Health Extension service

Level-III

Learning Guide-16

Unit of Competence	**Promote and Implement Hygiene and Environmental health**
Module Title	**Promoting and Implementing Hygiene and Environmental health**
LG Code:	**HLTHES3 M05 LO1-LG-16**
TTLM Code	**HLTHES3 MO5 TTLM 0919v1**

LO 1: Promote and provide environmental and personal hygiene education

Instruction Sheet #1	Learning Guide #16

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

- Promoting concepts and Principles of Hygiene and Environmental Health.
- Providing Personal Hygiene
- Promoting Environmental Health Hazards
- Planning in personal hygiene and environmental health
- Promoting Healthful Housing
- Promoting Institutional Hygiene and sanitation
- Compiling and submitting Reports
- Monitoring environmental health activities

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, **upon completion of this Learning Guide, you will be able to**:

- Promote concepts and Principles of Hygiene and Environmental Health.
- Provide Personal Hygiene
- Promote Environmental Health Hazards
- Plan in personal hygiene and environmental health hazards
- Promote Healthful Housing
- Promote Institutional Hygiene and sanitation
- Compile and submit reports
- Monitoring environmental health activities

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 6.
3. Read the information written in the information “Sheet 1, Sheet 2, Sheet 3 and Sheet 4”.
4. Accomplish the “Self-check 1, Self-check t 2, Self-check 3 and Self-check 4” **in page -6, 9, 12 and 14** respectively.
5. If you Learned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1, Operation Sheet 2 and Operation Sheet 3 ” **in page**
6. Do the “LAP test” **in page – 16** (if you are ready).

Information Sheet-1	Promoting concepts and Principles of Hygiene and Environmental Health.

1.1 Principles and concepts of Hygiene and Environmental Health

1.1.1 Definition of terms

- **Hygiene: -** Refers to the set of practices associated with the preservation of health and healthy living.
  - ✓ The focus is mainly on personal hygiene that looks at cleanliness of the hair, body, hands, fingers, feet, clothing, and menstrual hygiene.
  - ✓ Improvements in personal knowledge, skill and practice that modify an individual's behavior towards healthy practice are the focus of hygiene promotion.
- **Sanitation:-**Means the prevention of human contact with wastes, for hygienic purposes.
  - ✓ It also means promoting health through the prevention of human contact with the hazards associated with the lack of healthy food, clean water, healthful housing, the control of vectors (living organisms that transmit diseases), and a clean environment.
  - ✓ It focuses on management of waste produced by human activities.
- There **are different types of sanitation relating to particular situations, such as:**
  - ✓ **Basic sanitation**: refers to the management of human faeces at the household level. It means access to a toilet or latrine.
  - ✓ **Onsite sanitation**: the collection and treatment of waste at the place where it is deposited.
  - ✓ **Food sanitation**: refers to the hygienic measures for ensuring food safety.
  - ✓ **Food hygiene is similar to food sanitation**. . Housing sanitation: refers to safeguarding the home environment (the dwelling and its immediate environment).
  - ✓ **Environmental sanitation**: the control of environmental factors that form links in disease transmission. This category includes solid waste management, water and wastewater treatment, industrial waste treatment and noise and pollution control. .
  - ✓ **Ecological sanitation**: the concept of recycling the nutrients from human and animal wastes to the environment.
- **Environment:-**Is the sum of all external influences and conditions which effect/affect/ health, life, and growth.
- **Environmental health:-E**nvironmental health is broader than hygiene and sanitation; it encompasses hygiene, sanitation and many other aspects of the environment such as global warming, climate change, radiation, gene technology, flooding and natural disasters.
  - ✓ The **World Health Organization's** definition is Environmental health addresses all the physical, chemical, and biological factors external to a person, and all the related factors impacting behaviors. It encompasses the assessment and control of those environmental factors that can potentially affect health.

1.1.2. Concepts and Principles of Hygiene and Environmental Health

The diarrhea transmission represents a good way to understand the pathways of disease through the environment and how environmental health and hygiene can help to prevent disease transmission. Human excreta always contain large numbers of germs, some of which may cause diarrhea. When people become infected with diseases such as cholera, typhoid and hepatitis A, their excreta will contain large amounts of the germs which cause the disease.

- **Illustrates the specific transmission pathways along with water; sanitation and hygiene minimize faeco-orally transmitted disease:-**
  - ✓ **On the left** are human faeces, representing the source of diarrhea. The infectious agent or disease agent is actively discharged by a patient or carrier of the disease.
  - ✓ **On the right**, there is a host who is a person that could be affected by the disease.
  - ✓ **Between the two,** there is the part of the environment that links the two, in other words, the pathway that the disease transmission agents travel between the source and the host.

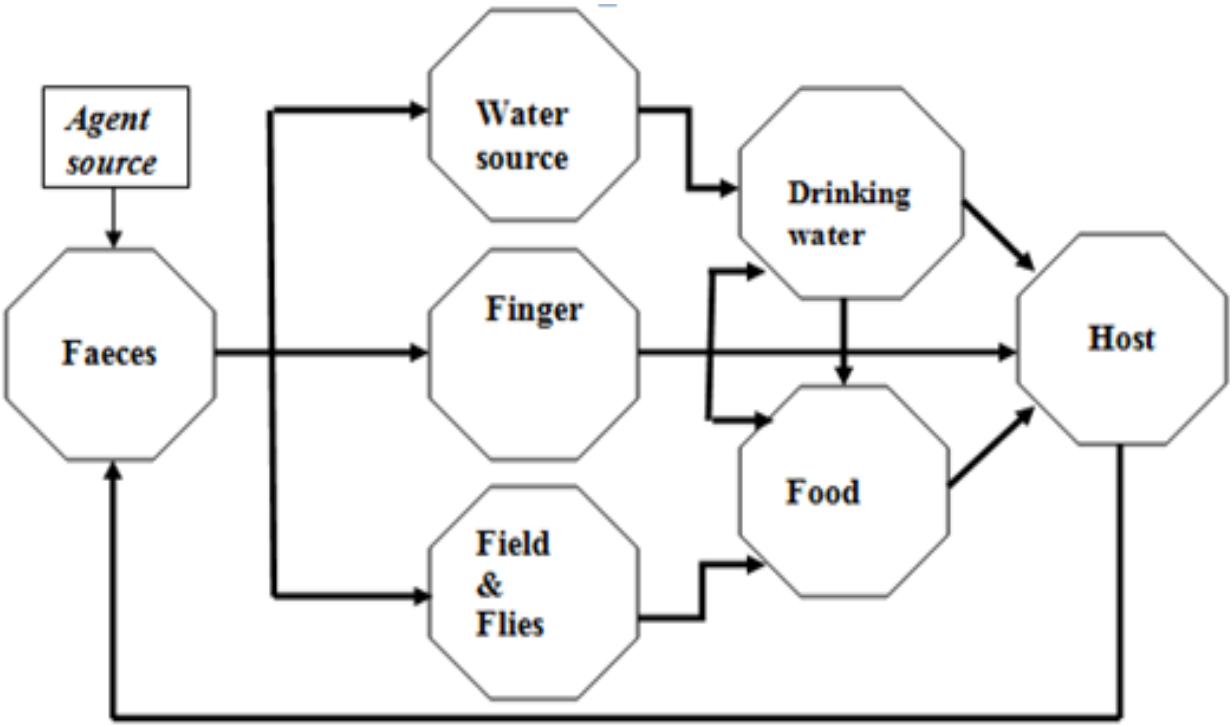

Figure 1.1(a):- Faeco-oral contamination: arrows represent transmission routes for pathogens

- **Interventions act to minimize or to control the disease transmission pathways:-**

Scenario 1: Improved sanitation aims **(intervention at source)** to break the cycle of disease transmission from faeces to the environment in the first round.

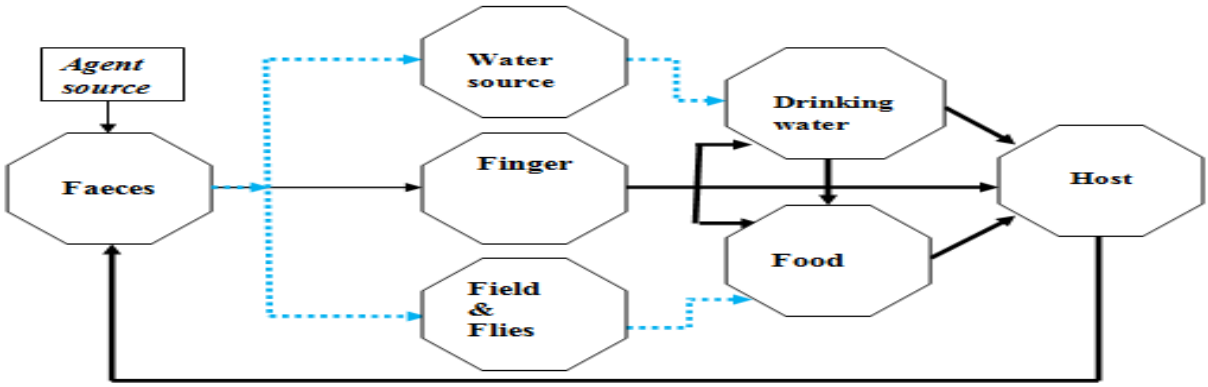

Figure 1.1: (b) Sanitation as barriers to transmissions

Scenario 2: Hygiene (**environmental)** interventions aim to break second round transmission routes.

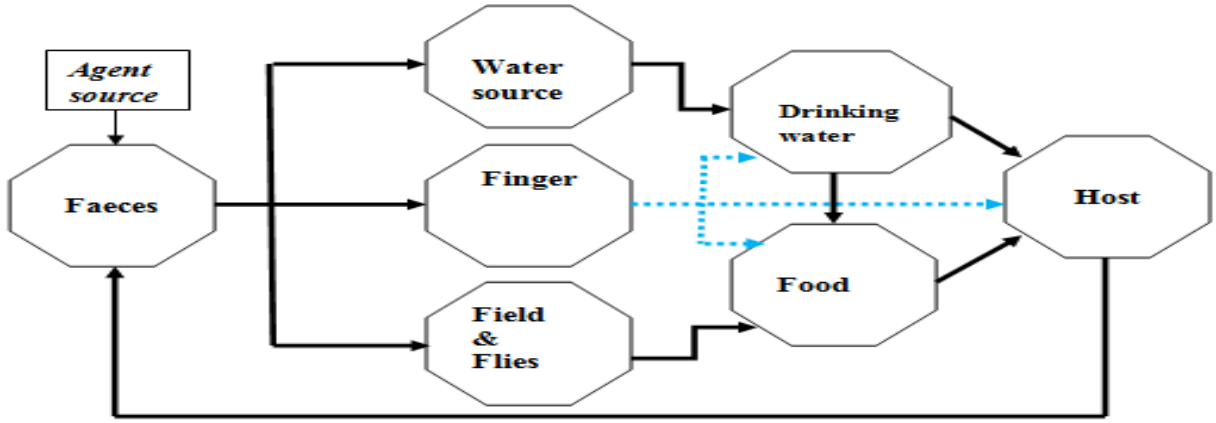

Figure 1.1: (c) Hygiene as barriers to transmission

Scenario 3: Water **(environmental)** interventions aim to break second round transmission routes.

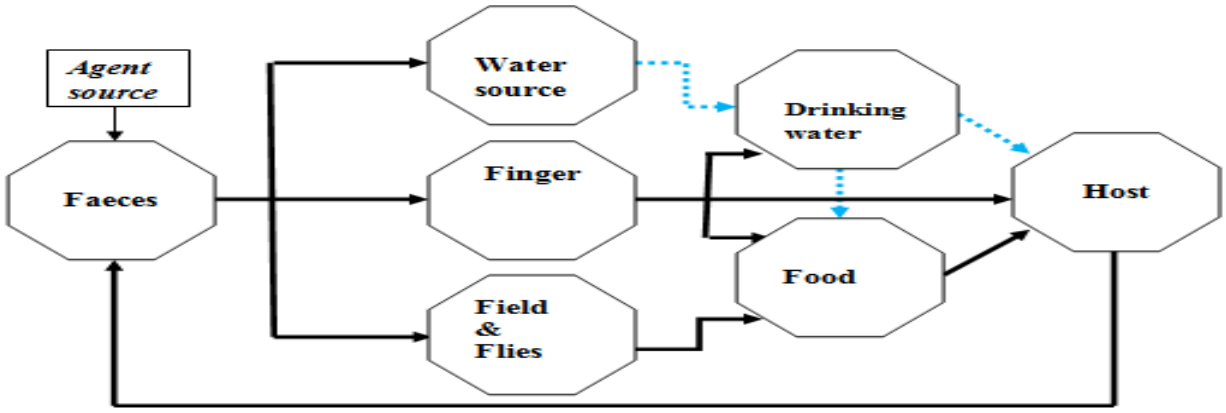

Figure 1.1: (d) Water treatments at source or point-of-use as a barrier to transmission

- **From the above figure we can observe that the possible pathways of diarrhea are six =F's:-**
    1. **Faeces:** resulting from defecation
    2. **Fluids**: through contaminated water
    3. **Fingers:** contaminated fingers transmit diseases
    4. **Flies:** all sorts of animals such as flies can carry and transmit diseases
    5. **Fomites or fields**: fomites are inanimate objects that carry the infectious agent (e.g. dishes, cups and other contaminated surfaces in contact with food or water)
    6. **Food:** infected by fluids, flies, fingers or fomites and then eaten.

1.1.3 Components of Environmental Health

- **Environmental health and hygiene that will be importance to public health worker and it has the following components:**

1. **Personal hygiene**: Hygiene of human body and clothing.
2. **Water supply:** Adequacy(quantity), safety, quality/ (chemical, bacteriological, physical) of water for domestic /cleaning and cooking/, drinking and recreational use
3. **Human waste disposal:** Proper excreta disposal and liquid waste management
4. **Solid waste management**: Proper application of storage, collection, disposal of waste. Waste production and recycling
5. **Vector control**: Control of rodents (vertebrate such as rats) and arthropods (invertebrate insects such as flies and other creatures such as mites) that transmit disease
6. **Food hygiene:** Food safety and wholesomeness in its production, storage, preparation, distribution and sale, until consumption
7. **Healthful housing:** Physiological needs, protection against disease and accidents, psychological and social comforts in residential and recreational areas
8. **Institutional health:** Communal hygiene and sanitation in schools, prisons, health facilities, refugee camps, public offices ,religious areas and settlement areas
9. **Air pollution**: Sources, characteristics, impact and mitigation both at in-door and outdoor .
10. **Occupational health:** Hygiene and safety in the workplace

Figure 1.2: Illustrates components of hygiene and environmental health

1.1.4 Role of Environmental Health in Public Health

- Environmental health is a part of public health where the primary goal is preventing disease and promoting people's health. Environmental health is associated with recognizing, assessing, understanding and controlling the impacts of pollutants and contaminants on the people as well as on their environment.

- **The role of the environmental health worker, therefore, includes the following functions of public health:**
  a) Improving human health and protecting it from environmental hazards.
  b) Developing liaison between the community and the local authority, and between the local and higher levels of administration.
  c) Acting independently to provide advice on environmental health matters; designing and developing plans of action for environmental health.
  d) Initiating and implementing health/hygiene, sanitation and environmental programmes to promote understanding of environmental health principles.
  e) Enforcing environmental legislation.
  f) Monitoring and evaluating environmental health activities, programmes and projects.
- **Environmental health Intervention Models**
  - According to the Federal Ministry of Health, more than 80% of communicable diseases in Ethiopia are believed to be preventable using environmental health interventions.
- **Generally, there are two intervention models:**
  1. **The clinical intervention model:-** which looks at treating the sick person.
  2. **The public health model: -** including environmental health, which looks at how to stop people getting sick in the first place by providing a healthy environment.

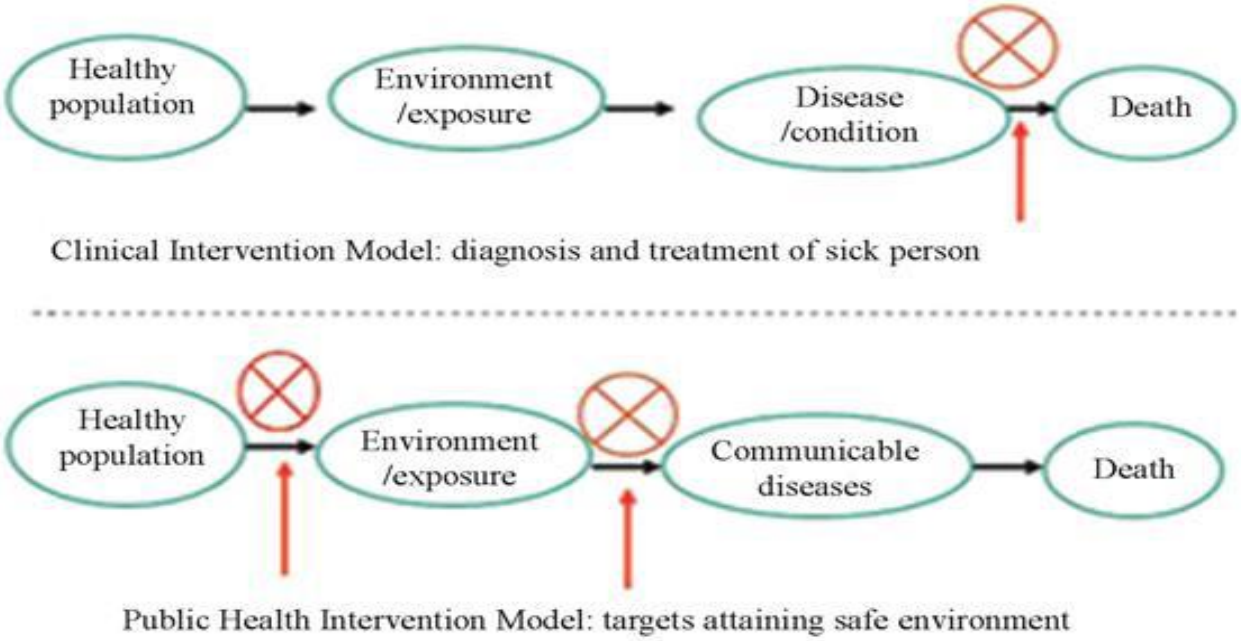

Figure 1.3: Health intervention models for the prevention and control of communicable diseases.

Self-Check -1	Written Test

I. Choose the correct answer from the given alternatives

1. From the sanitation types one refers to the management of human faeces at the household level.
   A) Basic sanitation **B)** Onsite sanitation **C)** Food sanitation **D)** housing sanitation

2. The Environmental intervention models, which looks at treating the sick person is
   A) The public health model **B)** The clinical model **C)** ALL **D)** None

3. The set of practice associated with prevention of diseases and preservation of health.
   A) Sanitation **B)** Environment **C)** Hygiene **D)** Health housing

4. The removal of both dirt and microorganism from individual.
   A) Cleanliness **B)** personal hygiene **C)** Air hygiene **D)** None

Note: Satisfactory rating - 4 points unsatisfactory below-4 points

You can ask you teacher for the copy of the correct answers

Answer Sheet

Score _____

Rating _____

Name: _____ Date: _____

Short Answer Question

1._____

2._____

3. ----------

4. ----------

Information Sheet-2	Providing Personal Hygiene

1.2. Personal Hygiene

1.2.1 Definition of Personal Hygiene

Personal hygiene is a concept that is commonly used in medical and public health practices. It involves maintaining the cleanliness of our body and clothes. Practice of personal hygiene is employed to prevent or minimize the incidence and spread of communicable diseases (a mechanism used for breaking disease transmission cycle).

Personal hygiene is therefore, a measure taken at individual level to promote personal cleanliness so that transmission of diseases from source to susceptible hosts is prevented. Currently most of our health problems are occurred due to poor hygienic behavior. The benefits of safe water supply and sanitation efforts in a given community can easily be lost if the communities still carry on with the poor personal hygiene behavior. For example, a water source in a refugee settlement in Eastern Sudan was protected and tested as microbiologically safe. However, during transportation of water from the source to collection pots at home the quality has deteriorated by the time it was brought home. The same is true for foods that are brought to the market and finally to our home to prepare our breakfast, lunch or dinner. If community hygiene is not practiced during preparation, storage and service, the food can easily be contaminated and can cause food borne diseases. The water that we drink and the food we eat need to be kept in a sanitary condition and used hygienically.

Improvements in personal knowledge, skill and practice that modify an individual‘s behavior towards healthy practice are the focus of hygiene promotion. Safe hygiene practice includes a broad range of healthy behaviors, such as hand washing before food preparation and/or eating, after latrine visiting and after cleaning a child‘s bottom, and safe faeces disposal. When you carry out hygiene education and promotion the aim is to transfer knowledge and understanding of hygiene and associated health risks in order to help people change their behavior to use better hygiene practices.

1.2.2 Difference between Cleanliness and Hygiene

- The term cleanliness should not be used in place of hygiene.
  - **Cleaning** in many cases is removing dirt, wastes or unwanted things from the surface of objects using detergents and necessary equipment.
  - **Hygiene** practice focuses on the prevention of diseases through the use of cleaning as one of several inputs.
    - ✓ **Example:** A janitor cleans the floor of a health centre using detergent, mop and broom. She might also use chlorine solution to disinfect the floor. The cleaning process in this example is the removal of visible dirt by our necked eye, while the use of chlorine solution removes the invisible microorganisms.
    - ✓ Hygienic practice encompasses both cleaning for the removal of physically observable matters and the use of chlorine for the removal of microorganisms.

1.2.3 Public health Importance of Personal Hygiene

1. Preventing diseases transmission

- The fingers may get contaminated with one‘s own faeces, either directly or indirectly. Activities during defecation and child bottom-washing are additional opportunities for the contamination of the fingers that facilitate the transmission of faeco-orally diseases.

2. Aesthetic values

- A person with clean hands is proud while eating because they feel confident of preventing diseases. A teacher in a school is always happy to see their students with clean faces and eyes, and dressed in clean clothes. A mother is mentally satisfied to feed her infant with clean hands because she ensures the preservation of her child‘s health.

3. Social impact

- A person with poor personal hygiene might be isolated from friendship because telling the person about the situation might be sensitive and culturally difficult. The success of a job application or the chance of promotion could be affected by poor personal hygiene.

1.2.4 Components of Personal Hygiene

Keeping personal cleanliness costs very little when it is compared with its importance. In this case everybody can practice it at home with the available materials. Personal cleanliness includes; the hygiene of the hand, body, feet, tooth's, face, cloths, genital areas, and the like.

Figure 2.1: General body, face, and hand cleaning

1. Skin Hygiene

Sweat and oily secretion from the skin cause dust to stick on its surface. This clogs the skin pores and interferes with the natural function of the skin. Moreover, bacteria can readily breed on the surface of the skin to cause various disease and undesirable odor. Certain species of flies can deposit their eggs on clothes when left outside for drying and the larva will grow under human skin causing irritation.

If germs or parasites that settle on the skin as a result of poor personal hygiene produce a lesion, the barrier to protect delicate internal organs of the body is lost and infections such as scabies and ringworm are results of poor body hygiene.

Taking a bath or a shower using body soap at least weekly is very important to ensuring our body stays clean. Bathing can be every day or after periods of sweating or getting dirty. The genitals and the anal region need to be cleaned well because of the natural secretions of these areas.

Dry the body with a clean towel after thorough rinsing. Change into clean underwear after a bath. Changing sweat-soaked clothes after each bath is advised. Cleaning the ears after every bath is also necessary. Avoid sharing soaps and towels because of the danger of cross-infection.

Figure 2.2: Body washing

2. Oral Hygiene

- Our mouth is the area of the body most prone to collecting harmful bacteria and generating infections. Our mouth mechanically breaks food into pieces. This process leaves food particles that stick to the surface of our gums and teeth. Our mouth cavity is full of bacteria and is a good environment for bacterial growth. The decaying process quickly causes gum and tooth disease as well as bad breath.

- To prevent this undesirable situation, immediately after eating, the tooth should be rinse and brush your teeth with a fluoride-containing toothpaste twice a day before breakfast and before you go to bed or at least it is better advise to floss your teeth at least once a day, usually before you go to bed.

- The water used for rinsing the mouth can be clean water or water with a little salt dissolved in it. In situation where proper toothbrush is not available, traditional brushes such as twigs of selected trees can be effective substitutes particularly in rural settings if done carefully

Figure 2.3: Mouth cleaning

3. Hand Washing

- People should wash their hands before and after eating, after using the restroom/comfort room, or when their hands are visibly dirty/soiled (especially if contact with blood or bodily fluids has been made). Hand hygiene plays a critically important role in preventing this transmission.

1. Wash your hands and arms with soap and clean water.

2. Make sure to scrub in between your fingers.

3. If you have a brush, scrub your fingernails.

4. Rinse with clean running water.

5. Dry your hands in the air or use a clean towel. Do not touch anything until your hands are dry.

Figure 2.4 Hand washing procedure

- Hand washing facility can be made from locally available materials like clay pot and plastics by making hole and preparing stopper. Such hand washing facility can be hanged on outdoor, so that it will be easier for the family members to wash their hands and face after toilet visit, before and after meal or after contacting dirt material

Figure 2.5: Hand washing

- **A critical situation in everyday activity includes:**
    1. After using the toilet (or disposing of human or animal faeces)
    2. After changing a baby‘s diaper (bottom) and disposing of the faeces
    3. Before preparing and handling cooked/ready-to-eat food
    4. Before eating food or feeding children
    5. after interruption during food preparation
    6. After contact with contaminated surfaces (e.g. rubbish bins, cleaning cloths,)
    7. after handling pets and domestic animals
    8. After wiping or blowing the nose or sneezing into the hands (respiratory hygiene)

4 Face Hygiene (eye)

- Our face reveals our daily practice of personal hygiene. The most important area to keep clean is the eyes and nose.
- The eye discharges protective fluids that could dry and accumulate around the eye especially in the morning this organic substance can attract flies that carry trachoma and conjunctivitis.

- A person should wash their face every morning in order to remove all dirt that they have come in contact with during the course of the day. This will keep your face clean all day. Children are advised to wash their face frequently.

Figure 2.6:- Face washing

5. Fingernail and Toenail Hygiene (nail care)

- A nail is hard tissue that constantly grows. Long fingernails tend to accumulate or trap dirt on the underside. The dirt could be as a result of defecation or touching infected and contaminated surfaces. Keeping nails trimmed and in good shape weekly is important in maintaining good health.

6. Ear Hygiene

- Ear wax accumulates in the ear canal that leads from the outer ear to the ear drum. As the secretion comes out of the ear it collects dust particles from their Daily washing with soap and 29 | P a g e water is enough to keep the outer ear clean. Do not reach farther than you can with your little finger and other things into your ear for cleaning purposes might harm the ear.

7 Hair Hygiene (hair care)

- The scalp and hair should be kept clean by washing with soap and/or conditioner and warm water at intervals of a week.
- Poor hair hygiene could cause dandruff and skin infections such as Tineacapitis (korekor). Head hair is a good harbor for head lice and nits (eggs of head lice).
- Lack of sleep due to irritation caused by the parasites can also be a cause for irritation, inability to sleep and consequently poor health.

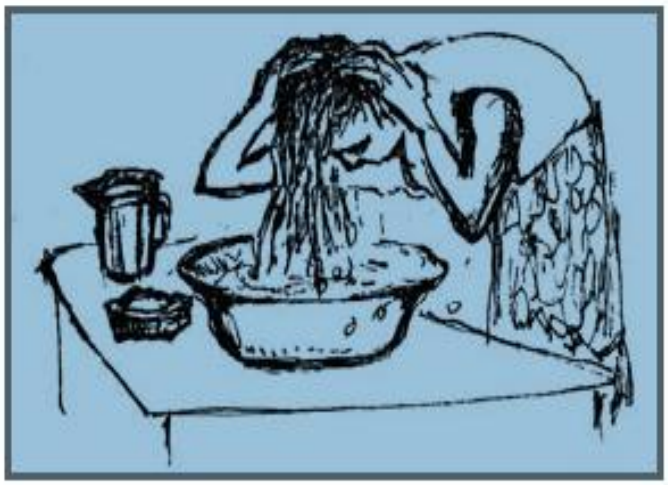

Figure 2.7: Hair cleaning

8 Foot Hygiene (foot care)

- Our feet sweat as we walk day and night and the sweat accumulates on all foot surfaces and between the toes. Sweating of the skin makes a good breeding site for spores of fungus infection called athlete‘s foot.
- When cleanliness of the toes is neglected, the bad odor generated has social consequences especially if you are working in an office with poor ventilation. The feet should be washed daily, or at least twice weekly.
- Foot hygiene is also important in the treatment of podoconiosis, sometimes known as mossy foot.
- It is a reaction in the body to very small soil particles that have passed through the skin of the feet. Podoconiosis can easily be prevented by wearing shoes at all times but, if someone is affected, careful washing and drying of the feet is an important part of the treatment.

9 Clothes Hygiene

- Clothes help to protect our body from cold and other conditions and to maintain warmth. We usually have two layers of clothing.
- The internal layer is underwear such as pants, vest and t shirt. These are right next to our skin and collect sweat and dead skin cells, which can stain the cloth. Underwear closes must be washed more frequently than the outer layer of clothing.
- Clothes that are not clean contribute to the multiplication of pests and the spread of pest borne diseases. Washing of dirty clothes requires adequate clean water, detergents (ENDOD‘) and washing facilities.
- Dressing clean clothes day and night is mandatory for better health. The sweat that comes from our body as dirt during activities accumulates on the body.
- Not hygienic close causes typhus, relapsing fever, bad smell, ulceration, etc. Therefore, keeping our clothes clean as we keep our body is very important.

- Frequency close changing mainly depends on the intensity of dirt on the clothes, and that depends on the climate and type of activity. However, it is advisable that the frequency of changing is to be twice a week for internal wear and one time per week for outerwear.

Figure 2.7: Washing clothes in rural areas

10. Menstrual Hygiene

- Shaving of pubic hair is one of the main important parts for the genital hygiene. It helps to avoid the harborage of pests and make cleaning of the genital organ easier. Cleaning of genital areas can be done during general body cleaning or taking shower. But there are conditions where someone need specifically do cleaning of genital areas.

- **These are:**
  - **Before and after sexual intercourse**: this will keep the genital area clean and help to avoid from having bad smell.
  - **Ejaculation:** Sometimes men can ejaculate while they are sleeping. In this case it is important to wash it.
  - **During menstruation period**: females need to clean the genital area frequently during this period. Clean and soft cloths can be used in place of sanitary lady pads and it should be changed at four hours interval. Menstrual blood-absorbing items must be properly disposed of in a burial pit or other appropriate method.
  - **Before and after delivery**: Frequent cleaning of the genital organ before birth will give comfortable condition for the person in charge to deliver the mother. In addition, this helps to prevent the child from getting HIV infection. Since there is high fluid discharge frequent cleaning and caring after delivery helps the mother from developing offensive smell and probably infection.

Self check #2	Written test

I. Match the following question from column “B” to “A”

“A”	“B”
--------1. Eye hygiene	A. Diarrhea
--------2. Hair hygiene	B. Typhus
____ 3. Oral hygiene	C. Teeth decay
____ 4. Feet hygiene	D. Athlete‘s foot
____ 5. Hand hygiene	E. Trachoma
____ 6. Clothes hygiene	F. Tineacapitis

Note: Satisfactory rating 6 points unsatisfactory below 6 points

You can ask you teacher for the copy of the correct answers

Answer Sheet

Score _____

Rating _____

Name: _____ Date: _____

Short Answer Question

1._____

2._____

3. ----------

4. ----------

5._____

6._____

Information Sheet-3	Promoting Environmental Health Hazards

1.3. Environmental Health Hazards

1.3.1 Definition of Environmental Health Hazards

Environmental health safety is targeted towards preventing disease, creating health-supporting environments and encouraging positive human behaviors. Our environment consists of physical, chemical and biological factors and our relationship with our environment is always interactive. These interactions may expose us to environmental health hazards; that is any environmental factors that can cause injury, disease or death.

In this regard hazard and risk are different. A **Hazard** is something which is known to cause harm that is, a source of danger to health, while **Risk** is the chance or probability of the hazard occurring and the magnitude of the resulting effects (injury, disease or death). For example, if you climb a ladder you know there is a chance you could falloff and be injured, although it is unlikely. The ladder is the hazard and the chance of injury is the risk you take by climbing the ladder.

1.3.2 Categories of Environmental Health

1. Physical Hazards

- Physical hazards are those substances or conditions that threaten our physical safety. For example, Fires, explosive materials, temperature (hot or cold), noise, radiation, spills on floors and unguarded machines. Physical hazards also include ergonomic hazards which occur when the type of work, body position and working conditions put strain on your body. Short-term exposure in badly designed work may result in muscle fatigue or tiredness, but long-term exposure can result in serious long-term injuries of the musculo-skeletal system.

2. Biological Hazards

- Biological hazards are caused by pathogenic organisms or by products from an organism, which is harmful or potentially harmful to human beings. They include pathogenic bacteria, viruses and parasites, and also toxins (poisons) that are produced by organisms. Biological hazards are the cause of the majority of human diseases.
- **For example**, bacteria cause cholera, tuberculosis, leprosy, relapsing fever and many diarrhoeal diseases; viruses are responsible for hepatitis B and C, HIV, measles and polio; and there are many diseases caused by parasites. A parasite is any organism that lives on or in another organism, called the host, and causes damage, ill health or even death to the host. Some human parasites are external and live on the skin and hair, for example, mites that cause scabies. Internal parasites, living inside the body, include protozoa and helminths.
- Protozoan parasites are single-celled organisms that enter the body either by ingestion or via the bite of an infected insect. Malaria, sleeping sickness and leishmaniasis are examples of diseases caused by protozoan parasites introduced by insect bites; amoebic dysentery and giardiasis result from drinking or eating contaminated water or food.

- Helminths are parasitic worms that live inside the body. There are three main groups: tapeworms, roundworms and flukes. Tapeworms may be ingested with food, especially undercooked meat, or with water or soil contaminated with faeces.
- Roundworms, also called nematodes, are responsible for many different diseases including ascariasis, dracunculiasis, filariasis, hookworm, onchocerciasis (river blindness), trichinosis and trichuriasis. A type of fluke is the cause of schistosomiasis (bilharzias)
- Biological hazards arise from working with infected people, animals, or handling infectious waste and body fluids, as well as contact with unsafe water, food and waste. The hazards may occur in the home, at school or at working place.

3. Chemical Hazards

- Chemicals can be in the form of gases, solids or liquids states. Exposure to chemicals could cause acute health effects if taken in large quantities in a single dose; and chronic health effects if taken in small doses over an extended time.
- Detergents (powdered soap, bleaching powder), drugs and pesticides (DDT, Malathion, diazinon, Delta methrine) are chemical hazards that are commonly found in rural households. Incomplete burning of fuel releases carbon monoxide (CO) which is a chemical hazard. When breathed in, CO binds to the haemoglobin in our blood, reducing the uptake of oxygen; the cells of the body then suffer because they are not getting enough oxygen, this can result in severe sickness and even death.

4. Cultural/practice-related

- Hazards Culture is the knowledge, belief, value, art, law, morals, customs and habits that are acquired by people as members of society. It is also the common ways of life and set of thoughts and feelings shared by the members of a society.
- In general culture is both tangible and intangible resources of a community. Just as there are cultural practices that are good for health, such as breastfeeding a child, there are also cultural practices that adversely affect health and these can be considered to be cultural hazards.
- There are practices that are widely accepted and found in different areas of Ethiopia that can be hazards for health; the so called harmful traditional practices but not considered as culture.
- **For example**, the belief that evil spirits are the source of diseases, practices of storing drinking water uncovered, open defecation, not hand washing before meals and after latrine use. Hygiene and health promotion and community mobilisation are critical interventions that help improve practices that are not useful to the community.

5. Social Hazards

- Poverty and illiteracy are examples of social hazards. We know that poor and uneducated people get sick more frequently, compared to wealthier and more educated people. Alcoholism, obesity, smoking and drug abuse are also social hazards that affect our health.
- A person with such habits is, over time, degraded, not respected by society, physically and mentally dissatisfied, and ultimately is likely to suffer with chronic diseases such as lung and cardiovascular diseases.

1.3.3 Principles of Hazard Management

- Hazard management requires you to follow certain steps:

1. **Establish the context and identify the hazard:** to answer the following questions: What is the source of the hazard? Who is exposed? What are the pathways or activities that expose a person? What part of the environment is involved in the transfer of the hazard to humans?
2. **Hazard/risk analysis and evaluation:** Here you would analyse the risk and evaluate the potential of the hazard to cause damage to health. This step needs a deeper appraisal in collaboration with the Woreda health office, environmental health expert. The evaluation may require appropriate design, sampling and laboratory investigation.
3. **Communicate and consult:** When the hazards and risks have been determined, advice can be communicated on the interventions or control measures that are needed to control the hazard.
4. **Treat the hazard/risk:** The interventions or control measures are carried out by the person or people responsible for the hazard or risk.
5. **Monitoring and reviewing:** The implementation of interventions or control measures for the hazard must be followed up in order to determine whether they are successful.
6. **Record keeping:** Keeping records and reports on hazard management is always important. These records must contain the type of hazard, exposures and what control measures were taken

Self check #3	Written test

I. Match the following question from column “B” to “A”

“A”	“B”
--------1. Physical Hazards	A. carbon monoxide (CO)
--------2 Biological Hazard	B. Harmful traditional practices
____ 3. Chemical Hazards	C. Poverty
____ 4. Practice-related hazard	D. Noise
____ 5. Social Hazards	E. Pathogenic organisms

Note: Satisfactory rating 5 points unsatisfactory below 5 points

You can ask you teacher for the copy of the correct answers

Answer Sheet

Score _____

Rating _____

Name: _____ Date: _____

Short Answer Question

1._____

2._____

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Information Sheet-4	Planning in personal hygiene and environmental health hazards

1.4. Planning in personal hygiene and environmental health hazards

- Environmental health planning refers to a systematic process by which goals are established, facts are gathered and analyzed, alternative proposals and programmes are considered and compared, resources are measured, priorities are established, and strategies and activities are designed to meet the established goals or objectives within a specified period of time.

1.4.1. Gaps identification

- You can use various tools in order to identify these problems.

1. Environmental health survey:

- ✓ This is a systematic survey using questionnaire.
- ✓ The questionnaire contains basic indicators of environmental health such as latrine availability, source of drinking water, waste disposal systems, cleanliness of the community, etc.
- ✓ You will need to do some statistical analysis (proportions and averages) to refine basic indicators of environmental health for your local context. You must be careful when designing a survey as it requires time, expertise and resources.

a) Rapid/quick assessment:

- ✓ The usual method that helps you gains a quick overview of the range of problems.
- ✓ The usual data collection tools that you can use for this are focused or group discussion, physical observation with checklists and interviewing key people.

- Finally generates a list of problems.

a) Reviewing of secondary data from reports, registration books etc.

b) Focus group Discussion:

- ✓ Facilitating environmental and personal hygiene problems with selected community members.

1.4.2. Priority setting

- It is difficult to handle all identified problems due to resource and other limitations;
- Therefore you need to consider the following criteria:

1. Magnitude of the problem (i.e. does the problem affect large number of people?)
2. Severity of the problem (whether the problem is deadly or not?)
3. Feasibility (i.e. effectiveness, cost and social acceptability of intervention)
4. Community concern (i.e. does the problem community felt need?)
5. Government concern (i.e. it must be relevant with health policy)

1.4.3. Developing Intervention plan

- Designing a health survey will need collaboration with others but your input is valuable for structuring the questions so they relate to local knowledge, attitude and practice (abbreviated as KAP).

- Interviews with the respondents, group discussion and observations are all useful for exploring the practice of personal hygiene.
- From the results of the survey you should be able to identify the priorities and interventions for improving personal hygiene in your community.

▪ You can then design a plan of action knowing the key themes that need to be covered:

- ✓ Themes
- ✓ Objectives
- ✓ type of audience
- ✓ Teaching aid
- ✓ Place
- ✓ Date
- ✓ Responsible person

1.4.4 Identifying the audience

- There must be a good reason why you want to educate the community on personal hygiene.
- You should identify which group of people you want to target so that you can prepare appropriate health messages and teaching materials.
- School children, women, elders, adults, teenagers and patients seeking medical help are some groups that you might decide are priorities.

Figure 4.1: Children with hygiene education cards.

1.4.5 How to promote personal hygiene

- The most important point is that you must be prepared for the theme you want to cover.
- The preparation must focus on gaining detailed knowledge and adequate information on that theme. This requires reading materials, collecting appropriate teaching aids and knowing the audience (educational background, their needs, behavior, habits, etc.).
- Fixing the site, date and time is also important. You should identify the key messages you want to get across to your audience.

1.4.6 Implementing the plan

- Once the plan has been approved by the Kebele cabinet it can be implemented. Environmental health activities are put into practice on the ground at this stage.

1.4.7. Writing a planning report

- The recommended sub-titles are:
  1) Title of the plan
  2) Introduction or background
  3) Objectives
  4) Strategies and activities
  5) Indicators
  6) Resources (i.e. budget, human resource, and materials)
  7) Plan of action (i.e. activities by time and responsible person)

- You should prepare and present an annual plan of action for improvement of hygiene and environmental health to the kebele head.
- The plan of action needs careful consideration of your work in the kebele.
- The activities in the plan should include identifying problems, inspection services (households, food establishments, public utilities such as water sources, health facilities), hygiene promotion, monitoring selected indicators, sanitation promotion, training of local partners, sanitation campaigns and commemorating sanitation and water days.

1.4.8. Monitoring and evaluating the planned performance

- Daily, weekly or monthly monitoring will help you check the progress of the implementation, while evaluating performance at the end of the year is useful to help you see the overall progress

- Some of the methods evaluating described as follows.

1. The presence of hygienic hand washing procedures

   - ✓ You should look for an instruction manual for hand washing procedures that should be available in public facilities (health post, health centre, hospitals).
   - ✓ It's a good idea for the procedure to be posted on a wall where everyone can see it as an easy reminder.

2. Observation

   - ✓ The easiest and most reliable method. In order to say if the surface of an object (body surface, eye, table top, floor, etc.) is clean or not,
   - ✓ You should first understand what 'clean' means for those objects because the degree of cleanliness is judged in different ways.
   - ✓ It may be clean or not clean; acceptable or not; or it may be categorized using a 5-point scale: not clean, somewhat clean, clean, very clean, and super clean.
   - ✓ You have to understand that the degree of cleanliness may vary between your own and someone else's observations of the same object.

3. Indirect way of assessing

   - ✓ You need to ask yourself why some infections are more prevalent in one village than another.

Self check #4	Written test

Direction: - I. Choose the correct answer from the given alternatives

1. Criteria for Priority setting

   A. Magnitude of the problem B. Severity of the problem C. Feasibility D. All

2. Activities are put into practice on the ground at this stage

   A. Implementation B. Monitoring C. Evaluation D. Assessment

Note: Satisfactory rating 2 points unsatisfactory below 2 points

You can ask you teacher for the copy of the correct answers

Answer Sheet

Score _____

Rating _____

Name: _____ Date: _____

Short Answer Question

1._____

2._____

Information Sheet#5	Promoting Healthful Housing

1.5.1 Definition of Healthful Housing

- **Housing: -** is the physical structure that man uses for shelter and the environment of that structure including all necessary services, facilities, equipment and devices needed and desired for the physical and mental health and social wellbeing of the family and the individual. This definition is according to WHO.
- **Standard Housing: -** is a house that is properly planned and constructed, comfortable, safe to live in and fulfill the basic housing necessities (constructed in proper site, provided with safe and adequate water supply, safe and proper waste disposal, adequate light, space, well ventilated, etc.
  - ✓ In other word standard house fulfills the physical, mental and psychosocial needs of human beings.
- **Substandard Housing:-** is a house, which is poorly sited, planned and constructed, inadequate floor space for the family size (overcrowded), poorly maintained and does not in general comply with the more important sanitary facilities; this can be referred as Slum in urban case.
  - ✓ Poor housing and indoor environments cause or contribute too many preventable diseases and injuries, such as respiratory, nervous system and cardiovascular diseases and cancer. A degraded urban environment, with air and noise pollution and lack of green spaces and mobility options, also poses health risks.

1.5.2 Basic requirements of Healthful Housing

- Four basic requirements of housing :-

1) satisfaction of physiological needs
2) Protection against infection.
3) Protection against accidents.
4) Protection against psychological and social stresses.

1. Satisfaction of physiological needs

- Human physiology (the functioning of our bodies) is highly dependent on the immediate environment. Our environment should supply the necessary services and facilities for our physiological needs.

❖ Breathing

- Breathing is a physiological process that utilizes oxygen for energy production and expels the waste as carbon dioxide (CO2). Housing must allow adequate fresh air to get into the house and used air to get out. This ventilation of air is facilitated by a window.
- The area of the window surface through which air can pass must be proportional to the floor area of the room in order to get adequate air supply per given time. A guide of 10% (light and air admitting window area divided by floor area) is assumed to be adequate for residential housing

a) The floor dimensions of a room are 3 m wide and 4 m long.

- Calculate the size of the window that could supply adequate ventilation?
  - ✓ Floor area = 3×4 m = 12 m 2
  - ✓ **Answer -**The window should be 10% of the floor area. 10% of 12 m^2 is **1.2 m^2**.

b) The size of the window needed is therefore 1m wide by 1.2 m height if you had one window, or 0.8 m by 0.8 m each if you had two windows. Getting clean and fresh air through the window could be compromised by household activities.

- ✓ Interference with breathing due to smoke and gases from the use of fuels such as wood or dung is common. Inefficient combustion releases many toxic chemicals that can affect our skin, eyes and lungs.

❖ Seeing

- This is the ability to observe the immediate environment using our eyes. Naturally, visual physiology requires adequate light in order to effectively see or look at an object.
- Adequate light is also important for reading, watching TV and attending class lectures in a school. The physical structure of housing provides the required light through two sources: artificial light from electric sources and natural light through the windows from the sun. The minimum recommended light-admitting window area is similar to that for breathing.

- Sleeping
  - Sleep is a time when our body must get complete rest in order to be refreshed for the next day. Sleeping requires a separate room and should be free from any disturbance such as noise and indoor air pollution.
  - The housing structure should provide adequate space in the form of a bedroom that is reasonably free from any environmental hazard that could disrupt sleeping. Separate bedrooms for children and adults are, in many families, a necessity.
- Body heat regulation
  - Housing helps us to regulate our body heat, which means it helps us to keep warm or to keep cool. The exchange of heat between our body and the immediate environment is dependent on the difference of temperature between the two. Relatively cold air is useful to take away excess heat through the process of convection.
  - Convection is involved when there is a heat exchange between our body and relatively cold air moving across the body.
  - Heat loss by conduction is involved when body heat is transferred to a colder surface by direct touch.
  - The third mechanism for heat transfer is radiation, when body heat is lost directly to the immediate environment because of a temperature difference between two objects. Our housing should be suitable to help us regulate our body heat.
- Eating
  - Eating food is linked with the digestive system of our physiology. A kitchen for food preparation and a separate space/room where a family gets together for meals are necessary to satisfy our housing needs for eating.

2. Protection against infection

- Healthful housing is essential for the prevention of a number of diseases;-
  a) Poor housing is associated with a wide range of diseases.
- Categories of communicable diseases due to poor housing include:
  - ✓ Diarrhoeal diseases (acute watery diarrhoea, dysentery, shigellosis, typhoid fever and other faeco-orally transmitted diseases) because of poor personal hygiene, absence or poor utilization of latrines and poor waste management.
  - ✓ Tuberculosis, measles and other droplet infections due to poor ventilation and crowding.

- ✓ Acute and chronic lung diseases due to indoor/cooking smoke. Indoor smoke causes eye infection and irritation.
- ✓ Skin infections such as scabies and ringworm due to crowding as a result of limited housing space.
- ✓ Typhus fever and relapsing fever are possible due to crowding. Lice can easily travel from an infected person to the next nearby one.
- ✓ Disturbance of human comfort as a result of the bites of insects such as bedbugs and fleas. .
- ✓ Breeding sites of rats in poor housing.

b) We want to make sure that our housing provides the necessary service and facilities to ensure the prevention of communicable diseases and protection of our health.

3 Protection against accidents

- ➢ Poor housing can contribute to several types of accident including burns and electric shocks (if there is an electricity supply).

5.1:- Possible home injuries and their contributory causes.

Injury	Conditions that may cause the injury
Person falling over causing broken bones bruising etc.	Slippery floor; steps that are too high or too low
Building materials falling on people	Poor structure of roof and walls
Burn	Improper use of fuel; damage to electrical wires
Carbon monoxide poisoning	Not extinguishing fire sources while sleeping
Chemical poisoning (a child drinking pesticide, handling drugs, etc.)	Improper handling and storage of chemicals
Lack of air, breathing problems	No separate kitchen; keeping children close by while cooking with wood or dung fuel
Electric shock	Electrical wire is damaged byarat; incorrect installation; overloading a circuit etc.

4. Protection against psychological and social stresses

- ➢ Remember that housing was defined as more than just a shelter. Poor housing can contribute to psychological and social stresses. These stresses cannot be physically observed but they may be revealed in the words people use to describe how they feel. We know that stress is not good for a healthy person.
- ➢ **For example**, the absence of a school in a village can be a stressful condition for a family with school-age children. Poorly built housing or the absence of water in a household could be a source of stress. On the other hand, the presence of a church or mosque pleases those who want to have access to this opportunity.
- ➢ The presence of playgrounds for children, markets, kebele and police offices and recreational sites are some of the facilities that could alleviate human stresses.
- ➢ The satisfaction of psychological and social requirements through the presence of these facilities is very important to any organized village or community. These facilities are important for any existing as well as new settlements that include individual housing.

- The objective of a healthful housing programme is to satisfy all or most of the above basic requirements. Improvements can be suggested based on priorities. Poor housing sanitation, overcrowding, insufficient daylight, and poor ventilation are characteristics of tukuls in rural areas of Ethiopia.

1.5.3. Protecting people at special risk

- Handling the housing conditions of people who have been displaced because of war, flooding, earthquakes, ethnic conflicts and epidemics requires special consideration. This group of people is vulnerable to communicable diseases, physical and sexual abuse, hunger, thirst and various types of injury. They are likely to be socially and mentally stressed.
- The provision of shelter (tents and other types of shelter), food, plenty of water and accident prevention is most important. The representatives of displaced populations can be organized into a committee to assist the facilitation of relief assistance. The government needs to have similar organization to work effectively

1.5.4. Characteristics of good housing

- Decreases risk of communicable diseases
- Fire hazards,
- Accident,
- Reduces the creation of slum and cost of municipal services.

1.5.5 Factors affecting Healthful Housing

- The main factors that affect the structure of housing
  - ✓ Poverty,
  - ✓ Education,
  - ✓ Climate,
  - ✓ Culture and population mobility
  - ✓ The size, shape and design.
- Various types of tukuls (rural housing) that reflect different climatic and cultural variations.

a) Big tukuls have tight-plastered walls and roofs, are more spacious and are usually found in cold areas.

b) Tukuls in pastoralist areas are smaller in size, easily constructed and relatively inexpensive.

C) Mobile populations require housing that can be reconstituted easily whenever needed.

- ✓ Some cultural values may hinder specific requirements such as the use of wider windows. Lack of education is also a problem.

d) Even in high-income households, poor knowledge of the links between housing and health may be a barrier to the construction of healthful housing.

e) You should note that these factors affecting housing conditions are broad issues and not something that anyone can tackle alone but you should be aware of these factors because they may be relevant in your villages

Figure 5.1 Structure of housing in different areas of Ethiopia.

1.5.6. Indoor Air Pollution

- Indoor air pollution refers to inefficient combustion and smoky fuels burned for cooking and heating are a troubling source of serious air pollution in many traditional and developing societies. The use of such fuels causes air pollution problems both indoors and outdoors.
- The quality of indoors air is a problem in many houses in developed countries because they were built to be airtight and energy efficient.
- Chemicals from burning fuels, smoking and other sources accumulate and create a pollution problem. Indoor air pollution is also a serious problem in many developing societies. In homes where open fires burn, especially when the climate is cold, the pollution from the fires accumulates and exposes the inhabitants, especially women, to the risks associated with smoke inhalation.
- Generally the most important indoor air contaminants are tobacco smoke, radon decay products, formaldehyde, asbestos fibers, domestic combustion products (such as carbon monoxide and carbon dioxide), and other chemicals used in the household.
- Women and young children suffer the greatest exposure. Indoor air pollution contributes to acute respiratory infections in young children (pneumonia), asthma, chronic lung disease and cancer in adults, and adverse pregnancy outcomes for women exposed during pregnancy. It may also can results cataracts, otitis media, poisoning and deaths.
- **For instance,** Carbon monoxide (CO) is a toxic gas that is given off in incomplete combustion, when fuels don‘t burn properly and it is very difficult for people to detect; this makes it very dangerous (may say silent killer).
- When we breathe in, oxygen is taken in through the lungs and carbon dioxide is breathed out. Hemoglobin in the red blood cells is used to carry oxygen to various parts of the body i.e. O2 + hemoglobin oxy haemoglobin; If there is carbon monoxide in the breathed-in air, it combines with hemoglobin more easily than oxygen does i.e. CO + hemoglobin carboxyhaemoglobin; CO reduces the oxygen-carrying capacity of the blood and poisons the body. It can lead to illness and even death.

Self check # 5	Written test

Direction: - Choose the correct answer from the given alternatives

1. Standard Housing is a house:-

A. properly planned B. comfortable C. overcrowded D. safe to live

2. Satisfaction of physiological needs A. Sleeping B. Eating C. Breathing D. All

Note: Satisfactory rating 2 points unsatisfactory below 2 points

You can ask you teacher for the copy of the correct answers

Answer Sheet

Score _____

Rating _____

Name: _____ Date: _____

Short Answer Question

1._____
2._____

Information Sheet#6	Promoting Institutional Hygiene and sanitation

1.6. Institutional Hygiene and sanitation

1.6.1. Scope of Institutional Hygiene and Sanitation

- An institution may be defined as any organization established for educational, social, religious, political, etc purposes.
- Institution accommodates a group of people at a time. Schools, health facilities, prisons, military camps are some examples of institutions. Institutions have certain basic characteristics in common that require careful planning, design, construction, operation, and maintenance.

▪ These include:

1) Appropriate site selection,
2) Accessibility to the community,
3) Proximity to sources of hazards such as noise and air pollution;
4) Accessibility to safe and adequate water supply
5) Availability of roads or transportation
6) Provision of facilities for the storage, collection, and disposal of all solid wastes generated in the institution

1.6.3. School hygiene and Sanitation

- When we say schools, we mean kindergartens, primary schools (first and second cycle) and high schools, all of which could be present in your locality.

Figure 6.1:-An elementary school in one of the rural areas of Ethiopia.

1.6.3.1. Components of school hygiene and sanitation

1. Health-related policies in schools

- All schools should be aware of the importance of school hygiene and sanitation for their students.
- Promotion of hygiene, organizing hygiene/health clubs, having a clean school compound and supervising classrooms for their cleanliness are some of the items that require the attention of the woreda and kebele school authorities. The implementation of policy statements must take into account the availability of human resources and materials.

2. Promoting hygiene

- Teaching students about health focuses mainly on the dissemination of hygiene information aimed at changing or modifying their behavior.
- Health information is usually incorporated within various school subjects such as science, biology, home economics and physical education. However, teaching aimed at changing the behavior of students is not part of the traditional education system. There are ways to fill this gap.
- Setting up and supporting health or hygiene clubs in schools, and the effective involvement of the Health Post, are important. You can take an active role in this by regular inspection and advising the school community in your area.
- You can take an active lead in coordinating and involving existing local health facilities in the promotion of school hygiene and sanitation.

3. Healthy school environment

- The physical and aesthetic values of the school environment and physical buildings need to satisfy the physical, physiological and psychological development of students.

❖ The important aspects of a safe and healthful school environment are:

- ✓ Adequate classroom space to avoid crowding. The Ministry of Health recommends: 2 m 2 per student at kindergartens; 1.11 m2 per student at primary school; 1.26 m2 per student at secondary schools.
- ✓ Classrooms with adequate daylight and ventilation; the proportion of window to floor area should be 25%.
- ✓ Classrooms that protect students' vision through the appropriate distance between the blackboard and the first line of seats.
- ✓ Dimensions of desks and chairs that match the students' physical development.
- ✓ The location of the school should be free from any potential physical and chemical hazards (e.g. free from noise and air pollution).
- ✓ Playing areas for physical exercise.

4. Provision of drinking water

- Many students may walk hours to get to school. The provision of safe water for drinking and personal hygiene is important and there needs to be adequate facilities in proportion to the number of students. The Ministry of Health advises 1 water tap for 50 students.

- Low-cost water fountains and water taps arranged in a water trough design are acceptable for schools. They should be mounted at the appropriate height from the ground surface to match the height of the students Water availability should be about five litres per day per student and water must be available throughout the school day.
- A water storage tank may be necessary to provide water reserves and satisfy the demand at peak hours.
- The sullage (wastewater) that results because of hand washing must be drained to a seepage or soak pit, or ditch.

Figure 6.2 Drinking taps and hand washing basin arrangements in a school.

5. Provision of latrines
   - The provision of latrines is also extremely important. In addition, separate latrines for girls and boys need to be provided to encourage girls to continue their education. The usual type of latrine at schools is communal dry pit latrine equipped with a vent.

❖ School latrines should meet the following requirements:

- ✓ They must be located away from the classroom in order to avoid interfering with the students' learning process. They must be reasonably accessible.
- ✓ They must be well-maintained and agreeable to use. They should provide privacy and security.
- ✓ The dimensions of the latrine must be adequate to accommodate the storage needs for 3–5 years.
- ✓ There must be hand washing facilities near the latrine. Handwashing with soap after using the latrine and before lunch must be encouraged.
- ✓ There should be separate latrines for male and female students. Latrines for teachers must be separated as well.
- ✓ There must be a bucket with water and a jug inside female latrines. This is essential for cleaning the bottom for female students during menstruation.
- ✓ In primary and secondary schools, there should be one latrine for every 30 students and one urinal for every 50 male students.
- ✓ Latrines should be hygienic to use and easy to clean. Students themselves should participate in daily cleaning of the latrine. The hygiene/health club should take the leading role in the maintenance of latrine cleanliness.

Figure 6.3 School latrines with water container and handwashing facilities.

6. Provision of solid waste management facilities
   - Discarded paper and cartons are the usual type of waste at schools. There could also be chemical wastes from school laboratories. Schools should have the following facilities: .
   - Waste bins/buckets in each classroom and teacher's office. Waste bins may be placed in the school compound where deemed necessary (around corridors, playgrounds).
   - Waste disposal pit at an appropriate location; a local incinerator can be used if the amount of school solid waste is significant.
7. Classroom sanitation
   - The cleanliness of the classroom is vital for a good learning process. Students should be involved in the maintenance of classroom cleanliness on a daily basis.
   - The floor of the classroom should be smooth to reduce dust. Dust and cracks in the floor must be avoided because these are good hiding sites for biting animals such as the chigger (also known as chigger red bug or harvest mite).

Figure 6.4:- Classroom sanitation: smooth floor, physical suitability of seats and desks, adequate light and ventilation.

1.6.4. Prison hygiene and sanitation
   - Detention homes such as prisons and jails, including temporary arrest facilities, must be hygienic. The transmission of communicable diseases such as diarrhoea, relapsing fever, scabies and typhus fever could be possible due to crowding and poor sanitation in prisons.

❖ The following provisions are important to check:
   - Sanitation promotion: the strict nature of the prison requires some form of local organisation that could be actively involved in cleaning the interior rooms and compound.

- A sanitation committee can organise this with the guidance of the authorities of the prison. Its duty is to plan and execute a sanitation day at least once a week.
- Room and compound cleaning, clothes washing and personal hygiene are some of the priorities to maintain the health of detainees. .
- The presence of any possible epidemics in a prison must be checked through regular prison inspection.
- Access to safe water, showers, and clothes washing stands, latrines and solid waste disposal facilities are essential in a prison. .
- An insanitary interior of the prison is attractive for insects such as cockroaches, fleas, lice and bedbugs. Inspection of new prisoners' clothing and bodies for the presence of these insects must be done when they arrive. High standards of personal hygiene through frequent body washing, maintenance of clean premises and clean clothes should be enforced.
- The rooms for detention should have an adequate supply of indoor light and fresh air. The surface area of windows should be a minimum of 10% of the floor area in order to admit daylight and adequate air.
- Overcrowding must be controlled as much as possible. Overcrowding leads to the transmission of many communicable diseases.
- Periodical hygiene education on selected relevant topics is important in order to maintain the healthy behaviour of prisoners.

1.6.5 Health facilities

- There may be different types of local health facilities in your area, such as health posts, private and public clinics and health centers.
- The benefit of health facilities is well understood. However, the risks associated with health facilities are not always well understood by patients and the general population. Health facilities generate infectious wastes, needles and other sharps that are potentially harmful.
- The possibility of acquiring infections is another concern. The sanitation provision that you have learned about healthful housing in Study Session 4 is also applicable in these institutions.

- In particular, you should be aware of the following requirements for the Health Post you are working in:

1) Healthcare waste must be properly segregated, collected and disposed of. Needles, other sharps, contaminated linen, gauze, cotton and similar items must be disposed of by burning. The ash and unburned items must be properly handled and buried in a designated pit.

2) Liquid and semi-liquid wastes (placenta, blood, vomit, secretions) must be disposed of in a placenta pit.

3) Waste handling facilities such as latrines, incinerator and placenta pit must be available, depending on the type of health services provided. Latrines should be clean, comfortable and pleasant to use.

4) Water supply and plumbing (water tank, hand washing facilities) are very important for good personal hygiene practice among health workers and patients.

1.6.6 Public offices

- Various offices are organized to serve the population, such as the kebele administrative office. It's important to maintain a healthy office environment for the benefit of the health of the civil servants.
- Particular requirements include well-lit and ventilated offices/rooms, latrines and proper solid waste management. The supply of safe water and hand washing facilities are important for the provision of personal hygiene.

1.6.7 Religious institutions

- Churches and mosques may be present in your kebele. The need for environmental health service to the church servants on one hand, and to the attending people on the other hand, is the point of concern.
- The provision of a safe water supply with its auxiliaries, and the development of latrines in agreed sites should have priority. Proper liquid and solid waste management are also important areas of intervention.

1.6.8 Mill house hygiene and sanitation

- You can find a mill house in almost every kebele. The basic principles of healthful housing are also applicable in mill house sanitation.
- The location of the mill house should not be a source of nuisance to the community such as from noise, flour dust and wastes. There must be adequate light and natural ventilation at the workplace. The provision of latrines, drinking water and waste management (solid and liquid waste) is important.
- The presence of hand washing and shower facilities is important for personal hygiene of the workers. Floor and walls should be easy to clean.
- The installation of an exhaust pipe for waste flour is necessary. The safety of workers must be maintained through the proper guarding of machines, provision of personal protective devices (head cover, goggles, boots, ear plugs or muffs, working clothes).

Self check # 6	Written test

Direction: - Choose the correct answer from the given alternatives

---------**1)** MOH recommends class room space for kindergartens school

A)1.26m^2 **B)**1.11m^2 **C)**2m^2 **D)**3m^2

---------**2)** The proportion of class room window for school **A)** 5% **B)** 10% **C)** 25% **D)** 75%

Note: Satisfactory rating 2 points unsatisfactory below 2 points

You can ask you teacher for the copy of the correct answers

Answer Sheet

Score _____

Rating _____

Name: _____ Date: _____

Short Answer Question

1._____
2._____

Operation Sheet #1	Performing hand washing

Steps for hand washing

1. Wash your hand and arms with soap and clean water.
2. Make sure to scrub in b/n your finger
3. If you have a brush scrubs your fingernails.
4. Rinse with clean running water
5. Dry your hands in the air or use a clean towel. Do not touch anything until your hands are dry.

LAP Test	Practical Demonstration

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 5min.

Task 1: Perform hand washing

Reference

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