person, with research showing a reduction in care time is achieved due to greater engagement, cooperation and a reduction in distress. Conversely, poor communication can lead to poor understanding of a person's concerns which has a known association with the development of depression and anxiety.

From the perspective of the family of the person receiving palliative care, their information needs are critical. Families often wish to be kept informed of their relative's condition and value open and timely communication from staff. Deficiencies in conversations, particularly around changes in their relative's health status, often

result in family members experiencing feelings of abandonment, anxiety, distress and fear of the unknown. Fully engaging family members in information sharing and decision making with honest, open communication can allow them to make decisions around how best to spend their remaining time with their family member.

Other features:

- Helping patients understand their illness and/or symptoms
- Helping patients to understand their options and plan for the future
- Advocating on behalf of patients/those close to them to ensure they have access to the best level of care and services available
- Enabling patients and those close to them to express their feelings and worries related to the illness, listening and showing empathy, providing comfort through touch as/ when it is appropriate, e.g. holding a patient's hand or putting a hand on his or her shoulder. Also, complementary therapies such as massage
- Helping the patient or family member access any financial aid they may be entitled to (including benefits, but also charitable trusts/grants where applicable)
- Practical help with daily activities like grocery shopping
- Arranging personal/social care and organising aids for daily living — setting up a care package, installing hand rails or other adaptations
- Career support such as making arrangements for respite
- Signposting the patient/those close to them to relevant resources like local support groups
- Exploring spiritual issues and ensuring the patient is able to continue his or her religious practices
- Referring the patient or family member to specialist psychological/social support where appropriate

Self-assessment 8.6

1) Psychosocial support is defined as….

a. Means actions that address both the psychological and social needs of individuals, families and communities

b. Means interventions aimed at curing mental health problems

c. Aims to enhance the self-promoted recovery and resilience of the affected individual, group and community

d. Means interventions offered to the cadaver after death

2) What are the consequences of deficiency communication to the family which has a patient under palliative care?

3) Explain the importance of psychosocial support

4) Enumerate three consequences resulting from emotion to palliative patient or his/her family

8.7. Spiritual support

Learning activity 8.7

Observe the image below and answer the following questions



A



B

1) What do you see on the above picture?

2) Describe the importance of the actions which are being done on the above picture

It is very crucial for nurses in palliative care to know about any specific cultural practices, spiritual and religious conditions of the patients. Spiritual variables have an important effect mediating physical symptoms and suffering.

8.7.1. Importance of spiritual support in palliative care

Spiritual care has positive effects on individuals' stress responses, spiritual well-being (such as the balance between physical, psychosocial, and spiritual aspects of self), sense of integrity and excellence, and interpersonal relationships. Spiritual care improves people's spiritual well-being and performance as well as the quality of their spiritual life.

spiritual status of patient impact the patient decision-making at the end-of-life and high levels of spiritual wellbeing have been associated with improved quality of life, improved coping with disease, improved adjustment to diagnosis, better ability to cope with symptoms and protection against depression, hopelessness and desire of hastened death. Therefore, improving spiritual support in patients' palliative care is a valuable task.

8.7.2. Where to get spiritual support services

In health care system, the spiritual support services can be available either as pastoral care workers (or spiritual care workers) or be invited from outside of the health care system and are available to support palliative care team. Pastoral care workers are trained professionals who can help people work through their feelings. They can also arrange visits from spiritual leaders such as ministers, priests, rabbis and imams. Where necessary, they can also educate and support others in caring roles in providing culturally sensitive spiritual care.

If the person is religious, possible spiritual interventions might include (1) visits from or referrals to chaplains, pastoral care workers or traditional healers, (2) spiritual or religious counseling and (3) taking part in religious services.

If the person is not religious, possible spiritual interventions might include (1) creating a life review, (2) support groups, (3) listening to music, (D) creating artwork, (E) enjoying nature, (F) enjoying other leisure activities.

Self-assessment 8.7

1) Case study: You are at hospital where you have a patient suffering from liver cancer in advanced stage. She is catholic and the family members need a sacrament for their patient. Where can you find that spiritual support?
2) What is the importance of spiritual support for a palliative care patient?

8.8. Legal and Ethical issues in Palliative care

Learning activity 8.8

Mr. X is hospitalized for 3 months; he was diagnosed of advanced cancer of the lungs with metastasis in the liver. The treating team has decided to treat him as palliative care as there is no curative treatment for his advanced lung cancer. Mr. X has difficulty in breathing and experience severe pain; he is on strong pain killers and oxygen via face mask. This morning during the ward round he called the doctor in front of his wife and said that if he had a cardiac arrest he doesn't want to be resuscitated and that if he fails in respiratory failure he doesn't want any other mean of advanced respiratory support such as mechanical ventilation. The doctor asked you to give a paper To Mr. X and to sign for his preferences at end of life.

1) Do you think that it is acceptable to accept such request? Explain your answer
2) By respecting Mr. X request which ethical principles are respected.

Ethics refer to the moral principles that guide behavior and decision making, and the branch of knowledge and inquiry that deals with moral principles. Guiding moral principles arise from a variety of beliefs about right and wrong and behavior.

Bioethics is ethics as applied to human life or health (such as decisions about abortion or euthanasia).

Palliative and end of life issues are often delicate and controversial and require skilled, insightful interdisciplinary care. Health care providers encounter many challenges and ethical dilemmas; ethical principles and code conduct guide them in decision making.

8.8.1. Ethical principles in palliative care/ end of life care

Ethical principles guide decision making in end of life/palliative care. The following principles should be applied while providing palliative care and end of life care. Understanding the principles underlying ethics is important for health care providers and their patients to solve the problems they face in end of life care. The ethical principles are autonomy, beneficence, no maleficence, fidelity, justice and veracity.

a. Autonomy

Autonomy refers to the right to make one's own decisions. It is patient's right to self-determination. Everyone has the right to decide what kind of care they should receive and to have those decisions respected. Respecting patient autonomy is one of the fundamental principles of nursing ethics. This principle emphasizes on

protection of the patients' right to self-determination, even for patients who have lost the ability to make decisions. This protection can be achieved by using advance care directives.

Advance care directives (ADs): ADs are derived from the ethical principles of patient' autonomy. They are oral and/or written instructions about the future medical care of a patient in the event he or she becomes unable to communicate, and loses the ability to make decisions for any reason. ADs completed by competent person ordinarily include living wills, health care proxies, and "do not resuscitate" (DNR) orders.

A living will is a written document in which a competent person provides instructions regarding health care preferences, and his or her preferences for medical interventions such as feeding tubes that can be applied to him or her in end-of-life care. A patient's living will take effect when the patient loses his or her decision making abilities.

A health care proxy (also called health care agent or power of attorney for health care) is the person appointed by the patient to make decisions on the patient's behalf when he or she loses the ability to make decision. A health care proxy is considered the legal representative of the patient in a situation of severe medical impairment. The responsibility of the healthcare proxy is to decide what the patient would want, not what the proxy wants.

ADs help ensure that patients receive the care they want and guide the patients' family members in dealing with the decision-making burden. Another reason for ADs is to limit the use of expensive, invasive, and useless care not requested by patients. Researches show that ADs improve the quality of end-of-life care and reduce the burden of care without increasing mortality.

In many countries, the right of people to self-determination is a legal guarantee. Each patient's "right to self-determination" requires informed consent in terms of medical interventions and treatment. A patient has both the "right to demand the termination of treatment" (e.g. the discontinuation of life support) and the "right to refuse treatment altogether"; the exercise of these rights is strictly dependent on the person. ADs can be updated yearly and/or prior to any hospitalization.

In many countries, the right of competent individuals to express their treatment preferences autonomously in end-of life care should be met with ethical respect, taking into account the use of advanced treatments and the prognosis of their disease. However, this autonomy has some limitations. The decisions made by a patient should not harm him or her. It is important for healthcare providers to respect the autonomy of their patient and fulfill their duties to benefit their patients without harming them.

b. Non-maleficence

Non-maleficence is the duty to 'do no harm'. Although this would seem to be a simple principle to follow, in reality it is complex. Harm can mean intentionally causing harm, placing someone at risk of harm and unintentionally causing harm. However, placing a person at risk of harm has many facets. A person may be at risk of harm as a known consequence of a nursing intervention intended to be helpful. For example, an individual may react adversely to a medication. Unintentional harm occurs when the risk could not have been anticipated.

Although some of the nursing interventions might cause pain or some harm, non-maleficence refers to the moral justification behind why the harm is caused. Harm can be justified if the benefit of the nursing intervention is greater than the harm to the patient and the intervention is not intended to harm the patient.

c. Beneficence

Beneficence means 'doing good'. Nurses are obligated to do good; that is, to implement actions that benefit individuals. However, doing good can also pose a risk of doing harm. Beneficence requires physicians to defend the most useful intervention for a given patient. Often, patients' wishes about end-of-life care are not expressed through ADs, and the patients' health care providers and family members may not be aware of their wishes about end-of-life care.

If a patient is not capable of decision-making, or if the patient has not previously documented his or her wishes in the event he or she becomes terminally ill, the end-of-life decision is made by the patient's Health care provider as a result of consultations with the patient or the patient's relatives or the patient's health care proxy. In this situation, the responsibility of the Health care provider in the care of the dying patient should be to advocate the approaches that encourage the delivery of the best care available to the patient.

d. Justice

Justice is often referred to as fairness. Nurses face decisions where a sense of justice should prevail. Healthcare providers have an ethical obligation to advocate for fair and appropriate treatment of patients at the end of life. This can be achieved through good education and knowledge of improved treatment outcomes.

e. Fidelity

Fidelity means to be faithful to agreements and promises. By virtue of their standing as professional caregivers, nurses have responsibilities to people in their care, employers and society, as well as to themselves. Nurses often make promises such as 'I'll be right back with your pain medication' or 'I'll find out for you'. Individuals take such promises seriously and nurses are obliged to respond within appropriate time frames. Fidelity principle requires Health Care providers to be honest with their

dying patient about the patients' prognosis and possible consequences of patients' disease.

f. Veracity

Veracity refers to telling the truth. Although this seems straight forward, in practice choices are not always clear. Should a nurse tell the truth when it is known that it will cause harm? Does a nurse lie when it is known that the lie will relieve anxiety and fear? Lying to sick or dying people is rarely justified. The loss of trust in the nurse and the anxiety caused by not knowing the truth usually outweigh any benefits derived from lying. Truth telling is fundamental to respecting autonomy.

Most patients want to have full knowledge of their disease and its possible consequences, but this desire may decrease as they approach the end of their life. Some patients may not want information about their disease. Health care providers should be skilled in determining their patients' preferences for information and, honestly yet sensitively, provide their patients with as much accurate information as the patients want. Having effective patient-centered communication skills helps Health Care providers learn and meet the demands of their patients.

8.8.2. Ethical issues in end of life and Palliative care

In the end of life care of a patient, the decision to implement practices to prolong the patient's life or to comfort the patient may be difficult for the Health care providers, patient, family members or health care proxy. The following topics relate to some situations where difficulty in decision making regarding end of life is encountered: Cardiopulmonary resuscitation (CPR), advanced respiratory support such as Mechanical ventilation (MV), artificial nutrition and hydration (ANH), terminal sedation, withholding and withdrawing treatment, euthanasia and physician-assisted suicide (PAS).

a. Cardiopulmonary resuscitation(CPR)

Although CPR is valuable in the treatment of heart attacks and trauma, sometimes the use of CPR may not be appropriate for dying patients and may lead to complications and

Worsen the patients' quality of life. For some terminally ill patients, CPR is an undesired intervention. The decision not to perform CPR on a dying patient can be difficult for healthcare personnel. The decision to administer CPR to a patient depends on many factors such as patient preferences, the estimated success rate, the risks of the procedure, and the perceived benefit.

A competent patient may not want to undergo CPR in the event of cardiopulmonary arrest. This decision is called the" **Do not attempt CPR**" (DNR decision). Despite this request, the patient's family members may ask the Health Care provider to perform CPR. In this case, if the patient is conscious and has the ability to make

decisions, the patient's decision is taken into account. Physicians must learn the CPR demands of patients at risk of cardiopulmonary arrest. DNR decision can be considered for the following patients

- Patients who may not benefit from CPR;
- Patients for whom CPR will cause permanent damage or loss of consciousness;
- Patients with poor quality of life who are unlikely to recover after CPR.

b. Advanced respiratory support: Mechanical ventilation

Approximately 75% of dying patients experience difficulty breathing or dyspnea. This feeling can be scary for patients and those who witness it. In end-of-life care, mechanical ventilation is applied not to prolong the lives of patients but to reduce their anxiety and to allow them to sleep better and eat more comfortably.

If Mechanical ventilation support does not provide any benefit to the patient or no longer meets its intended goals, or if the outcome is not optimal, or the quality of life is not acceptable according to the patient's or family's wishes, support can be terminated. The timing of the device separation should be chosen by the patient's family members.

c. Advanced Nutrition and Hydration(ANH)

Nutrition and hydration are essential parts of human flourishing. ANH involves giving food and water to patients who are unconscious or unable to swallow.

Artificial nutrition can be given through enteral feeding by tube or parenteral feeding. Nutrition and hydration decisions are among the most emotionally and ethically challenging decisions in end-of-life care. Many medical associations suggest that feeding and hydration treatments are forms of palliative care that meet basic human needs and must be given to patients at the end of life.

ANH may improve the survival and quality of life of some patients. It may improve the nutritional status of patients with nutritional problems. ANH is associated with considerable risks such as the aspiration pneumonia, diarrhea, and gastrointestinal discomfort.

For these reasons, the benefits and possible harms of the intervention should be explained to the patient or to the other decision-makers in detail before making the ANH decision.

If a patient is incompetent, his or her proxy decision-maker can refuse artificial feeding and hydration on behalf of the patient.

d. Terminal Sedation

Terminal sedation is a medical intervention used in patients at the end of life, usually as a last effort to relieve suffering when death is inevitable. Sedatives are used for terminal sedation. People have some concerns about terminal sedation because

the treatment of an unconscious patient is sensitive and risky. The purpose of terminal sedation is not to cause or accelerate death but to alleviate pain that is unresponsive to other means.

There are four criteria for evaluating a patient for terminal sedation:

- The patient has a terminal illness.
- Severe symptoms are present, the symptoms are not responsive to treatment, and the symptoms are intolerable to the patient.
- A “do not resuscitate” order is in effect.
- Death is imminent (hours to days).

e. Withholding and Withdrawing treatment

Withdrawing is a term used to mean that a life-sustaining intervention presently being given is stopped. **Withholding** is a term used to mean that life-sustaining treatment is not initiated or increased.

The decision to withhold or withdraw interventions or treatment is one of the difficult decisions in end-of-life care that causes ethical dilemmas. If a patient and physician agree that there is no benefit in continuing an intervention, the right action is withholding or withdrawing the interventions.

In most countries, the legal opinion is that patients cannot seek treatment that is not in their best interest and, that physicians should not strive to protect life at all costs. However, if there is doubt, the decision must be in favor of preserving life. All healthcare professionals should be able to define an ethical approach to making decisions about withholding and withdrawing treatment that takes into account the law, government guidance, evidentiary base, and available resources.

f. Euthanasia

Euthanasia, is a Greek word meaning ‘good death’, Euthanasia is applied in two ways as active or passive euthanasia.

Active euthanasia involves actions to bring about an individual’s death directly. In active euthanasia, a person (generally a physician) administers a medication, such as a sedative and neuromuscular relaxant, to intentionally end a patient’s life at the mentally competent patient’s explicit request.

Passive euthanasia: Passive euthanasia occurs when a patient suffers from an incurable disease and decides not to apply life-prolonging treatments. More commonly referred to now as withdrawing or withholding life-sustaining therapy, involves the withdrawal of extraordinary means of life support, such as removing a ventilator or withholding special attempts to revive an individual (e.g. a ‘not for resuscitation’ status) and allowing the individual to die of the underlying medical condition.

Euthanasia is not accepted legally and ethically in many counties worldwide including Rwanda.

8.8.3. Strategies to enhance ethical decisions and practice

Several strategies help nurses overcome possible organizational and social constraints that may hinder the ethical practice of nursing and create moral distress. As a nurse, the following should be taken into consideration:

- Become aware of your own values and the ethical aspects of nursing.
- Be familiar with nursing codes of ethics.
- Seek continuing education opportunities to stay knowledgeable about ethical issues in nursing.
- Respect the values, opinions and responsibilities of other health care professionals that may be different from your own.
- Where possible, participate in or establish ethics rounds. Ethics rounds use hypothetical or real cases that focus on the ethical dimensions of the care of the individual rather than the individual's clinical diagnosis and treatment.
- Serve on institutional ethics committees.
- Strive for collaborative practice in which nurses work effectively in cooperation with other health care professionals.

Other patients' rights

All patients have a right to dignity throughout their life, especially when the end of life is near. Provide privacy when bathing or caring for a patient. Encourage the person to make choices and control their own life. If they want to wear a certain dress, let them wear it. If they want their bath in the evening instead of the morning, let them have their bath in the evening. Allow the person to be as independent as possible, speak to the person with respect and call the patient by their name.

All patients that are capable of making a decision must be able to do so, even when the end of life is near. Patients have a right to have their medical information secret and private. Never discuss a patient or their condition with friends, neighbors, other patients or residents. Do not discuss any information about the patient unless the patient asks you to.

Keep patient information confidential. It is against the law to tell your family member or neighbor that a patient named x, my patient is dying with AIDS.

Nursing care does not stop when the end of life comes. All members of the health care team play a very important role in the end-of-life care. This care meets the person's physical, mental, social, spiritual and financial needs. Nurse and others health team must be able to meet these needs. Care at the end of life is a very rewarding part of nursing care.

Furthermore, the patient has right to be treated as a living human being until He/she die, right to maintain a sense of hopefulness, the right to express the feelings and emotions about the approaching death in the patient own way, right to participate in decisions concerning his care, right to expect continuing medical and nursing attention even though cure goals must be changed to comfort goals, right not to die alone, right to be free from pain, right to have questions answered honestly, right to die in peace and dignity, right to discuss and enlarge patient religious and or spiritual experiences, whatever these may mean to others and right to expect that the sanctity of the human body will be respected after death.

Self-assessment 8.8

1) What are advance care directives? What is its purpose in end of life care?
2) Cardiopulmonary resuscitation (CPR) is lifesaving intervention; however in some circumstances a decision of Do not attempt Resuscitation (DNR) may be made; for which patients a DNR may be considered?
3) In end of life care; termination sedation may be administered to patients; What are criteria should the health care provider assess before administration of termination sedation.
4) Define euthanasia and explain its main types
5) In caring patient in palliative care nurses may encounter constraints that may hinder the ethical practice of nursing and create moral distress. Give 4 strategies that will help the nurse to overcome those constraints?

8.9. Communication in palliative care

Learning activity 8.9



A



B

1) In which context may you encounter image A and B?
2) Which message pictures A and B communicate to you?

In situations of serious illness, communication is one of the most important tools which the health care professionals use in giving the patient the information that they need to know. This creates a sense of trust and security for both the patient and the family.

Communication is the exchange of information, thoughts and feelings among people using speech or other means. In healthcare, it is approaching every patient interaction with the intention to understand the patient's concerns, experiences, and opinions.

Communication is a vital basic pre-requisite for all health care providers to provide effective quality of care for all patients and not just in the palliative care; however Palliative care requires excellent communication skills because at this time communication can be particularly challenging due to patient clinical situations where suffering, fear, and confusion can be considerable. Communication in palliative care involves the conversation between patient, family and health care provider about goals of care, transitions in care, progress of disease and providing social, psychological & spiritual support. Communication can never be neutral; it is either effective or ineffective, stress relieving or stress inducing.

The approach in communicating information, predictions, and prognoses to patients and loved ones will have a crucial effect on their current and future behavior, as well as potentially on treatment and illness outcomes.

Communication should be done in sense of Sensitive, honest and empathic in order to relieve the burden of difficult treatment decisions, and the physical and emotional complexities of death and dying, and lead to positive outcomes for people nearing the end of life and their companions.

Effective and efficient communication is crucial for providing care and support to people affected by life-limiting illness. However, some people are not familiar to discussing personal psychological issues and can find these conversations difficult

Importance of communication in palliative care

Good communication between healthcare professionals and patients can lead to a greater sense of well-being, decreasing feelings of distress commonly experienced by those diagnosed with a terminal illness and their families.

Communication in palliative care help patients to understand their disease, outcomes, patient behavior, ability to cope, both physical and psychological health, as well as patient satisfaction with care, and compliance with treatment.

Also, good communication in palliative care was found to be effective in prevention of depression and other stress related, helps patient to participate in decision making during care and improve psychological and physical well-being.

Open communication is an important aspect of death and dying and of a good death and it is thought to contribute to effective symptom control and end of life planning.

By contrast, poor communication is associated with distress, complaints and can result in the patient -family having significant misunderstanding of end-of-life processes.

Behavior of nurse in palliative care

During communication, the health care provider should possess the following behavior in order to contribute in patient's sense of hope including being present and taking time to talk; giving information in a sensitive and compassionate manner, answering questions and being nice, friendly and polite.

Showing empathy to the patient is a key for both verbally and nonverbally communication. Non-verbal communication is vital as the way we interact impacts on the relationships with our patients, as we constantly give out signals through our body language in the way we sit and the gestures we make.

Self-assessment 8.9

1) What is communication?
2) What are factors that can influence the communication in palliative care?
3) Who can be involved in communication with the patient?

8.10. Communication strategies used in palliative care

Learning activity 8.10

Observe the following pictures and respond to the related questions



A



B



C

1) What is the attitude of health care provider observed in the images A, B, and C?
2) What are the similarities of the above images?
3) What is the importance of the nurse‘s attitude in the image A, B, C?

Interpersonal communication in the area of health and palliative care is understood as a complex process that involves the perception, comprehension and transmission of messages in the interaction between patients and health-care professionals.

This process has two dimensions: the verbal, which occurs through the expression of spoken or written words, and the nonverbal, characterized by the manner and tone of voice with which words are said, by gestures that accompany the speech, by looks and facial expressions, by the body posture, and by the physical distance that people maintain with each other.

Communication in the context of palliative care consists of verbal and nonverbal. Verbal communication strategies include interrogative nature and were related to the expectations and knowledge of the patients about their disease and treatment, as well as statements of concern and interest in the multidimensional aspects of the patient. Nonverbal consist of communication five signals or strategies including affective touch, the look, the smile, physical proximity and active listening. It is essential for the care of the patient undergoing the process of dying that healthcare professionals adequately perceive, comprehend and employ verbal and nonverbal communication.

The nonverbal communication makes it crucial in the context of terminality because it allows the perception and comprehension of the feelings, doubts and anxieties of the patient, as well as the understanding and clarification of gestures, expressions, looks and symbolic language typical of someone who is experiencing a phase in which a cure for their disease is no longer possible.

Verbal communication strategies consist of asking what the patients know about their condition, ask the patients how they feel, to encourage them to talk about their feelings, verbalize willingness to help, talk and/or clarify doubts, ask about the expectations of the patients regarding the treatment, ask about the interests and preferences of the patients in order to establish pleasant conversations. The strategies or techniques of **verbal communication** can be classified into three groups: expression, clarification and validation.

The strategies allocated to the expression group were those that they allow verbal **expression** of thoughts and feelings, facilitating their description and enabling the exploration of problematic areas for the patient. In the **clarification** group, there were the strategies that help to comprehend or clarify the messages received, enabling the correction of inaccurate or ambiguous information. The **validation** group contained the expressions that make the ordinary meaning of what is expressed, certifying the accuracy of the comprehension of the message received.

Nonverbal communication strategies include:

1) **Affectionate touch that** refers to the physical contact that conveys messages of an emotional nature. Several actions mentioned by the professionals that were grouped under this denomination were: a hug, a kiss on the cheek, a caress of the hair, a firm handshake, touching hands, arms and shoulders and greeting with physical contact.

2) **Establish/maintain eye contact and smiling:** Eye contact and smiling are facial signals that denote interest and, therefore, facilitate the interaction with the patients. In addition to portraying emotions, the look has an important function: to regulate the flow of the conversation. The interruption of eye contact may denote a lack of interest in continuing the conversation, causing the interaction to be interrupted or impaired. Thus, both show essential signals for the approach and establishment of a bond of trust with the patients.

3) **Physical proximity:** The distance that people maintain with each other during the interaction also transmits messages.

4) **Active listening:** Active listening involves the therapeutic use of silence, the conscious emission of nonverbal facial signals that denote interest in what is being said (maintaining eye contact, positive head nods), the physical proximity and orientation of the body with the trunk facing toward the person, and the use of short verbal phrases that encourage continuation of the speech, such as: and then..., and I hear you.

Self-assessment 8.10

1) Discuss non-verbal communication strategies
2) Explain the groups of verbal communication

8.11. Principles of communication in palliative care

Learning activity 8.11

Observe the following images A and B:



A



B

What are your observations toward the image A and B?

8.11.1.Overview of principles of communication in palliative care

There are some general communications principles that help facilitate discussion about existential and psychological concerns, and demonstrate respect for the person's individuality. thus, including **PREPARED and The SPIKES communication framework.**

The **PREPARED** communication framework outlines key strategies that can be used when communicating with a person with a life-limiting illness, their family and cares. The **PREPARED** communication framework:**(P) Prepare** for discussion, **(R) Relate** to person, **(E) Elicit** preferences from the person and their caregivers, **(P) Provide** information tailored to the needs of both the person with a life limiting illness and their families and carers, **(A) Acknowledge** emotions and concerns, **(R) Realistic** hope, **(E) Encourage** questions and further discussions and **(D) Document.**

a. The PREPARED communication framework in clinical practice

P: Prepare for the discussion:

Ensure facts about the person's clinical circumstances are correct, ensure privacy and uninterrupted time for the discussion, mentally prepare yourself for the conversation and negotiate who should be present during the discussion eg, "Is there anyone else

you would like to be here with you while we talk?"

R: Relate to the person:

Develop a rapport, show empathy, care and compassion during the entire conversation, propose the topic in a culturally appropriate and sensitive manner, make eye contact (if culturally appropriate), and Sit close to the person (if culturally appropriate). Use culturally appropriate body language and allow silence and time for them to express feelings.

E: Elicit personal preferences:

Identify the reason for this conversation and establish the person's expectations, clarify their understanding of the situation and establish how much detail they want to know and consider cultural and contextual factors that can influence information preferences.

P: Provide information that is tailored to the personal needs of all parties

Offer to discuss what to expect, in a sensitive manner, giving the person the option not to discuss it, provide information in small amounts at the person's step, engage in active listening such as attend to the person completely, reflecting and repeating back what you think they have said. Explain the uncertainty, limitations and unreliability of prognostic and end-of-life information, ensure consistency of information and approach and use the words 'death' and 'dying' where appropriate.

A: Acknowledge emotions and concerns

Explore and acknowledge fears, concerns and emotional reaction and be willing to initiate and engage in conversations about what can happen in the future and during the dying process and respond to distress where applicable.

R: Realistic hope

Be honest without being blunt or giving more detailed information than desired. Do not provide misleading or false information that artificially influences hope. Reassure the person that support, treatment and resources are available to control pain and other symptoms but avoid premature reassurance. Explore and facilitate realistic goals, wishes and ways of coping on a day-to-day basis, where appropriate.

E: Encourage questions

Encourage questions and information clarification. Be prepared to repeat explanations, check understanding of what has been discussed and whether the information provided meets personal needs and Leave the door open for topics to be discussed again in the future.

D: Document

Write a summary in the medical record of what has been discussed and speak or write to other key healthcare providers involved in the person's care.

b. The SPIKES communication framework in clinical practice

The SPIKES Protocol was developed to assist healthcare professionals with breaking bad news. Effective communication when dealing with bad news can enhance the understanding of prognosis and treatment options, and the person's adjustment to their situation.

THE SPIKES steps can complement the PREPARED framework by assisting with the four most important objectives of breaking bad news which are (1) Gathering information, (2) Transmitting medical information (3) Providing support and (4) eliciting the person's collaboration in developing a strategy or treatment plan for the future.

Although some of the steps of **SPIKES** are similar to the steps in PREPARED, SPIKES concentrates on delivering bad news (such as the initial diagnosis), while PREPARED focuses on the holistic support of the person and their family throughout their illness and can be used to frame discussions in a range of palliative contexts.

SPIKES stand for:

Setting up: organize an interview with the patient

Perception: Find out what the patient knows about his or her condition

Invitation: Get patient's permission to impart bad news

Knowledge: Convey bad news at the level of the patient's comprehension

Emotions: Physician must acknowledge and respond to patient's emotions

Strategy and Summary: Summarize areas discussed, and formulate strategy and follow-up plan.

S: Setting up the conversation

Choose a setting with privacy and without interruptions, ensuring that you have a private space, phones turned to silent, turned pagers off, allowed sufficient time for the conversation, help the person to understand what they are hearing by confirming and explaining medical facts, check the accuracy of all available information – including test results and that you have the right person. Plan what you will say,

decide on general terminology to be used, consider your own emotional reaction to providing the distressing news. Find out in advance if the person wants anyone else to be present.

P: Assessing the Person's perception

Find out how much the person knows already, in particular, how serious they think the illness is and how much it will affect the future. This helps you gauge how close to the medical reality their understanding is or if they are in denial. This information helps you to decide on the pacing and content of the conversation.

I: Obtaining the Person's invitation

Find out what the person wants to know, you must be committed to honesty and respecting their wishes if they do not want to be informed.

K: Providing knowledge and Information to the Person

The health care provider should decide on the objectives for the conversation and consider what the person knows and needs to know. The patient should be clear on how to manage their illness about diagnosis, treatment Plan, prognosis and support. The health care provider should be clear and direct. He should use plain language and avoid jargon, complex medical terminology and acronyms. Whenever necessary, use diagrams, written messages and booklets as an aid and respond to patient concerns and questions.

E: Addressing the person's emotion with empathic responses

The health care provider should observe the person and give them time to react and comprehend the news and acknowledge any emotional response without criticism or blame. Ask the person what they are thinking or feeling; listen and explore if you are unclear about what they are expressing; resist the temptation to make the distressing news better than it is and allow time for silence.

S. Strategy and Summary

Demonstrate a genuine understanding of the person's concerns, distinguish the fixable from the unfixable, make a plan or strategy and explain it by providing information on tests, treatment options, referrals and other aspects of care and prepare for the worst and hope for the best and schedule a follow up appointment so that they have the opportunity for further questions.

Self-assessment 8.11

1) Briefly discuss the communications framework used in palliative care communication and give the difference between them.

2) Respond with True or False to the following statement:

“While providing knowledge and information to the person with end of life condition, it is better to ask him about what he/she knows about transport.”

8.12. End of life and nursing care

Learning activity 8.12

See the pictures below



A



B

1) Explain the similarities in the images A and B

2) In which context you can see the images above?

Dying is a process of deterioration of the vital system, which ends with clinical death. One of the most important things we can do for patients who are dying is to provide the best possible care for them and their families during the last phase of life through death. This is particularly important during the “imminent” phase. This is the phase that precedes the actual death, and is also the time when the patient typically loses consciousness. The care the nurse provides during this phase will affect the family’s memories of their loved one’s final days and hours on earth. It is vital that the nurse performs thorough assessments, rapid response to changes in status, rapid titration of medications, and timely discontinuation and introduction of interventions aimed to promote comfort.

8.12.1.Diagnosis dying

Making a diagnosis that the patient is dying can be a complex process. In the hospital setting where the treatment emphasis is generally “cure” orientated, potentially useless investigations and treatments may continue at the expense of patient comfort if the diagnosis of dying is not made.

The advantages of diagnosing dying are that emphasis of care to become comfort based and ceasing unnecessary interventions, improving the awareness of dying, can enhance communication for the patient and family, enable discussion about place of care and assist the patient with their final wishes.

The following criteria generally support the diagnosis of dying: (1) A progressive deterioration in the responsiveness of the patient (e.g. their ability to respond to surroundings, decreased energy levels, becoming semi-comatose), (2) Reduced ability to swallow (e.g. able to only take sips of fluid, unable to take oral medication), (3) Deteriorating physical function (e.g. the patient has become bed-bound).

In other chronic incurable diseases predictability of the dying phase is not always as clear. A range of factors will need to be considered including diagnosis of a life-threatening illness, no further curative treatment options, cause of deterioration (infection, hypercalcemia, etc).

According to Kübler-Ross, there are 5 stages which precede dying and they are widely known in the acronym **DABDA** (Denial, Anger, Bargaining, Depression and Acceptance):

1. **Denial:** "I feel fine."; "This can't be happening, not to me. Denial is usually only a temporary defense for the individual. This feeling is generally replaced with heightened awareness of possessions and individuals that will be left behind after death. Denial can be conscious or unconscious.
2. **Anger:** Why me? It's not fair!"; "How can this happen to me?"; '"Who is to blame?” Once in the second stage, the individual recognizes that denial cannot continue. Because of anger, the person is very difficult to care for due to misplaced feelings of rage and envy. Anger can manifest itself in different ways.
3. **Bargaining:** "I'll do anything for a few more years."; "I will give my life savings if..." The third stage involves the hope that the individual can somehow postpone or delay death. Psychologically, the individual is saying, "I understand I will die, but if I could just do something to buy more time..." People facing less serious trauma can bargain or seek to negotiate a compromise.
4. **Depression:** "I'm so sad, why bother with anything?"; "I'm going to die soon so what's the point?"; "I miss my loved one, why go on?" During the

fourth stage, the dying person begins to understand the certainty of death. Because of this, the individual may become silent, refuse visitors and spend much of the time crying and grieving. This process allows the dying person to disconnect from things of love and affection. It is not recommended to attempt to cheer up an individual who is in this stage. It is an important time for grieving that must be processed.

5. **Acceptance:** "It's going to be okay."; "I can't fight it; I may as well prepare for it."

In this last stage, individuals begin to come to terms with their mortality, or that of a loved one, or another tragic event. This stage varies according to the person's situation.

8.12.2.Phases of dying

Dying process has 3 phases including: actively dying, Transitioning, and Imminent.

a. Active phase

In **active dying phase** there are two typical roads to death that can occur during the actively dying process which are the **usual road** or **the difficult road**. The usual road is the best we can hope for when caring for persons at the end of life. It begins with sedation and lethargy and progresses to a comatose state and then death. The difficult road includes restlessness and confusion that often progresses to unpleasant hallucinations and delirium. Myoclonus and seizures can also accompany the difficult road.

Physical signs and symptoms associated with both roads including: pain, dyspnea, fatigue, cough, constipation or diarrhea, incontinence, anorexia, cachexia, nausea and vomiting, depression and seizures

The role of the nurse during the active dying phase is to support the patient and family by educating them on what they might expect to happen during this time, addressing their questions and concerns honestly, being an active listener, and providing emotional support and guidance.

b. Transition phase

Transitioning phase describe the period of time in between the actively dying phase and the imminent phase. In this phase, patients begin to withdraw from the physical world around him in preparation for their final journey. Some examples of this could include: decreased interest in activities of life, less frequent and shorter interactions with others, this is referred to as “nearing death awareness” and often documented by clinicians as “hallucinations.” Possible explanations of this phenomenon from the medical community are as a result of hypoxia, acidosis, or alterations in metabolic processes. Patients will generally not exhibit any signs or symptoms of distress with this awareness, whereas patients whose dying is taking the difficult road might show signs of distress or agitation with their awareness.

During transitioning, it is important to keep the patient's area as comfortable and peaceful as possible. Common lights and noises can contribute to restlessness and agitation; therefore, it is advisable to keep lights soft, shades closed if possible, and external noises limited to a minimum.

c. Imminent phase

Imminent phase is defined as what is about to happen. The patient has transitioned into this last phase of the dying process and death can occur at any point now. Not all individuals will present with every sign or symptom, and the symptoms will occur in no particular order. During this phase, the body is in the process of shutting down. Multi-system organ failure often occurs and will result in some typical symptoms. In cardiological or circulatory system the patient may have Cool and clammy skin, cold extremities and rapid or irregular pulse. In musculoskeletal system, the patient may present inability to ambulate, inability to move/turn in bed and increased lethargy. In neurological system, the patient may present more difficulty to arouse, confusion and restlessness, in respiratory system, the patient may present periods of apnea or Cheyne stokes respiration pattern, increased respiratory rate, inability to cough or clear secretions and presence of increased secretions (death rattle). In urinary system, the patient may present decreased and/or dark urine output

During this phase, the patient becomes unresponsive to those around him and may appear to be sleeping. Sometimes the patient's eyes will be partially open as they are resting. **The patient can still hear or sense the activity** and loved ones around them and so nurse has to teach the families to continue to talk to and gently touch their loved ones in this phase.

8.12.3. Nursing management of dying person

a. Assessment

To gather a complete database that allows accurate analysis and identification of appropriate nursing diagnoses for individuals who are dying and their families, the nurse first needs to recognize the states of awareness manifested by the person and family members. In cases of terminal illness, the state of awareness shared by the dying person and the family affects the nurse's ability to communicate freely with individuals and other health care team members and to assist in the grieving process. Three types of awareness:

- **Closed awareness,** the individual is not made aware of impending death. The family may choose this because they do not completely understand why the person is ill or they believe that they will recover. The doctor may believe it is best not to communicate a diagnosis or prognosis to the individual. Nursing staff are confronted with an ethical problem in this situation.
- **Mutual pretence,** the individual, family and health professionals know that the prognosis is terminal but do not talk about it and make an effort not to

raise the subject. Sometimes the person refrains from discussing death to protect the family from distress. Mutual pretence permits the person a degree of privacy and dignity, but it places a heavy burden on them because there is no one in whom they can confide.

- **Open awareness**, the individual and others know about the impending death and feel comfortable discussing it, even though it is difficult. This awareness gives them an opportunity to finalize affairs and even participate in planning funeral arrangements

Clinical manifestations impending clinical death

Loss of muscle tone, characterized by the following:

- Relaxation of the facial muscles (e.g. the jaw may sag).
- Difficulty speaking.
- Difficulty swallowing and gradual loss of the gag reflex.
- Decreased activity of the gastrointestinal tract, with subsequent nausea, accumulation of flatus, abdominal distension and retention of faeces, especially if narcotics or tranquillisers are being administered.
- Possible urinary and rectal incontinence due to decreased sphincter control.
- Diminished body movement.

Slowing of the circulation, characterized by the following:

- Diminished sensation.
- Mottling and cyanosis of the extremities.
- Cold skin, first in the feet and later in the hands, ears and nose (the person, however, may feel warm if there is a fever).
- Slower and weaker pulse.
- Decreased blood pressure.

Changes in respirations, characterized by the following:

- Cheyne–Stokes respirations (rhythmic waxing and waning of respirations from very deep breathing to very shallow breathing with periods of temporary apnoea).
- Noisy breathing, referred to as the ‘death rattle’, due to collecting of mucus in the throat.
- Mouth breathing, dry oral mucous membranes.

Sensory impairment, characterized by the following:

- Blurred vision.
- Impaired senses of taste and smell.

b. Diagnosing

A range of nursing diagnoses, addressing both physiological and psychosocial needs, can be applied to the dying person, depending on the assessment data. Diagnoses that may be particularly appropriate for them are Fear, Hopelessness and Powerlessness. In addition, Risk of caregiver role strain and Interrupted family processes are not uncommon diagnoses for caregivers and family members.

c. Planning

Major goals for individuals who are dying are (a) maintaining physiological and psychological comfort, and (b) achieving a dignified and peaceful death, which includes maintaining personal control and accepting declining health status.

People facing death may need help accepting that they have to depend on others. Some people who are dying require only minimal care; others need continuous attention and services. People need help, well in advance of death, in planning for the period of dependence. They need to consider what will happen and how and where they would like to die. If the dying person wishes to be at home and family or others can provide care to maintain symptom control.

d. Implementing

The major nursing responsibility for individuals who are dying is to assist them to a peaceful death. More specific responsibilities are the following:

- To minimize loneliness, fear and depression
- To maintain the individual's sense of security, self-confidence, dignity and self-worth
- To help the individual adapt to losses
- To provide physical comfort.

i. Helping people die with dignity

Nurses need to ensure that the person is treated with dignity; that is, with honor and respect. People who are dying often feel they have lost control over their lives and over life itself. Helping them die with dignity involves maintaining their humanity, consistent with their values, beliefs and culture

ii. Meeting the physiological needs of the dying person

The physiological needs of people who are dying are related to a slowing of body processes and to homeostatic imbalances. Interventions include providing personal hygiene measures; controlling pain; relieving respiratory difficulties; assisting with movement, nutrition, hydration and elimination; and providing measures related to sensory changes

Table 8.12.1 Physiological need of dying people

Physiological need of dying people	
Problem	**Nursing care**
Airway clearance	• Fowler's position: conscious individuals • Lateral position: unconscious individuals • Nasal oxygen for hypoxic individuals • Oral suctioning as required • Anticholinergic medications may be indicated to help dry secretions • Consider nasopharyngeal airway insertion and suctioning if copious secretions
Bathing/hygiene	• Frequent baths and linen changes if diaphoretic • Frequent mouth and lip care (every 2–4 hours) • Frequent eye care • Liberal use of moisturising creams and lotions for dry skin • Moisture-barrier skin preparations for incontinent individuals
Physical mobility	• Assist the person out of bed periodically, if able • Regularly change the person's position • Support the person's position with pillows, blanket rolls or towels as needed • Elevate the person's legs when sitting up • Implement a pressure injury prevention program and use pressure-relieving surfaces as indicated
Nutrition/fluid status	• Anti-emetics as required • Encourage liquid foods as tolerated • Consider need for subcutaneous fluid order if person is no longer able to consume fluids
Constipation	• Stool softeners or laxatives as needed
Urinary elimination	• Bedpan, urinal or commode chair within easy reach • Buzzer within reach for assistance onto bedpan or commode • Continence pad in situ for person who is incontinent • Skin care in response to incontinence of urine or faeces • Linen changed as often as needed • Keep room as clean and odour-free as possible

Sensory/perceptual changes	• Check preference for light or dark room • Hearing is not diminished; speak clearly and do not whisper • If required, orientate person to who you are, where they are and why they are in hospital • Touch is diminished but individual will feel pressure of touch • Implement pain management protocol if indicated

iii. Providing spiritual support

Spiritual support is of great importance in dealing with death.

Although not all people identify with a specific religious faith or belief, most have a need for meaning in their lives, particularly as they experience a terminal illness. The nurse has a responsibility to ensure that the individual's spiritual needs are attended to, either through direct intervention or by arranging access to individuals who can provide spiritual care.

Specific interventions may include facilitating expressions of feeling, prayer, meditation, reading and discussion with appropriate clergy or a spiritual advisor. It is important for nurses to establish an effective interdisciplinary relationship with spiritual support specialists

iv. Supporting the family

The most important aspects of providing support to the family members of a dying individual involve using therapeutic communication to facilitate their expression of feelings. When nothing can reverse the inevitable dying process, the nurse can provide an empathetic and caring presence. The nurse also serves as a teacher, explaining what is happening and what the family can expect. Due to the stress of moving through the grieving process, family members may not absorb what they are told and may need to have information repeated. The nurse must have a calm and patient demeanor.

Family members should be encouraged to participate in the physical care of the dying person as much as they wish to and are able. The nurse can suggest the family assist with bathing, speak or read to the person and hold their hand. The nurse must not, however, have specific expectations of family members' participation. Those who feel unable to care for or be with the dying person also require support from the nurse and from other family members. They should be shown to an appropriate waiting area if they wish to remain nearby.

e. Evaluating

To evaluate the achievement of the goals of the dying person, the nurse collects data in accordance with the desired outcomes established in the planning phase. Evaluation activities may include the following:

- Listening to the individual's reports of feeling in control of the environment surrounding death, such as control over pain relief, visitation of family and support people, or treatment plans.
- Observing the individual's relationship with significant others
- Listening to the individual's thoughts and feelings related to hopelessness or powerlessness.

Self-assessment 8.12

1) Which criteria should generally support the diagnosis of dying?
2) List the 5 stages which precede dying according to Kübler-Ross?
3) Briefly explain 3 phases of dying process
4) What are the major responsibility and specific responsibilities of nurse while caring a dying patient?
5) Outline three nursing diagnoses which can be formulated while caring a dying patient

8.13. Death and post mortem care

Learning activity 8.13

Ms. G is a female with 23 years old hospitalized in hospice setting since 6 months ago due to metastatic uterine cancer. Today in morning when a nurse is coming to do morning assessment, she found the following signs: Ms.G was too cold, the neck is stiff, and the orbits of the eyes are fixed (do not move), she doesn't do any body movement. The nurse monitors vital signs, she doesn't find any values of results (the all vital signs are not marked). Family members of Ms. G are crying, but the surround population doesn't know what happen

1) What do you think was happened to Ms.G?
2) What do you think could be the nursing management to Mr. G

8.13.1.Death

a. Definitions and signs of death

Death is defined as a state of the total disappearance of life or irreversible cessation of the functions of organs that are necessary for life including heart, lungs and brain.

In modern medicine death is indicated by the flat line in the record of electroencephalography (EEG) or lack of brain function, however traditional clinical signs of death are cessation of the apical pulse, respirations, and blood pressure which is referred to as **heart-lung death.**

When patient is on assisting equipment of respiration and blood pressure death acknowledgement is difficult but can be indicated by **total lack of response to external stimuli, no muscular movement especially breathing, no reflexes and flat encephalogram (brain waves).**

Cerebral death or higher brain death occurs when the higher brain center, the cerebral cortex, is irreversibly destroyed. In this case, there is “a clinical syndrome characterized by the permanent loss of cerebral and brainstem function, manifested by absence of responsiveness to external stimuli, absence of cephalic reflexes, and apnea.

b. Body status after death

After death, the body undergoes many physical changes, including Algor mortis, Livor mortis and Rigor mortis..

Algor mortis is the gradual decrease of the body’s temperature after death. When blood circulation terminates and the hypothalamus ceases to function, body temperature falls about 1°C per hour until it reaches room temperature. Simultaneously, the skin loses its elasticity and can easily be broken when removing dressings and adhesive tape.

Livor mortis is characterized by cease of blood circulation, the red blood cells break down, releasing hemoglobin, which discolors the surrounding tissue.

Rigor mortis is the stiffening of the body that occurs about 2 to 4 hours after death. It results from a lack of adenosine triphosphate (ATP), which causes the muscles to contract, which in turn immobilizes the joints. Rigor mortis starts in the involuntary muscles (heart, bladder and so on), then progresses to the head, neck and trunk, and finally reaches the extremities.

8.13.2. Post mortem care

Nurses are responsible for care of a body after death. Postmortem care should be carried out according to the policy of the hospital or organization. Because care of the body may be influenced by religious law, the nurse should check the deceased’s religion and make every attempt to comply. If the deceased’s family or friends wish

to view the body, it is important to make the environment as clean and pleasant as possible and to make the body appear natural and comfortable.

Postmortem care should be provided as soon as possible to prevent tissue damage or deformity. Post mortem care is defined as the care given once death has occurred through transfer to a funeral provider.

Because the deceased person's family often wants to view the body and because it is important that the deceased appear natural and comfortable, nurses need to position the body, place dentures in the mouth and close the eyes and mouth before rigor mortis sets in. Because of the reduction in body temperature and loss of skin tone (algor mortis) after death, it is important to gently remove all tape and dressings to prevent tissue damage.

The skin or body parts should never be pulled on. The head of the bed should be elevated and a clean pillow placed under the head immediately after death before beginning other activities in order to prevent purplish discoloration (livor mortis) of the face.

Tissues after death become soft and eventually liquefied by bacterial fermentation: the hotter the temperature, the more rapid the change. Therefore, bodies are often stored in cool places to delay this process. Embalming prevents the process through injection of chemicals into the body to destroy the bacteria.

8.13.3.Special consideration in end life and post mortem care

a. Pediatric considerations

Arrange for family members, especially parents, to be with the child throughout the dying process and at the time of death, if they wish. Allow family members to hold their child's body after death. Make every effort to honor family members' requests per the organization's practice. Family members of deceased newborns may want a memento of their infant (picture, article of clothing, footprint, or lock of hair).

b. Older adult considerations

It is important to consider that some older adults have small families and small circles of surviving friends. Health care team members may be the only human presence during death. Arrange for someone to be with the person when death is imminent.

c. Home care considerations

Consider the type of support family members need at the time of death and assist with arrangements. After death in the home setting, follow the organization's practice for body preparation and transfer and for disposal of durable medical equipment (e.g., tubing, needles, and syringes), soiled dressings or linens, and medications.

Instruct family members regarding safe and proper handling and disposal of medical waste.

Steps	Rationale
1. Preparation	
Provide privacy for the patient's body, if possible. If the patient has a roommate, explain the situation to the roommate and move him or her to a temporary location.	
2. Performance	
Materials preparation	
• PPE (gloves, gown, mask, eye protection) • Plastic bag for hazardous waste disposal • Washbasin • Washcloths • Warm water • Bath towel • Clean gown or disposable gown for body as indicated by the organization's practice • Shroud kit with name tags • Syringes for removing urinary catheter • Scissors • Small pillow or towel • Paper tape, gauze dressings • Paper bag, plastic bag, or other suitable receptacle for patient's belongings, to be • returned to family members • Valuables envelope • Gauze • Denture cup, if needed • Three death tags • Three large abdominal pads or incontinence pads or diaper • stretcher or morgue cart	
Perform hand hygiene and don gloves, gown, mask, and eye protection	
Verify the correct patient using two identifiers	

Explain the procedure to the family and ensure that they agree to treatment	
• Help family members notify others of the death. Per the organization's practice, notify the morgue or mortuary chosen by the family to transfer the patient's body. Discuss plans for postmortem care.	Following a death, grieving persons have difficulty focusing on details and may need guidance. Being informed increases their sense of control.
• If organs or tissue are being donated, follow the organization's practice for care of the body.	
• Identify and tag the patient's body, leaving the identification on the body per the organization's practice.	
• Assess the general condition of the body and note the presence of dressings, tubes, and medical equipment.	
• Do not remove indwelling devices when an autopsy is to be performed. Follow the organization's practice and family's cultural preferences (Box 1) regarding body preparation.	
• Disconnect and cap IV lines.	Removing IV catheters allows fluids to leak out. Mortuary personnel remove lines after embalming. Removal of tubes and lines is contraindicated if an autopsy is planned.
• Remove indwelling devices (e.g., urinary catheter, endotracheal tube), if appropriate per the organization's practice and circumstances.	
• If the patient has dentures that are not in his or her mouth, place them there. If the dentures do not stay securely in the mouth, place them in a labeled denture cup and ensure that they are transported with the patient's body to the mortuary.	Dentures give the face a more natural appearance. Jaw muscles relax after death, making it difficult to keep dentures in place. Mortuary personnel remove dentures to clean and seal the mouth.
• If culturally appropriate, use a rolled-up towel under the chin to close the patient's mouth	Positioning the mouth in a closed position may be less disturbing to family members

• Place a small pillow under the patient's head or position it according to cultural preferences.	
• Follow the organization's practice regarding securing the hands and feet. Use only circular gauze bandaging on the body. Position the hands in an elevated position on the abdomen	Some organizations require securing appendages to prevent tissue damage when the patient's body is moved. Accumulation of fluid called hypostasis, is a normal post-mortem process caused by gravity. The condition is minimized if the affected body part is elevated.
• If culturally appropriate, close the patient's eyes by gently pulling the eyelids over the eyes.	For some, closed eyes convey a more peaceful and natural appearance, but some cultures prefer that the eyes remain open
• Shave male facial hair, unless doing so is prohibited by cultural practices or the patient wore a beard	The goals are to present the patient in his normal appearance and to honor cultural or religious preferences.
• Wash soiled body parts. If family members are assisting with washing the body and providing postmortem care, instruct them to don gowns and gloves for protection from body fluids.	Some cultural practices require that family members cleanse the patient's body.
• Remove soiled dressings and replace them with clean dressings, using paper tape or circular gauze bandaging.	Paper tape minimizes skin damage when tape is removed.
• Place an absorbent pad under the patient's buttocks.	Relaxation of the sphincter muscles at the time of death causes the release of urine and feces.
• Place a clean gown on the patient's body	
• Brush and comb the patient's hair. Remove any clips, hairpins, or rubber bands	Hard objects damage and discolor the face and scalp
• Identify which of the patient's belongings are to stay with his or her body and which are to be given to the family.	

• If the patient's family requests a viewing, prepare the patient's body and room in a culturally sensitive manner per the organization's practice	
• Place a clean sheet over the patient's body up to the chin with the arms outside the covers, if desirable.	The patient's body is covered to prevent exposure of body parts.
• Remove unneeded medical equipment from the room.	Removing medical equipment provides a more peaceful, natural setting.
• Provide soft lighting and chairs for the family.	
• Put a chair at the bedside for a family member who may collapse	
• Provide tissues and water for the family	
• Allow the family time alone with the patient's body.	
• Encourage the family to say good-bye with religious rituals and in their culturally accepted manner.	Compassionate care provides family members with a meaningful experience during the early phase of grief.
• Do not rush the grieving process. • Do not force family members to view the patient. • Remain accessible to address needs and answer questions.	
• After the viewing, remove linens and gown per the organization's practice	
• Place the patient's body in a shroud provided by the organization	
• Place an identification label on the outside of the shroud per the organization's practice	
• Follow the organization's practice for marking a body that poses an infectious risk to others.	Ensure that prompt transportation of the patient's body to the mortuary has been arranged. If a delay is anticipated in the transfer to mortuary care, transport the patient's body to the morgue.
3. Finishing	

• Discard supplies, remove personal protective equipment (PPE) and perform hand hygiene	
• Document the procedure in the patient's record	

Self-assessment 8.13

1) The loss of skin elasticity and change in body temperature which occurs after death is better referred as:

a. Algor mortis
b. Livor mortis
c. Rigor mortis

2) What is the main reason for storing the deceased body in cool place?
3) Differentiate heart-lung death from brain death
4) What should the nurse do as nursing care before rigor mortis develops?

8.14. Resilience and self-care

Learning activity 8.14

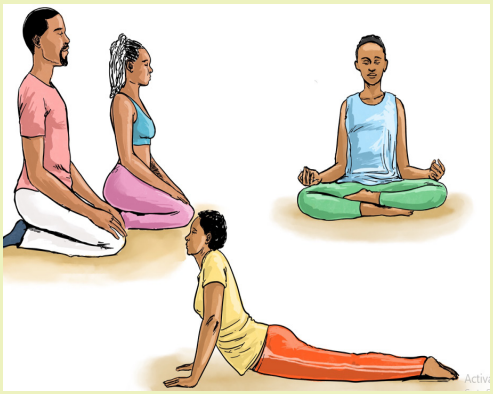
Observe the following images:



A



B



C



D



E

1) Discover the activities that are being done by the persons in images A, B, C, D and C presented above.

2) What could be the importance of those activities to human health?

8.14.1. Self-care

Self-care refers to activities and practices that we can engage in on a regular basis to reduce stress, maintain and enhance our short/long-term health and well-being. Self-care is necessary for your effectiveness and success in honoring your professional and personal commitments. Thus help to reduce stress, cope with the challenges of work, enhance subjective sense of well-being, and replenish energy levels.

A key point for supporting one's self-care lies in the **ability to identify and manage the general challenges that personnel face**, such as the potential for stress and burnout or interpersonal difficulties; **to be aware of your own personal vulnerabilities,** such as the potential for re-traumatization; and **as well as striving for balance in your life,** by maintaining and enhancing the attention you pay to the different domains of your life in a way that makes sense to you.

c. Strategies to support self-care

The following are some strategies/tips for taking care of your-self:

1. Physical self-care

Get enough sleep. Regularly do physical activity that you enjoy. Eat regularly, well-balanced meals. Reduce alcohol and caffeine consumption.

Access medical care when needed (both preventative and acute). Take time off when sick. Calm the body. Release tension in healthy ways. Practice healing through movement and music.

Take deep breaths. Limit or eliminate exposure to media. Balance work, play, and rest.

2. Emotional self-care

Know your vulnerabilities. Engage socially to avoid feeling isolated. Spend time with non-work friends, family and acquaintances. Set limits, if necessary, when others are too overwhelmed demanding of your time or energy (Give yourself time to heal and renew). Stay in contact with important people in your life.

Use relaxation skills that work best for you. Acknowledge when you have done well. Value yourself. Identify energizing /positive activities, people and places, and actively seek them out.

Reestablish a routine, if possible- allow your-self to cry or be upset. Find things that make you laugh. Express your opinion on social issues outside of work. Listen to music that soothes you.

3. Psychological self-care

Take time out (trips out of town, to the beach or a weekend away). Take time away from telephones, email, social media and the internet. Make time for self-reflection. Notice your inner dialogue (listen to your thoughts and feelings). Have your own personal development and/or external supervision.

4. Spiritual self-care

Do some forms of reflective practice (meditate, pray or reflect). Spend time in natural environments. Connect to a community or network with shared values. Be open to feeling inspiration, awe and other positive emotions. Nurture your optimism

and hope. Be open to not knowing. Identify what is meaningful to you and notice its place in your life. Contribute to causes in which you believe in outside of work.

5. Interpersonal self-care

Schedule regular time with significant others (e.g. partner, kids, friends, family). Stay in contact with friends and networks. Make time to reply to personal correspondence. Allow others to do things for you (meet new people; ask for help when you need it). Share your feelings: good, bad or other with someone you trust.

6. Self-care in personal settings

Effective self-care strategies used outside of the workplace settings included a range of health behaviors, including, meditation and spiritual practice, a healthy diet, adequate sleep, and moderation of alcohol intake were considered important.

In addition to exercising for fitness, other physical activities such as yoga and massage were found to be effective self-care strategies. Rest and relaxation at home in a bath were described as effective self-care strategies when feeling overwhelmed or needing to wash away thoughts of the workplace and socializing and maintaining positive relationships with friends and family, finding harmony between personal and professional roles was consistently described as an effective self-care strategy and establishing and maintaining boundaries between home and the workplace was considered an effective self-care strategy.

7. Self-care in workplace settings

Self-regulation of workload is important, but often difficult to achieve. It involves being assertive about one's capacity in relation to workload and wellbeing.

Take breaks during the work day for example during lunch or between meetings; taking meal breaks, taking recreation leave for regular holidays, and taking personal leave during illness were also considered effective self-care strategies. For some, choosing to work part-time was an effective self-care strategy that provided ongoing regulation of workload in relation to other competing demands. Having a cohesive team was important and this contributed to a supportive working environment. Mindfulness exercises were an effective self-care strategy in the workplace, both in individual and group contexts. A sense of allowing oneself to be human, in the context of displaying emotion in the clinical setting, was also part of effective self-care practice.

Take time to chat with colleagues. Create uninterrupted time to complete tasks. Set boundaries with clients and colleagues. Balance your workload so that you are not overwhelmed. Arrange your work space so that it is comfortable and comforting.

B. Barriers to self-care

Multiple impediments to self-care were identified in the workplace including busyness. Workplace culture: in some workplace cultures there is a stigma associated with self-care, making it difficult for individuals to engage in self-care practice without feeling judged as being selfish. Bringing work home can be described as a barrier to self-care, and related to workplace culture and expectations. Self-worth was also discussed as a common concern for effective self-care, where self-criticism and a lack of self-worth undermined self-care as an important priority and lack of planning for self-care.

C. Factors facilitating Self-care

Several factors were described as facilitators of effective self-care including recognizing the importance of self-care. Some became conscious of this through previous experiences of illness or being unwell after having initially neglected self-care. Prioritizing self-care was an important enabler which correlated with noticeable benefits. Adopting a preventative approach to self-care was important, Positive workplace cultures supportive of self-care were described as vital to effective self-care practice. Leadership and positive role models were considered key enablers to effective self-care. This also related to the allocation of reasonable workloads.

Other facilitators of effective self-care were more intrapersonal. These included having a positive outlook, self-awareness and positive emotions. Self-awareness was described as central to effective self-care practice. Gratitude and taking a positive perspective, even in the face of negative circumstances enable self-care. Self-compassion was considered essential to self-care, and relational to compassion for others.

Authenticity and courage were also described as self-care enablers. These encompassed self-advocacy and self-acceptance – in terms of being realistic about limitations; and being, in the words of one participant, authentically human.

8.14.2. Resilience

Resilience has been defined by the American Psychological Association as the human ability to adapt in the face of tragedy, trauma, adversity, hardship, and ongoing significant life stressors. Resilience is the ability to cope under pressure and recover from difficulties. A person who has good resilience copes well under pressure and can bounce back more quickly than someone whose resilience is less developed.

a. Behaviors associated with resilience

A person who has a good resilience exhibit understanding and valuing the meaning of what he/she do, greeting new situations, people and demands with a positive attitude. He/ she is doing what you can to get on with other people, taking a problem

-solving approach to difficulty, keeping a sense of perspective when things go wrong. Furthermore, he is being flexible and willing to adapt to change, drawing on a range of strategies to cope with pressure, recognizing your thoughts and emotions, and managing them, asking for help when you need it.

Several **attributes are common in resilient people:** Resilient people have a positive image of the future. That is, they maintain a positive outlook, and envision brighter days ahead. Resilient people have solid goals, and a desire to achieve those goals. Resilient people are empathetic and compassionate; however, they don't waste time worrying what others think of them. They maintain healthy relationships, but don't bow to peer pressure. Resilient people never think of themselves as victims – they focus their time and energy on changing the things that they have control over.

How we view adversity and stress strongly affects how we succeed, and this is one of the most important reasons that having a resilient mindset is so important. The fact is that we're going to fail from time to time: it's an inevitable part of living that we make mistakes and occasionally fall flat on our faces.

b. Signs of Resilience

Based on years of research into those who tend to be more resilient after hardship, these six abilities represent some of the core skills in bouncing back:

- Ability to think clearly and flexibly in changing and challenging situations
- Ability to regulate one's emotions (including stress) and remain emotionally composed
- Ability to problem-solve, make sensible decisions and mobilize the right resources that we need
- Ability to maintain positive connections and relationships with others who support us
- Ability to maintain self-belief and persist in the face of challenging circumstances (also called grit; ability to face up and continue after a set-back; a positive sense of one's ability to manage things)
- Ability to maintain a state of wellbeing where we feel well fit and energized enough to tackle life's demands (including the demands of work, study, and home-life and balancing all of our chosen activities/priorities)

c. factors that build resilience

Factors influencing resilience include personality, past experience, current circumstances and the people around. Other factors contributing to resilience include having the capacity to make realistic plans, setting goals and taking steps to carry them out – no matter how small. Resilience is as well influenced by the capacity to be connected with others and staying social. This is important to have caring and supportive relationships within and outside the work, family, and in the

community. Resilience is moreover influenced by ability to have a sense of purpose in life. Resilient people should be physically stronger. They should monitor their selves and have mindfulness and the capacity to manage effectively their strong feelings and impulses in a healthy manner. To be resilient you should focus on learning and have good communication skills and confidence in your strengths and abilities.

d. Importance of resilience

Being resilient will help to manage stressful situations, protect from mental illness and improve health and wellbeing. At work, this ensures that you can continue to do your job well, and deliver high quality care and support. It can also support in personal life.

e. Tips of resilience

Tip 1 Focus: Don't try and do everything. Focus on your priorities. Go back to your assessments and tools and see what you could be doing at this point.

Tip 2: Find a change partner: Find a colleague you can bounce ideas off inside or outside your organization. Most people will provide a sounding board to help you work through an issue or change. It's ok to talk about your fears – it helps reduce them.

Tip 3: Know what helps you: You should be aware of what helps you manage your stress or bring you back to ground or centre. Release the negative self-talk around making time to decompress. Tip 4: Pragmatist or perfectionist: Sometimes we care too much and expect too much. Beware of your inner perfectionist and what purpose it serves. A perfect solution is often not possible. Focus on what you can actually achieve.

Tip 5: Keep your perspective: We need to live to fight another day - in the end; some changes are just not going to go well. Do your best and take care of yourself - both mentally and physically. Take time out to rest and refresh over the break. Set your work or life boundaries.

f. Pathways to building resilience

Self-care practices help us to build resilience. Even by choosing to put in place some simple and reliable activities such as exercise, hobbies and catching up with friends, we're making a real difference to our minds and bodies – releasing happy hormones, reducing stress and building healthy self-belief and habits that can support us when the 'chips are down'. Choose self-care activities and routines that include and build on these things:

i. Wellbeing

Maintain basic health: healthy lifestyle routines such as exercise, good nutrition, sleep and recreation. Practice self-reflection: regularly take time to think and identify

what you honestly need in order to thrive. Choose your attitude: adopt a deliberate and constructive attitude toward life and life's challenges. Connect to positives: recall and reconnect to your values, accomplishments and sources of gratitude/joy. Flex your strengths: identify your strengths and use these more in work and life; engage in interests/hobbies. Purposeful activity: do things that provide a sense of purpose, connection and meaning in your life.

ii. Stress management

Social support: spend quality time talking with mates, family and others who can support you when needed. Recognize stress: acknowledge that stress is normal and know your early signs of stress (checklists, feelings). Regulate stress: develop ways to relax and calm yourself on cue, e.g. relaxation exercises, positive thinking. Problem-solve: adopt a problem-solving approach to life's hassles – create a written action plan with options. Manage energy: work around your energy cycle (dips and peaks); use breaks and healthy energizer activities.

iii. Grit

Develop self-belief: focus on what you can do; visualize success; rehearse your approach; give things a go. Reframe perspective: be realistic, identify and 'reframe' crooked/unhelpful thinking – review your thoughts. Bounce back: (growth mindset) be open to feedback, learn from mistakes and try again; revise your approach. Practice Grit: one mental toughness training activity is to persist longer with uncomfortable or boring tasks. Develop mindfulness: the ability to pay calm attention, on purpose in the present moment, non-judgmentally.

Professional help and coaching are good ways to proactively build self-care and resilience, by developing a personalized plan, around the barriers and towards one's objectives. Remember that resilience levels change over time and require active maintenance. You can be hassled or stressed– even if you're normally resilient and unbothered by things. In this way we caution that having some 'resilience' is not enough on its own to cope with some very significant events. In these cases, other tools, actions and help will fill the gap.

Self-assessment 8.14

1) Differentiate self-care from resilience
2) Discuss the strategies for physical and psychological self-care
3) Discuss the factors that build up resilience

8.15. Practice (return demonstration) of post mortem nursing procedures in skills lab

Learning activity 8.15

This activity should be done by associate nurse learners in simulation laboratory, under the following instructions:

1) Identify the materials/equipment required for post mortem nursing care
2) Use the following check list and practice post –mortem nursing skills

Table 8.15 1 Check list for practicing post mortem nursing technique

Steps	Scoring	
	Well done = 1	Not done = 0
Ensure privacy		
Perform hand hygiene and don PPE (gloves, gown, mask, and eye protection).		
Explain the procedure to the family and ensure that they agree to care.		
Raise the head of the bed slightly, between 20 and 30 degrees and head on the pillow to prevent discoloration of the face from pooling of blood.		
Gently close the eyelids and mouth. Place a rolled washcloth or small towel underneath the chin if needed to hold the mouth closed.		
Remove all tubing, such as oxygen, Foley catheter, drains, and nasogastric tube. Remove IV line and apply a bandage to prevent leakage. Apply clean dressings.		
Clean the body with using soap, water, and washcloths to remove all body fluids, including blood, emesis, drainage, urine, or feces and keep it in clean, dry linen.		
Place a disposable pad (diaper) under the hips to absorb any further drainage before family seeing the body		
Remove soiled dressings and replace them with clean dressings, using paper tape or circular gauze bandaging.		
Apply a clean gown and linens as needed.		

Place the hands across the deceased's chest to prevent discoloration due to pooling blood.		
Brush and comb the patient's hair. Remove any clips, hairpins, or rubber bands.		
Put a chair at the bedside for a family member who may collapse.		
Allow the family to view the deceased patient and to stay as long as they desire.		
After the viewing, remove linens and gown per the organization's practice.		
Place the patient's body in a shroud (blankets) provided by the organization. Place an identification label on the outside of the shroud per the organization's practice.		
When the family leaves, phone the mortuary if the body is to be transported to an independent mortuary.		
Identify and label the patient body.		
Identify which of the patient's belongings are to stay with his or her body and which are to be given to the family.		
If using shroud: Place the body in supine position on a flat shroud or sheet. Fold the top and bottom ends of the shroud over the deceased's head and feet. Wrap the two sides of shroud or sheet around the body. Secure the shroud or sheet in place with straps placed around the chest, waist, and ankles. Apply a second identification tag to the shroud. If no shroud: Cover the body with a clean flat sheet to wait for the mortician.		
Transport the body via gurney to the hospital morgue unless the mortician comes to the room to pick up the body.		
Discard supplies, remove personal protective equipment (PPE) and perform hand hygiene.		
A family member should take all the patient's personal belongings.		
Document the procedure in the patient's record.		

Self-assessment 8.15

In simulation laboratory use the check list presented above and score yourself after practicing post mortem care

End unit assessment 8

This end unit assessment 8 includes theoretical assessment of knowledge acquired evaluation of practical skills which involves the organization of Objective Structured Clinical Evaluation (OSCE) in skills laboratory.

Theoretical questions

1) Explain any 10 principles of palliative care
2) Explain the components of palliative care
3) Explain the importance of psychosocial support
4) Explain any 5 methods/techniques of non-pharmacological pain management in palliative care
5) Explain ethical aspects in palliative care
6) Explain the strategies of communication in palliative care
7) Explain any 6 strategies for self-care
8) Explain any 5 ways of building up resilience

Objective Structure Clinical Evaluation in skills laboratory

After you have practiced palliative care skills, the OSCE in simulation lab should be organized on the following nursing care: nursing care to the dying patient and post mortem nursing technique.

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