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GOVERNMENT OF TAMIL NADU

HIGHER SECONDARY SECOND YEAR

VOCATIONAL EDUCATION

NURSING

(THEORY & PRACTICAL)

A publication under Free Textbook Programme of Government of Tamil Nadu

Department of School Education

Untouchability is Inhuman and a Crime

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PREFACE

"Nursing is an art, and if it is to be made an art, it requires an exclusive devotion as hard a preparation as any painter's or sculptor's work.

- Florence Nightingale

Nurses are regarded the back bone of the health care industry . Nurses must be able to grow and evolve and demonstrate attributable qualities to deliver safe and quality care . With that thought in mind , and with the constant encouragement and support from the Director And Joint director of school Education , the text book of nursing has been developed , refined and reconstructed according to the changing needs of the health care systems .

The text book of nursing has been an important part of vocational training for students of class 12 . With the combined effort of professionals and industry leader s, the book has been developed over years to bring out the best curriculum in the health care . The book has a flavour of its own , in scope and content . This book aims to enhance the students' knowledge about nursing and has emphasis on skills and training . The book has a lot of new additions like chapters on communication skills , counselling . The chapters have been framed with learning objectives , pictorial representations , relevant examples , know your facts , illustrations , QR codes , ICT corner to enhance the learning experience .

This text book will serve as an educational resource for entry level under graduate courses like Diploma in Nursing (DGNM) , Degree in nursing B.Sc with potential to pursue higher education further like Doctorate in Nursing Ph.D.

We hope the book will be used to the best of its ability, encourage and enlighten young minds !

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Where to Study? DGNM

(Diploma in General Nursing and Midwifery)

1. Madras Medical College, Chennai
2. Stanley Medical College, Chennai
3. Kilpauk Medical College, Chennai
4. Madurai Medical College, Madurai
5. Thanjavur Medical College, Thanjavur
6. Tirunelveli Medical College, Tirunelveli
7. K.A.P.V. Viswanatham Medical College, Trichy
8. Govt. Mohan Kumaramangalam Medical College, Salem
9. Coimbatore Medical College, Coimbatore
10. Kasthurba Gandhi Hospital for Women & Children, Chennai
11. Vellore Medical College, Vellore
12. Thoothukudi Medical College, Thoothukudi
13. Kanyakumari Medical College, Kanyakumari
14. Chengalpattu Medical College, Chengalpattu
15. Theni Medical College, Theni
16. District Head Quarters Hospital, Kancheepuram
17. Cuddalore District Head Quarters Hospital, Cuddalore
18. Ramanathapuram District Head Quarters Hospital, Ramanathapuram
19. Dindigul District Head Quarters Hospital, Dindigul
20. Uthagamandalam District Head Quarters Hospital, Uthagamandalam
21. Tirupur District Head Quarters Hospital, Tirupur
22. Nagapattinam District Head Quarters Hospital, Nagapattinam
23. Virudhunagar District Head Quarters Hospital, Virudhunagar

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NURSING

THEORY

Unit 1



NUTRITION

LEARNING OBJECTIVES

At the end of this chapter, the students will be able to

- recognizes the value of nutrition in maintaining health.
- make the nutrition as an integral part of their daily practice
- understand the value of balanced diet
- identify the various nutrients and their sources
- knows the deficiency disorders caused by various nutrients
- understand the various methods of cooking and preservation of food.

3DU5R

திருக்குறள்:

தீயள வன்றித் தெரியான் பெரிதுண்ணின்
நோயள வின்றிப் படும்

விளக்கம்:

பசித்தீயின் அளவின் படி அல்லாமல், அதை ஆராயாமல் மிகுதியாக உண்டால் , அதனால் நோய்கள் அளவில்லாமல் ஏற்பட்டு விடும்

Explanation:

A person who eats beyond body's capacity to burn the energy (food consumed),
Will develop all kinds of diseases.

1.1 INTRODUCTION

Food is the prime necessary of life and mankind eats to satisfy the feeling of hunger. From the earlier times man remained busy in finding out the ways of consumption of food. The science of nutrition is mainly concerned with defining the nutritional requirements for the promotion, protection and maintenance of health in all groups of the population. The knowledge of nutrition has a direct bearing on the maintenance of sound health of an individual. The concern of today's health is the maintenance and restoration of health. Nurses as an important member of health care team has a key role in maintaining the nutritional needs of their client.

1.2 DIFFERENCE BETWEEN BALANCED DIET AND MALNUTRITION

Balanced Diet

The term "Balanced Diet" refers to a diet that provides all of the nutrients body needs, without too much of any one component. A Balanced diet contains all types of food in a right proportion. It means a balanced diet contains the right amount of carbohydrate, protein, fat or oil, vitamins, mineral salts and water depending on the desired needs of the body.

A Balanced diet offers the full range of nutrients body needs to function at its peak performance level while an unbalanced diet is generally lacking in nutrients and too full of harmful ingredients.

Malnutrition

Malnutrition is the eventual result of an imbalanced diet. Consuming too much or too little of any one nutrient, can cause malnutrition. Malnutrition can be so mild that a person suffers no ill effects. It can also be so severe that it causes serious illness or death. Malnutrition symptoms vary depending on the specific nutrient imbalance. Some possible symptoms

Good nutrition	Malnutrition
1. Correct weight for height and age	1. Increased /decreased weight and height not appropriate to age
2. Strong muscles and straight limbs	2. Weak muscles and bowlegs or knock-knees
3. Smooth, clear skin and mucous membranes	3. Dry skin
4. Healthy, bright eyes, clear sight	4. Dull eyes, night blindness, poor sight
5. Hearing well	5. Poor hearing capacity
6. Breathing unobstructed	6. Mouth breathing and adenoids will be present
7. Teeth well formed and free from dental caries	7. Malocclusion of teeth, dental caries, spongy gums
8. Tonsils are normal and free from infection	8. Tonsils are enlarged, often infected
9. Erect posture in sitting, standing and walking	9. Abnormal gait, twisted spine, protruding abdomen
10. Nerves steady, expression calm and cheerful, quick to learn	10. Nervous, anxious, irritable, slow to learn
11. They are energetic	11. Tired and restlessness
12. Good resistance to infections	12. Poor resistance to infections

include edema, chronic diarrhoea, anemia, goiter, weight loss and decreased muscle mass.

Antoine Lavoisier (18th century) is considered as the Father of nutrition.

1.3 CLASSIFICATION OF FOOD

Classification of Foods

By chemical nature	• Carbohydrates, Protien, Fats, vitamins, Minerals, Dietary fiber, Water
By functions in the body	• Energy Giving • Body Buidling • Protective
By chemical properties	• Organic • Inorganic
By mass	Macro Nutrients Micro Nutrients
By Origin	Plant Foods Animal Foods
By nutiritve value	12 Categories

Energy giving foods

The carbohydrates, fats and the protein are considered as calorie nutrients, so that the body can perform the necessary functions. Rice, chapatti, bread, potato, sugar, oil, butter and ghee are examples of energy giving foods.

Human beings require more than 45 different nutrients for their well being.

Body building foods

Foods such as proteins, fats and carbohydrates are also called as body-building food. They are the nutrients that form body tissues. Fish, meat, chicken, eggs, pulses, nuts and milk are some body building foods.

Protective foods

Vitamins and minerals are the nutrients that function to regulate body processes. They protect us from various diseases. Fruits and vegetables are some examples. Therefore we must eat these regularly.

Hippocrates (Greek physician) - Father of medicine said 'Let thy food be thy medicine and thy medicine be thy food'

1.4 FUNCTIONS OF FOOD

Food has three main functions in the body



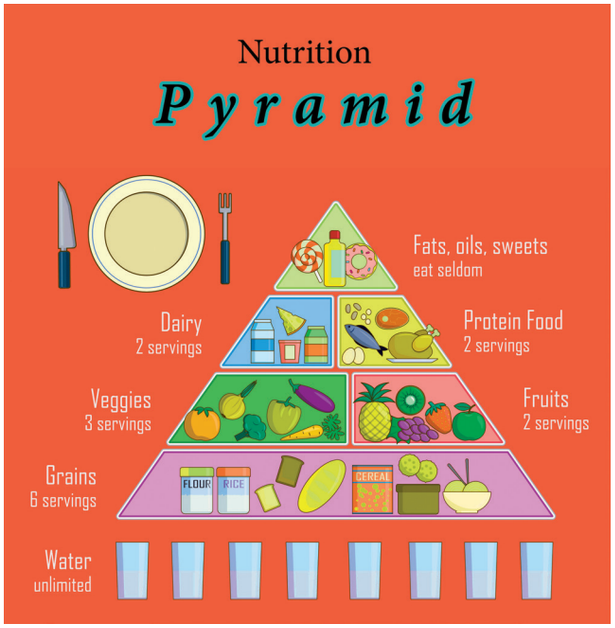
- Growth and development
- Provision of Energy
- Repair and maintenance of cells

1.5 THE FOOD PYRAMID

The Food Pyramid is designed to make healthy eating easier. Healthy eating is about getting the correct amount of nutrients – protein, fat, carbohydrates, vitamins and minerals needed to maintain good health.

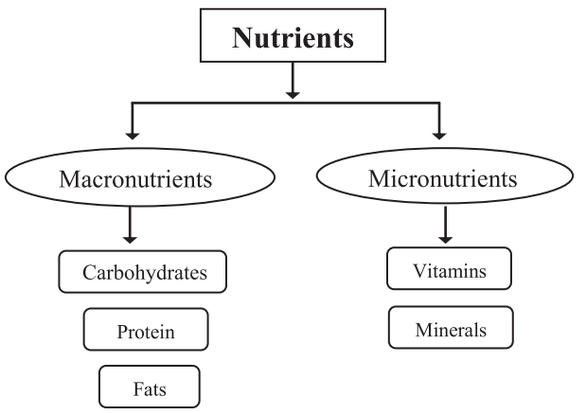
Foods that contain the same type of nutrients are grouped together on each of the shelves of the Food Pyramid. This gives a choice of different foods from which to choose a healthy diet. Following the Food Pyramid as a guide will help to get the right balance of nutritious foods within the calorie range.

The first pyramid was published in Sweden in 1974.



1.6 NUTRIENTS

The substances which are present in the food and consumed in our body for its vital functions are called nutrients. According to the World Health Organization (WHO), these nutrients must come from food, and they are vital for disease prevention, growth, and good health. There are several constituents such as:



Classification of nutrients

I. Carbohydrates

Carbohydrates are the chief sources of energy (Providing 4 Kcals/gm). Carbohydrates are cheap and readily available from food. There are three different kinds of carbohydrates. They include starch, sugar, and fibre. We do not get calories from fibre because our bodies do not break down fibre during digestion.

The chemical composition of carbohydrates includes carbon, hydrogen and oxygen (CH_2O).

Classification of Carbohydrates

1. Monosaccharides: These are the simplest form of carbohydrates containing simple sugar molecule. **Example:** Glucose, Fructose and Galactose.
2. Disaccharides: These carbohydrates composed of two units of Monosaccharides. **Example:** Sucrose, Lactose and Maltose.
3. Polysaccharides: These are the complex sugars containing numerous units of monosaccharide molecules. **Example:** Glycogen, Cellulose and Pectins.

Daily requirements

Carbohydrate intake should be in the range of 300-500gm (50%- 70%) out of the total energy intake for adults and 40-60% for children.

Sources: All sugars, jaggery, honey, pulses, whole grains, cereals, grains, rice, fruits, milk, yogurt, beans, roots and tubers such as potatoes, beet root etc.

Functions of Carbohydrates

1. Supplies energy
2. Protein sparing function
3. Oxidation of fats
4. Regulating blood glucose
5. Facilitates bowel movements



Carbohydrate provides more than half of the calories in the diet.

Dietary Fibre

The carbohydrates (E.g, pectin, cellulose, hemicellulose) and some non carbohydrates substances (e.g. lignin) are collectively called as dietary fibre. Fibre is found in vegetables, fruits and grains. It resists digestion.

The most practical ways of including sufficient fibre in diet are:

- Whole cereals should be preferred to refined cereals
- Whole pulses should be preferred to those from which the husk has been removed
- Fruits and vegetables can be eaten with the skin intact.

Significance of Fibre

High fibre diet plays an important role in prevention and management of constipation (Inability to pass motion/ lack of bowel movement)

Fibre also helps to reduce blood cholesterol

Helps to prevent blood glucose level after food (Post prandial blood glucose)

II. Proteins

Proteins are the indispensible constituents of the diet. Proteins are made up of amino acids. Amino acids are needed for replacement and growth of the body parts.

Amino acids are classified as essential and non essential amino acids. Essential amino acids cannot be synthesized by the body and must be taken through foods whereas non essential amino acids can be synthesized by the body.

Daily requirements

The ICMR recommends 1gm of protein/Kg of body weight for adults.

The amount of protein should be increased for children, pregnant and lactating mothers by 1.5- 2 g/kg body weight.



Sources of Protein

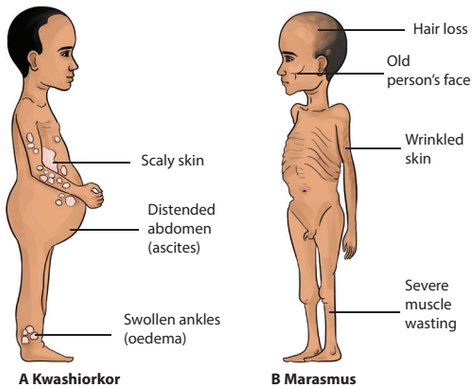
Animal sources: eggs, milk and milk products, fish, meat.

Plant sources: pulses, cereals, dry fruits, beans nuts etc.

Functions of Proteins

- Protein helps in synthesis of enzymes, immunoglobulin, plasma proteins and hormones in the body
- Protein helps in growth and repair of body tissues
- Proteins help in forming haemoglobin
- Proteins help in antibody formation

Severe protein deficiency along with food energy causes Protein Calorie Malnutrition (PCM). The serious forms of PCM are Kwashiorkor and Marasmus.



A Kwashiorkor B Marasmus

III. Fats

Fat is deposited as adipose tissue in the body and perform essential functions in the body. Fats are composed of fatty acids and contain oxygen, carbon and hydrogen.

Classification: Fats are classified in to two types: saturated fat and unsaturated fat.

a) **Saturated Fat:** These have full number of hydrogen atoms. These are from animal sources. **Example:** butter, Ghee and vanaspati oil.

b) **Unsaturated Fat:** These contain one, two or more double bonds of fatty acids. These are extracted from vegetable sources. **Example:** Groundnut oil, soyabean oil, sunflower oil.

Daily Requirements

15-20% of total calorie requirements should be from fat

Sources

Animal sources: *Fish, egg, meat, milk and milk products.*

Plant sources: *oil seeds (Groundnut, mustard, cotton seed and coconut oil), nuts.*



Functions

- Supplies energy (9 kcals/ gm)
- Improve the palatability of food (flavor and taste)
- Supports body organs like liver and kidneys
- Provides insulation and thermoregulation against cold
- Provides essential fatty acids which helps in growth, promotion and maintenance of skin integrity
- Helps in formation of hormones in the body
- Helps in transportation of fat soluble vitamins

IV. Vitamins

vitamins are complex chemical substances required by body in very small amounts.

Vitamins in food are for the protection and regulation of body functions.

- **Vitamins** are divided in to two major groups
- Fat soluble vitamins- Vitamin-A, D, E and K
- Water soluble vitamins- Vitamins of B group and vitamin C

Fat Soluble Vitamins

Vitamin-A

The chemical name is Retinol. Found in foods of both plant and animal origin.

Daily requirements: 0.4-1 mg

Sources

Green leafy vegetables and yellow orange fruits and vegetables like mango, papaya, pumpkins and carrots are good sources of β-carotene. Butter, whole milk, egg, liver and fish are richest sources.

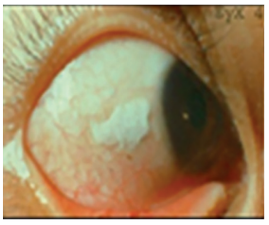


Functions

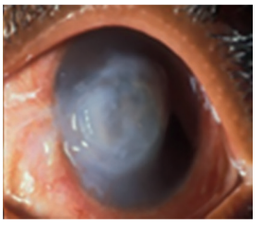
- Necessary for the health of the eyes.
- Maintenance of the normal epithelial tissues of the body.
- Necessary for growth and proper utilization of protein

Deficiency Syndrome

- Decreased resistance to infection
- Dry scaly skin
- Night blindness (Inability to see in dim light)
- Xerophthalmia- dry eye
- Bitot's spots- Greyish, rough and raised patches on conjunctiva
- Keratomalacia- Softening of the cornea.
- Stunted Growth



Bitot's spot



Keratomalacia

Vitamin-D

Vitamin D is synthesized by sunlight. Vitamin D is essential for bone growth.

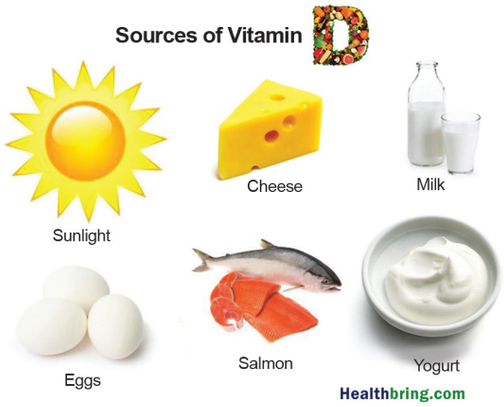
> Vitamin D is otherwise known as 'sunshine vitamin' as it can be synthesized from sunlight by our body.

Daily requirements: 400 IU

Sources

Generated in the skin by action of ultra violet rays of sunlight

Food sources are milk, butter, cheese, egg, fish and fish liver oils, and foods which have been fortified by addition of vitamin D.



Functions

- Increases intestinal absorption of calcium and phosphates
- Mineralization of bones

Deficiency Syndrome



Rickets in children- Bony deformities in growing children due to defective mineralization of the growing bones. Bones become soft and bend under pressure.

Osteomalacia- Generalized bone pain in adults especially in women.

Vitamin E

Vitamin E is an antioxidant and formed up of chemical substance called tocopherols.

> Vitamin E is called as anti sterility (Reproduction) vitamin.

Daily requirements: ICMR recommends 0.8 mg/ g of essential fatty acids.

Sources

Milk, oils, eggs, leafy vegetables, papaya, grains, nuts.



Functions

- Antioxidant (Prevents the formation of oxidative free radical)
- Co factor in electron transport
- Prevents or delays the ageing

Deficiency syndrome: Sterility, muscle wasting with weakness

Vitamin K

It is otherwise called as antihemorrhagic vitamin.

Daily requirements

WHO suggested RDA of 55 µg per day for adults.



Sources

Green leafy vegetables, cereals, fruits. Synthesized by bacteria in gut.

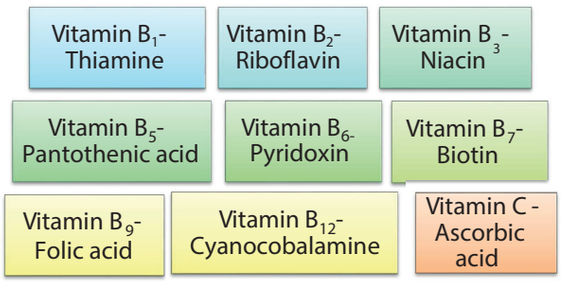
Functions

- Important component in blood coagulation
- Helps in formation of blood clotting factors

Newborn babies have sterile intestinal flora and cannot produce Vitamin K, hence given artificially.

Deficiency Syndrome: Alteration in blood clotting mechanism

II. Water Soluble Vitamins



These vitamins are essential for many metabolic functions of the body. These are daily required in diet.

Vitamin B_1- Thiamine

Thiamine is essential for the normal metabolism of carbohydrates and fats. It is necessary for the transmission of nerve impulses.

Daily requirements: 0.5 to 2 mg

Sources

whole grain cereals, wheat, ragi, pulses (dhal), vegetables and potatoes, green leafy vegetables. Meat, fish, liver and eggs.



Polished milled rice and wheat flour of white variety are deficient of vitamin B_1.

Functions

- Helps in carbohydrate utilization.
- Maintenance of appetite and digestion.

Deficiency Disorder

Beriberi- condition in which there is a severe muscle wasting, growth retardation in children, neurological disturbances and frequent infection.

Vitamin B_2

Vitamin B_2, also known as riboflavin, is one of the eight B-complex vitamins. It is essential for the health of skin and for normal vision.

Daily requirements: 0.6 mg/ 1000 Kcal

Sources

Riboflavin is found in eggs, nuts, dairy products, meats, broccoli, sprouts, wheat germ, wild rice, mushrooms, soyabeans, green leafy vegetables and whole grain and enriched cereals and bread. Riboflavin also synthesized by bacteria in intestine.



Functions

- It helps the body break down carbohydrates, proteins and fats to produce energy.
- It allows oxygen to be used by the body.

Deficiency Syndrome

- **Glossitis**- Ulceration of the tongue.
- **Angular stomatitis**- Cracks at the corner of the lips.
- **Corneal ulceration**

Vitamin B_2 Deficiency



Vitamin B_3

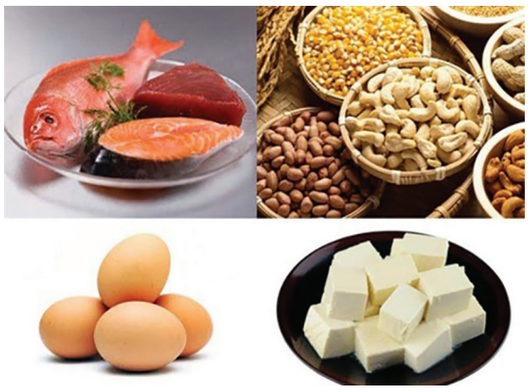
Niacin is one of the B-complex nutrients; it can be synthesized in body.

Daily requirements: 10-15 mg

Sources

Found in appreciable amounts in liver, yeast, meat, legumes, peanuts and whole cereals.

Foods that are good sources of tryptophan are animal protein and vegetable protein.



Functions

- Helps in normal functioning of skin, intestinal tract and nervous system

Deficiency Syndrome

1. Pellagra- Three conditions are

a. Dermatitis -dark, dry and scaly skin

b. Diarrhea- due to atrophy of intestinal wall

c. Dementia-Memory Loss

4 D's of pellagra

Diarrhoea, Dermatitis, Dementia and Death

2. Glossitis, mental disorders

Vitamin B_5- Pantothenic acid

Anti dermatitis factor

Daily requirements: 10mg

Sources

Eggs, liver, yeast, many fish and vegetables.



Functions

- Necessary for metabolic functions

Deficiency Syndrome

Dermatitis, hair loss

Vitamin B_6

This vitamin $B_6$is otherwise known as pyridoxine. It is stored in muscle but found in tissues throughout the body.

Daily requirements: 1.5-2 mg for normal adults.

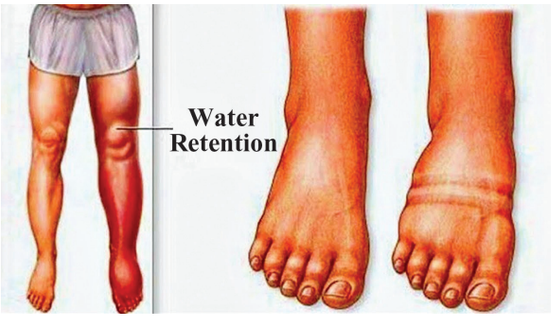


Source

Whole grains, legumes, bananas, potato, liver, kidney and other meats, fortified breads and cereals. Sunflower seeds, soya beans, walnuts and yeast are the richest sources of pyridoxine among plant foods.

Functions

- Production of red blood cells
- It is readily absorbed from intestines
- Improves immunity
- Improves nervous system function
- Reduces muscle spasms, cramps and numbness
- Maintains proper balance of sodium and phosphorous in the body



Deficiency Syndrome

Anaemia, nervousness, insomnia, oedema (Water retention), mental depression. Muscle weakness, tooth decay.

Arm and leg cramps, Skin lesions and skin disorder.

Pyridoxine has been used to prevent or treat a certain nerve disorder **(peripheral neuropathy)** caused by certain medications **(such as Isoniazid).**

Vitamin B_7

Otherwise known as Biotin. It is associated with carbohydrates metabolism.

Daily requirements: Traces

Sources

Egg yolk, liver, kidney, tomatoes, vegetables, legumes and cereals.

Functions

It is needed for protein and fatty acid synthesis

Deficiency syndrome: Dermatitis, hair fall.

Folic acid

Vitamin B_9 includes both folate and folic acid and is important for several functions in the body.

Daily requirements: 0.4mg

Sources

Fish, mutton, liver, egg, chicken, green leafy vegetables, pulses, lentils, beans, sunflower seeds, beets, broccoli, spinach, orange juice, tofu, fish, meat, fortified cereals, milk, cheese, eggs, oysters, crab etc.,



Functions

- Folic acid helps the body to convert carbohydrates into glucose, which is used to provide energy.
- Folic acid helps in building of antibodies which prevent and heal infections.
- Regulates blood cells formation.

Deficiency Syndrome

- A recent study connected folic acid deficiency with autism
- Megaloblastic anemia
- Sterility
- Low birth weight babies
- Congenital defects in the child- cleft lip and cleft palate

Vitamin B_{12}-Cyanocobalamine

This vitamin is destroyed by heat.

Daily requirements: 1-3 µg

Sources

Foods of animal origin, also synthesized by bacteria.



Functions

- DNA Synthesis
- Stimulates and promotes maturation of RBC's

Its absorption from the intestines requires a factor called 'intrinsic factor (IF)' secreted by the stomach. It is a specific protein secreted by the mucosal cells lining the stomach. IF binds and absorbs vitamin B_{12}.

Deficiency Syndrome

- Pernicious anemia
- Infertility
- Neurological and mental disturbances

Vitamin C

Vitamin C is also known as ascorbic acid. It is an antioxidant and water soluble vitamin.

Daily requirements: up to 40 mg

Sources: Citrus fruits (amla, guava, lemon, orange, tomato), green leafy vegetables.



Functions

- Helps in wound healing
- Prevents bleeding
- Antioxidant

Heat and cooking destroys the Vitamin C.

Deficiency Syndrome

Scurvy- Painful swelling of gums and joints. Multiple hemorrhages specially in gums, skin and mucus membrane delayed wound healing.

V. Minerals

These are the inorganic compounds in micro quantities which are essential for many vital functions of the body. The minerals constituent of the body amounts to 4.3 to 4.4 %, largely in the skeleton.

General Functions of Minerals

As constituents of hard tissue. (eg.) calcium and phosphorus in bone and teeth.

As constituents of soft tissue. (eg.) Sulphur and phosphorus.

As constituents of substances assisting in the regulatory function of the body (eg.) salts in solutions influence nerve and muscle action.

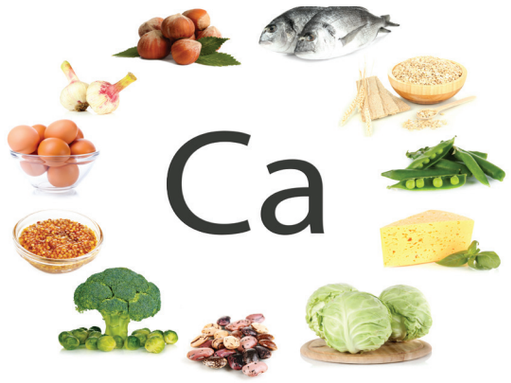
Some of the essential mineral salts are sodium, potassium, calcium, phosphorus, magnesium, iron and iodine.

Calcium

Calcium is most important for children and pregnant women.

Calcium is important component in bones and enamel of teeth. 99% of body calcium is found the bones.

Sources: milk and its products, green leafy vegetables, bones of meat, fish, pumpkin, coconut, dry fruits, cereals.



Daily requirements: 400- 500mgm

Functions

- Formation and maintenance of bones and teeth
- Coagulation (Thickening) of blood
- Muscle contraction

Sodium

Sodium is essential for many body activities. It is taken in the diet as salt.

Sources: Common salt, sodium chloride is also found in certain foods like fish, meat, eggs and seasoned foods.

Daily requirements: 8-10 gms

Functions

- It helps in transmission of nerve impulses
- Maintenance of body fluids and electrolytes balance



- Smooth functioning of nerves, muscles and body cells

Potassium

Most of the potassium present inside the cells.

Sources: Fresh vegetables, citrus fruits, milk, guava and amla.



Functions

- Involved in various biochemical activities of the cells.
- Transmission of nerve impulses.
- Maintenance of electrolyte balance and contraction of muscles.

Daily requirements: 2-5 gms

Phosphorous

Most of the phosphorus present in the bones as inorganic form. Few amount resent inside the cells.

Sources: Whole grain cereals and flours, legumes, oatmeal, cheese, nuts, fish



Functions

- Gives rigidity to bones and teeth
- Regulates pH of the blood and urine
- Important in energy metabolism
- Phosphorus compounds are necessary for carbohydrate metabolism and for the calcification of bones and teeth
- Needed for transport of fatty acids

Iron

The amount of iron presents in the adult human body is very small, but it is very important substance and essential for the maintenance of life. 75% of total body iron present in the blood.

Sources: Liver, meat, fish, eggs, cereals, pulses, green leafy vegetables, dry fruits, jaggery, certain beans.



Daily requirements: 25-40 mg

Functions

- Component of hemoglobin and myoglobin
- Helps in oxygen transport and cellular respiration

Iron is better absorbed with vitamin C and absorption delayed with tea or coffee.

Iodine

Iodine is considered as an important for maintaining metabolic rate.

Sources: Iodized salt, salt water fish, milk, meat cereals and green leafy vegetables.

Fortification of common salt with potassium iodate is a recommended method of making iodine easily available.



Daily requirements: 01.05 mg

Functions

- Iodine is an important constituent of thyroxine, the hormone secreted by the thyroid gland
- Iodine is responsible for the regulation of physical growth

Magnesium

Human body contains about 25gms of magnesium. Half of it is present in bones and in combination with phosphate and carbonate and about 1/5th in soft tissues.

Functions

Constituent of bones and teeth, coenzymes in general metabolism, smooth muscle action.

Sources of Magnesium: Dairy products (excluding butter) fresh green vegetables, meat, nuts, sea food and legumes are good sources of magnesium.



Other Inorganic Elements

Copper: Functions with iron in the formation of haemoglobin.

Manganese: Has a similar effect though less marked than copper.

Cobalt: It is present in vitamin B_{12} which is also necessary for the formation of haemoglobin.

Zinc: Is found mainly in pancreatic tissue and may have an important part to play in the storage of insulin in the gland.

Clinical Significance of Minerals

1. **Calcium:** Deficiency of calcium in the body precipitates rickets in the children and osteomalacia in adults.
2. **Iron:** Reduced level or lack of iron causes anemia, certain hormonal changes in women.
3. **Iodine:** Lack of iodine in the body leads to enlargement of thyroid gland called as goiter.

1.7 METHODS OF COOKING

Cooking is an art. It is linked with the dietary and cultural pattern of people. Almost all foods consumed need some form of cooking and processing before they are fit for serving and consumption. Fruits and some vegetables used in salad or chutneys are consumed uncooked.

Cooking has many Benefits

1. Cooking increases palatability of the food
2. It makes mastication easier and renders the food easy to digest
3. It sterilizes food by killing microorganism
4. Adds new flavor and stimulates digestive juices
5. Good cooking increases the acceptability of food
6. It improves the appearance of food

Methods of Cooking

- Boiling
- Simmering
- Steaming
- Stewing
- Roasting
- Frying
- Baking
- Grilling
- Solar cooking

Boiling: Cooking in water at its boiling point 100°c is known as boiling. Most of the vegetables are cooked by this method. Boiling in excess water may result in loss of vitamins and minerals. Specific time and minimum water must be kept for boiling these items.

To get good results from boiling

- Use the right amount of water
- Select correct size of pan
- Lid should be tightly closed



- Cook the food with skin to preserve nutrients
- Uncover the pan in case of green leafy vegetables

Methods to avoid loss of nutrients during cooking

- Cut the vegetable into bigger pieces
- Cut the vegetables and use it immediately
- Soaking or washing time should be reduced. Wash the vegetable with the skin and later should be peeled and cut
- Vegetables should be cooked in minimum amount of water. Any liquid remaining after cooking the vegetable should be used in a gravy or soup
- Cook the vegetables by steaming and pressure cooking

Simmering: This method includes cooking below the boiling point i.e 85°C. Meat and fish are best cooked by simmering because cooking at high temperature hardens the fibres of meat. It helps in preserving the essential vitamins and minerals.



Steaming: Cooking in this method involves direct heat steaming. Temperature is high and pressure is maintained. Pressure cooker is used to cook things by steam under pressure. This method is effective as it preserves nutrients, fuel and time.



Stewing: This method included boiling in smaller amount of liquid for a prolonged, low degree of heat about 80^0C. Here a pan is used which has well fitted lid to prevent evaporation.



Roasting: food is smeared with a little fat and exposed directly to heat or flame. This makes the food tender. Chicken and tender mutton may cooked by this method.



Frying: Frying is cooking in oil. It may be of two types- deep fry and shallow fry. In deep frying foods are completely immersed in large amount of oil. E.g; puri, cutlets, samosa etc. Shallow frying includes using less quantity of cooking oil. This method is suitable for cooking dosa, omlet, etc.



Baking: Baking is cooking food by dry heat. It is done in a hot air oven. Temperature required for baking is 250-500^0C. Baking is expensive form and slow process of cooking. Foods cooked by this method are bread, pastry, cakes etc.



Grilling: This is direct heat cooking method. Here direct heat flame, grill or pans are used to cook. It is quick method of cooking for tender foods like cheese, brinjals and tomatoes.



Solar Cooking: Here solar energy is used to cook foods. It takes a longer time for cooking by this method. It is simplest and traditional form of cooking. Solar cooker and closed containers are used which absorb maximum solar energy.



STUDENT'S ACTIVITY

Given below are different methods of cooking. Write the names of two things that can be cooked by each of these methods:

Method of cooking	Name of things
Roasting	
Frying	
Boiling	
Baking	
Steaming	

1.8 FOOD PRESERVATION

Food preservation is known "as the science which deals with the process of prevention of decay or spoilage of food thus allowing it to be stored in a fit condition for future use". Preservation ensures that the quality, edibility and the nutritive value of the food remains intact.

Techniques of Food Preservation

Different methods are used to preserve the foods. A single method or combination of methods can be used.

Drying is the oldest method of food preservation. This method reduces water content which prevents bacterial growth. Sun and wind are both used for drying.



Freezing is keeping prepared food stuffs in cold storages. Freezing at low temperature prevents microbial growth, slowing of oxidation reactions.



Smoking is the process that cooks, food exposing it to the smoke from burning wood. Various methods of smoking are used like hot smoking, cold smoking, smoke roasting and smoke baking.



Vacuum packing creates a vacuum by making bags and bottles airtight. Since there is no oxygen in the created vacuum bacteria die. Usually used for dry fruit.



Salting and Pickling Salting removes moisture from foods like meat. Pickling means preserving food either in salt solution or vinegar. Salt kills and inhibits growth of microorganisms at 20% of concentration.



Sugar is used in syrup form to preserve fruits in crystallized form. Example: Candied peel and ginger.

Canning and bottling means sealing cooked food in sterile bottle and canes. The container is



boiled and this kills or weakens bacteria. Once the cane or bottle is opened the food is again at risk of spoilage.



Jellying is preserving food by cooking in a material that solidifies to form a gel. Fruits are generally preserved as jelly. Sugar is also added.



Pasteurization is a process that kills bacteria in liquid food. In this method moderately high (62°C to 100°C) temperatures are used (for about 15 to 30 minutes) to inactivate certain enzymes and kill certain other microorganisms

especially in milk. Pasteurized products need refrigeration after exposure to air.



Pasteurization was invented by French scientist Louis Pasteur during the nineteenth century.

Pulsed Electric Field Processing is a new method of preservation that uses brief pulses as strong electric field to process cells.



1.9 ADULTERATION OF FOOD ADDITIVES

Food additives are defined as non – nutritious substances which are added intentionally to food generally in small quantities to improve its appearance, flavour or storage properties.

Adulteration of food

Adulteration it is done through a large number of practices:

- Mixing
- Substitution
- Abstraction
- Concealing the quality
- Putting up composed foods for sale
- Misbranding or
- Giving false labels and
- Addition of toxicants.

Food adulteration practices vary from one part of the country to another and from time to time.

The types of adulteration commonly found in India are as follows:

Milk: Addition of water, removal of fat and addition of starch to make the milk thicker are the common forms of milk adulteration.

Ghee: This is a adulterated with dalda and animal fats such as pig's fat

Rice and Wheat: These are mixed with stone chips and mud to increase the bulk

Flour: Wheat flour is mixed with soap stone powder and cheaper flours such as singhara flour.

Pulses: Chemical substances are added to old stocks to improve the appearance. Tea and Coffee:

Tea leaves are adulterated with old tea leaves, leather and saw dust.

Coffee is adulterated with chicory.

Honey: This is adulterated with sugar or jaggery and boiled with empty beehives.

Medicines: Even drugs are adulterated.

CONCLUSION

In order to have a healthy life and good nutritional status, a person needs to eat a balanced diet.

Nutrients are classified into macronutrients and micronutrients. Carbohydrates, proteins, fats and water are macronutrients, and vitamins and minerals are micronutrients.

Carbohydrates, proteins, fats, vitamins, minerals, water and fibre are the main food groups which together, but in variable amounts, make up a balanced diet.

Vitamins are substances present in small amounts in foods and are vital for the body to function normally. Vitamins are also called protective foods.

A-Z GLOSSARY

Nutrition (ஊட்டச்சத்து)	-	The science of food and its relationship to health.
Nutrient (சத்துப்பொருள்)	-	A substance essential for the growth, maintenance, function and reproduction of a cell or an organism.
Nutritional status (ஊட்டச்சத்து நிலை)	-	Health of a person is influenced by the quality of food eaten and the ability to utilize these foods to meet its needs.
Malnutrition (poor nourishment) (ஊட்டச்சத்து குறைபாடு)	-	Impairment of health resulting from a deficiency, excess or imbalance of nutrients.
Health (ஆரோக்கியம்)	-	State of complete physical, mental and social well being and not merely the absence of disease or infirmity. (WHO)
Food (உணவு)	-	Food is the basic necessity of life and is required for physiological, functions of the body.
Infection (நோய்தொற்று)	-	Infection is the invasion of body tissues by disease-causing agents, their multiplication, and the reaction of host tissues to the infectious agents and the toxins they produce.
Mortality (இறப்பு விகிதம்)	-	Is a measure of the number of deaths (in general, or due to a specific cause) in a particular population, scaled to the size of that population, per unit of time.
Morbidity (நோயுற்ற நிலை)	-	Refers to having a disease or a symptom of disease, or to the amount of disease within a population.

WHO (உலக சுகாதார நிறுவனம்)	-	World Health Organization
Deficiency (குறைபாடு)	-	An inadequate supply of essential nutrients (as vitamins and minerals) in the diet resulting in malnutrition or disease
Diet (உணவு முறை)	-	A diet May be defined as the kinds of food on which a person or group lives.
Balanced diet (சரிவிகித உணவு)	-	A balanced diet as one which contains a variety of foods in such quantities and proportions that the need for nutrients is adequately met.
Lipid (கொழுப்பு)	-	A small water insoluble biomolecule generally containing fatty acids, sterols or isoprenoid compounds.
Fatty acids (கொழுப்பு அமிலங்கள்)	-	A long chain aliphatic carboxylic acid found in natural fats and oils; also a component of membrane phospholipids and glycolipids.
Recommended Dietary allowances (RDA) (பரிந்துரைக்கப்பட்ட உணவு)	-	Levels of intake of essential nutrients considered in the judgment of the committee on dietary allowances of the food and nutrition board.
Oxidation (ஆக்ஸிஜனேற்றம்)	-	It is the chemical process by which an atom or group of atoms loses electrons.
Calories (கலோரிகள்)	-	Measurement of the amount of energy that food provides or units used to measure the energy value of food
Amino acids (அமினோ அமிலங்கள்)	-	Alpha amino substituted carboxylic acids; the building blocks of protein.
ICMR (இந்திய மருத்துவ ஆராய்ச்சி கவுன்சில்)	-	Indian Council of Medical Research
Saturated (செறிவூட்டப்பட்ட)	-	A fatty acids containing a fully saturated alkyl chain.
Unsaturated (செறிவூட்டப்படாத)	-	A fatty acids containing one or more double bonds.

EVALUATION

I Choose the correct answer:

1. Mention the body –building food.
   a. Protein b. Vitamins
   c. Minerals d. Water
2. Which nutrients regulate the body process?
   a. Vitamins and Protein
   b. Vitamins and Fat
   c. Vitamins and Minerals
   d. Minerals and Protein
3. Which year food pyramid was published?
   a. 1974 b. 1972
   c. 1970 d. 1984
4. Which is the simplest form of carbohydrates?
   a. monosaccharaides
   b. Disaccharides
   c. Polysaccharides
   d. Cellulose
5. Which is the chief source of energy?
   a. Protein b. Carbohydrates
   c. Minerals d. Vitamins
6. Mention the amount of protein required for an adult as per ICMR recommendation?
   a. 1 gm/kg of body weight
   b. 2 gm/kg of body weight
   c. 1.5 gm/kg of body weight
   d. 2.5 gm/kg of body weight
7. Give an Example for saturated fat?
   a. Ghee b. Soya bean Oil
   c. Groundnut Oil d. Sunflower Oil
8. Give an Example for unsaturated fat?
   a. Butter b. Ghee
   c. Cheese d. Soya bean Oil
9. 1 gm of fat gives _____.
   a. 4 kcal b. 9 kcal
   c. 8 kcal d. 5 kcal
10. What is the chemical name of vitamin A?
    a. Retinol b. Tocopherol
    c. Biotin d. Pantothenic Acid
11. Which Vitamin is necessary for the health of eyes?
    a. Vitamin D b. Vitamin E
    c. Vitamin K d. Vitamin A
12. Which is the good source of β – Carotene?
    a. Carrot b. Guva
    c. Lemon d. Sunlight
13. Which vitamin is essential for the normal metabolism of carbohydrates and fats?
    a. Thiamine b. Riboflavin
    c. Niacin d. Vitamin – C
14. Which mineral regulates pH of the blood and urine?
    a. Calcium b. Phosphorous
    c. Iron d. Copper
15. Cooking of the food by hot air oven is _____.
    a. Roasting b. Grilling
    c. Frying d. Baking

II. Write short answer for the following questions

1. Define Nutrition?
2. Define Malnutrition?
3. Differentiate between balanced diet and malnutrition?

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4. What is food adulteration?
5. Write the functions of carbohydrates?
6. State the reasons to cook the food?
7. List the deficiency disease caused by minerals?
8. What is boiling?
9. List any three food preservation methods?
10. Write the functions of potassium?

III. Write short notes for the following questions

1. Explain the classification of carbohydrates
2. Write the functions of fat.
3. Write about the deficiency syndrome of vitamin A.
4. What are the benefits of cooking?
5. Explain about vitamin C.

IV. Answer the following questions in detail

1. Discuss in detail about methods of cooking with suitable examples.
2. Discuss detail about fat soluble vitamins in terms of sources, requirements, functions and deficiency disorders.
3. Write the sources, daily requirements, functions and deficiencies of vitamin B complex?
4. What is food preservation? Write in detail about the method of preservation?

REFERENCES

1. Jain, A.K. (2013) Nutrition and Health, 1st Edition, Avichal publication, Sirmour Himachal Pradesh.
2. Darshan Sohi. (2012) Nutrition and dietetics, 1st Edition, Vikas & Company, Jalandhar.
3. Mash, S. (2011) Food and nutrition, 2nd Edition,.Lotus publishers, Jalandhar.
4. Srilakshmi,B. (2016) Nutrition Science, 5th Edition, New Age International Publishers, New Delhi.

WEBLINKS

- https://www.healthline.com/health/balanced-diet.
- https://www.safefood.eu/Healthy-Eating/What-is-a-balanced-diet/The-Food-Pyramid.aspx.
- https://www.cnpp.usda.gov/sites/default/files/archived_projects/FGPPamphlet.pdf.
- http://nutritionfoundationofindia.res.in/PPT-2011/Seven17-18teen/Dr-B-Sesikeran.pdf.

Unit 2



COMMUNICABLE DISEASES

LEARNING OBJECTIVES

At the end of this chapter, the students will be able to

- describe what is communicable disease are
- explain control and prevention of communicable diseases
- describe the surveillance concepts
- explain the approaches used in responding to epidemic

WR3C5

திருக்குறள்:

எதிரதாக் காக்கும் அறிவினார்க் கில்லை
அதிர வருவதோர் நோய்.

விளக்கம்:

வரப்போவதை முன்னே அறிந்து காத்துக் கொள்ளவல்ல அறிவுடையவர்க்கு, அவர் நடுங்கும் படியாக வரக்கூடிய துன்பம் ஒன்றும் இல்லை.

Explanation:

No terrifying calamity will happen to the wise, Who (foresee) and guard against coming evils.

2.1 INTRODUCTION

Which affects the structure or functions of human being with specific symptom is called disease or disorder.

Classification of disease

- **Communicable**
- **Non communicable**

2.2 Terminologies

1. Incubation period

The time taken to show the first clinical symptoms to appear after infection.

2. Vector

Any living carrier that carries and transfers an infectious agent into another living organism is known as vector. E.g: Flies, Mosquito.

3. Isolation

Separation of an infected organism, after the development of infection, from other organism, for a period of communicability.

4. Host

A person or an animal harbours the infectious agent.

5. Infectious agent

All infection causing agents are known as infectious agents. E.g: Virus, Bacteria, Nematodes, Arthropods etc.

6. Transmission

It is the process of spreading the infection from one medium to another medium. E.g: Touch, inhalation, sexual contact, infected discharges.

7. Contagious disease

It means capable of being transmitted from one human to another human via direct or indirect contact. E.g : Measles

8. Epidemiology

It is the study of distribution and determination of disease conditions among the populations.

9. Epidemic

An epidemic is the rapid spread of disease to a large number of people with in an area in a short period of time.

10. Pandemic

Pandemic is a disease that spreads over a whole country or the whole world.

11. Endemic

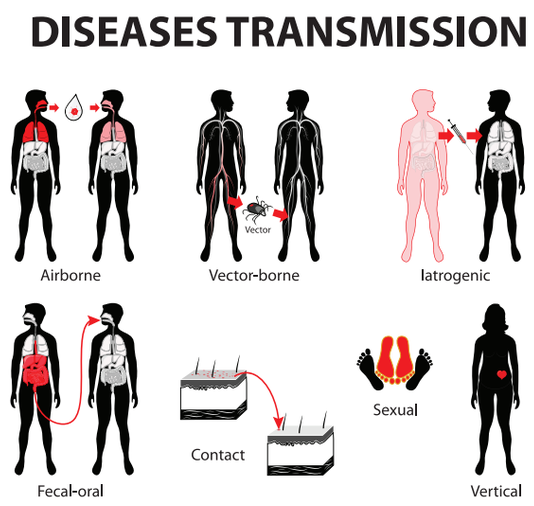
Endemic mean a disease that is always present in a population with in a geographic area.

12. Quarantine

Quarantine means separates and restricts the movement of people who were exposed to a contagious disease.

2.3 Communicable disease is classified based on the agents

- Water borne diseases
- Air borne diseases
- Disease Transmitted through Arthopods
- Disease Transmitted through Animals
- Disease Transmitted through Contact.



You can call disease as illness, sickness, ill health alinment, disability, defect and infinity.

2.4 WATER BORNE DISEASES

The disease that can be spread through contaminated water is called water borne diseases, it can be involve bacterial, viral or protozoan organisms.

Some example

Disease	Organisms
Cholera	Bacteria
Hepatitis	Virus
Giardia	Protozoan

There are some most dangerous water born disease in India are Cholera, Typhoid, Diarrhoea, Hepatitis A.

2.4.1 Cholera

Definition

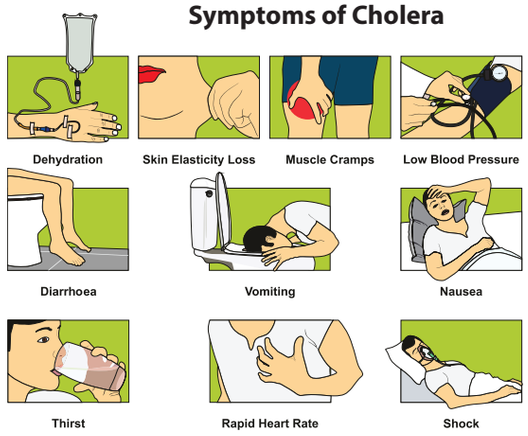
Cholera is the most common disease caused due to consumption of contaminated water.

Causative organism

vibrio cholera

Incubation period: Few hours to 3 days

Symptoms of cholera



- Rice water stools
- Nausea
- Diarrhoea
- Low blood pressure
- Muscle cramp
- Dry skin
- Sunken eyes
- Dehydration

Management of cholera

- Replacing fluids that are lost from body through diarrhoea.
- Oral rehydration solution
- Replacement of fluids through intravenously
- Antibiotics [tetracycline, ciprofloxin] and zinc supplements are important to treating the cholera.

Preventive measures of cholera

- Always drink pure and safe water
- Wash hand before preparing food
- Wash hand with soap and water
- Avoid raw and undercooked food intake
- Always prefer boiled filtered water.

2.4.2 Typhoid

It is an acute illness, associated with constant high fever, which is caused by bacteria Salmonella typhi. This is transmitted through water and food and found in the feces of the infected person. Other name of typhoid fever is entric fever.

Causative organism

- Salmonella typhi

Incubation period

- 8 to 14 days

Symptoms of Typhoid

- Loss of appetite
- Weakness
- Abdominal pain
- Vomiting
- Diarrhoea or constipation
- High fever
- Head ache

Management

Antibiotics [Trimethoprim-sulfamethoxazole, Ampicillin and Ciprofloxacin]. are the most important to treat the infection, for the complete removal of the bacteria.

Typhoid vaccines are recommended for where there is a risk of typhoid is very high.

Preventive Measures

- Drink pure and safe water
- Avoid raw fruits and vegetables
- Street food to be avoided
- Wash hand before and after using toilets.

2.5 DISEASES TRANSMITTED THROUGH AIR

Air borne disease are spread, when droplets of pathogens are expelled into the air, while coughing , sneezing or talking. The pathogen can remain in air for several hours.

Types of Airborne Diseases

Viral Diseases	Bacterial Diseases	Fungal Diseases
Common cold	Tuberculosis	Sick building syndrome
Flu	Pneumonia	
Measles	Whooping cough	
Mumps	Diphtheria	
Rubella	Meningitis	
Chicken pox	Anthrax	

2.5.1 CORONA - COVID – 19

Introduction:

Coronavirus disease (COVID – 19) is an infectious disease caused by SARS – COV and was discovered in December 2019 in Wuhan, China

Causative agent: Coronavirus

Incubation period: 1-27 days

Signs & Symptoms:

- Fever
- Dry Cough, Sneezing, Running Nose
- Head Ache, Body Pain
- Reduction of Respiration
- Sore Throat, Odourless,

Investigations:

- Travel History to endemic countries.
- Chest X – ray
- Chest CT Scan
- PCR Test

Management:

Supportive Treatment:

- Antihistamine
- Analgesics
- Hydroxychloroquine
- Ribavirin

Nursing Care:

- Use sterile techniques to prevent the spread of disease
- To reduce the temperature use antipyretics and cold applications
- Administer oxygen, Breathing Exercise and being prone position may ease the respiration



- Health Education
  - Home Care
  - Prevention of Infection
  - Food

Prevention:

- Corona vaccine
  - Covishield
  - Covaxin
- Hand wash with sanitizer
  - Masking
  - Quarantine the affected person.

2.5.2 Tuberculosis

Tuberculosis (TB) is a potentially fatal contagious disease. That can affect almost any part of the body. It's mainly an infection of lung.

Causative organism

- Mycobacterium tuberculi

Incubation period

- 2 to 12 weeks

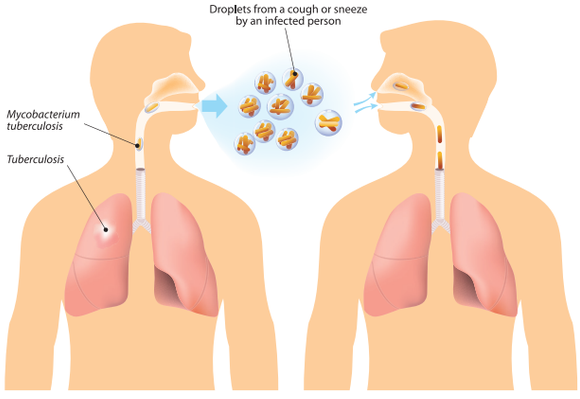
Classification of TB

Pulmonary TB

- Primary disease
- Secondary disease

Extra pulmonary

- Lymph node TB
- Pleural TB
- TB of upper airways
- Skeletal TB
- Genitourinary TB
- Miliary TB
- Pericardial
- Gastrointestinal TB
- Tuberculous Meningitis



Transmission of TB

- Cough droplet
- Crowded places with poor ventilation
- Splitting of saliva

Symptoms

- Chest pain
- Coughing with bloody sputum
- Shortness of breath
- Cloudy and Reddish urine
- Evening raise in temperature
- Fatigue

Diagnosis

- Bacteriological Test (Zeihl – Neelsen stain)
- Sputum culture test
- Chest x-ray
- Nucleic acid amplification
- Mantoux test (PPD)

Management

- **First line drugs: Eg: Isoniazid**, Rifampin, Ethambutal
- **Second line drugs: Eg:** Cycloserine, Ethionamide, Levofloxacin

Dosage Regimen

- Intensive phase + Continuation phase
- HREZ (2months) + HRE (4months)

DOTS- Directly Observed Treatment Short courses is the internationally recommended strategy for TB

Preventive Measures

- Mask
- BCG Vaccine
- Regular medical follow up
- Isolation of patient
- Ventilation
- Natural sunlight
- UV germicidal radiation

2.6 DISEASE TRANSMITTED THROUGH ARTHROPOD

Arthropod – borne disease are transmitted by arthopods, which includes insects , spider and crustaceans

Arthropod – Borne Diseases

- Malaria – Anopheles mosquito
- Yellow fever – Aedes mosquito
- Dengue fever – Aedes mosquito
- Encephalitis – Aedes / Culex/ fleas
- Epidemic typhus – Body louse
- Bubonic plague – flea

2.6.1 Malaria

Malaria is a life - threatening disease it is transmitted through the bite of an infected anopheles mosquito. The mosquitoes carry the plasmodium parasite that parasite is released into bloodstream.

Causative organism of Malaria

- Plasmodium vivax
- plasmodium Ovale
- plasmodium malariae
- plasmodium falciparum

Incubation period

- 9 to 14days

Mode of transmission

- Organ transplant
- Blood transfusion

Symptoms

- Fever with chills
- Headache
- Vomiting
- Tiredness
- Sweat

Diagnosis

- Blood Test (Smear-mp)

Management

- Chloroquine

Complications

- Cerebral Malaria
- Organ failure
- Anemia
- Low blood Sugar

Preventive measures

Mosquito control methods



Spraying clothing and skin



Sleeping in Mosquito net



Covering the skin



Spraying in home



2.6.2 Dengue

Dengue is a viral disease , it is transmitted by the infective bite of female Aedes Aegypti mosquito, it occurs in two forms.

- Dengue fever
- Dengue Haemorrhagic

Causative organism

- Aedes Aegypti Mosquito

Incubation period

- 2 to 7 days

Signs & Symptoms

- Abrupt onset of high fever
- Severe frontal headache
- Pain behind the eyes which worsens with eye movement
- Muscle and joint pains
- Loss of sense of taste and appetite
- Measles like rash over chest and upper limbs
- Nausea and vomiting

Diagnosis

- Haemagglutination inhibition (HI) test
- Compliment Fixation Test (CFT)
- Neutralization test (NT)
- IGM – capture Enzyme –
- Assay (MAC – ELISA)
- IGM – ELISA
- Rapid Diagnostic tests (NS 1)

Management

Management of Dengue fever is symptomatic and supportive management.

- Bed rest during the acute phase.
- Use cold sponging to keep temperature below 39° C.
- Antipyretics may be used to lower the body temperature. Aspirin/ NSAID should be avoided since it may cause gastritis, vomiting, acidosis and platelet dysfunction.
- oral fluid and electrolyte therapy are recommended for patients with excessive sweating or vomiting

2.7 DISEASE TRANSMITTED THROUGH ANIMALS

A disease that is naturally transmitted from animals to human is known as a zoonosis

Modes of transmission

- Contact with pets
- Contact with soil and water which is contaminated by animals
- Consuming of unpasteurized dairy products

Zoonotic Diseases

- Anthrax
- Cat_ scratch diseases
- Leptospirosis
- Q fever
- Ringworm
- Rabies
- Tetanus

2.7.1 Rabies

Rabies:

Rabies also known as hydrophobia (fear of water) is primarily a disease of warm blooded animal such as dogs, jackals, wolves etc.

Causative Organism:

The causative agent is called Iyssa Virus type I.

Mode of Transmission:

- By the bite of rabid animals
- By the licks on abroaded skin (or) Mucosa.

Incunbation Period:

1 to 3 months usually

Clinical Manifestations:

- Headache
- Slight fever
- Malaise
- Twitching
- Pain and numbness at the site of the bite.
- Intolerance to noise and bright light.
- Difficulty in swallowing
- Fear of water
- Intense spasm on being offered food of fluids.

Treatment:

- Local treatment: Wounds should be washed immediately with soap and water for several minutes and then treated with alcohol or tincture of iodine to kill as much of the residual virus as possible.
- Then apply a dressing and bandage. Dress the wound every other day until the wound is healed.
- Observe the animal for 10 days.
- Anti-Rabies Vaccine is given
- The vaccination schedule recommended consists of 6 doses (1 ml each) on days 0,3,7,14,28,90 and booster dose on day go. Injections are given intramuscularly in deltoid region.
- Isolation
- Protect from exposure to cold draughts or other stimuli
- Universal Precaution.

Prevention and Control:

- Registration and licensing of all domestic dogs.
- Destroy all stray and ownerless dogs.
- Restraint of dogs in public places.
- Health education of people regarding the care of drugs and prevention of rabies.
- Vaccinate all dogs when they are 3 months of age.
- Booster dose every year or 3 years.

2.7.2 Tetanus

Tetanus is caused by the infection of wounds by bacterium Clostridium tetani, which produces toxin that damages the nervous system and muscles



Causative organism:
Bacterium Clostridium Tetani

Incubation period
3–21 days

Signs and symptoms

- Muscle rigidity

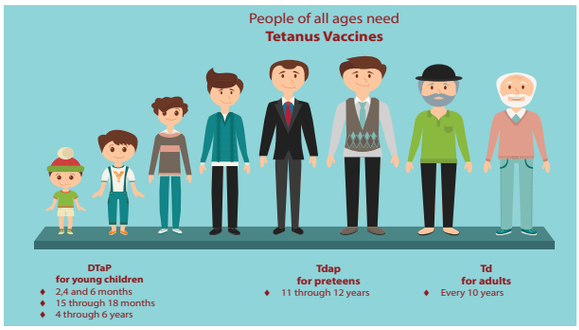
- Lockjaw an inability to open the mouth wide
- Firmness of the Abdominal muscles
- Painful muscle spasm
- Cardiac arrhythmia
- High blood pressure

Diagnosis

- Diagnosis is entirely clinical
- Clostridium tetani is recovered from the wound in only 30% of patients

Management

- Careful wound cleaning is essential when treating any wound.
- Protection against tetanus with vaccine
- Analgesic should be administered to prevent pain.
- Antibiotic therapy (Metronidazole or Penicillin)
- Patients with mild muscular spasms may be treated with infusions of diazepam



Opisthotonos

Bridge or Arch like position, spasm of the muscles causing backward arching of the head, neck and spine in severe tetanus.

Preventive methods:

- Inj. T.T (Tetanus Toxoid)

2.8 DISEASE TRANSMITTED THROUGH CONTACT

Direct Contact:

Direct contact occurs through skin to skin contact, kissing and sexual contact. This is commonly known as person to person contact diseases. Transmission occurs when a person with an infectious disease touches or exchanges body fluids with someone else.

Examples of skin contact : Scabies, Impetigo, Ringworm, shingles and athlete's foot.

2.8.1 Scabies

Scabies is a skin disease

Causative Organisms:

Itch mite (Sarcoptes scabbier(or) Aearus scabbier)

Mode of transmission:

Infected person.

Clinical manifestation:

- Itching
- Examination reveals follicular lesions in the hands and wrist, extensor aspect of elbow, axillae, buttocks lower abdomen, feet and ankles/ palms, also affects the breast and genitals.
- Infection leads to crusted popular and pustules.

Treatment:

- Benzyl benzoate 25% is an effective sarcopticide. It should be applied with a

brush (or) shaving brush to every in to the body, below the chin including the soles the feet and allowed to dry.

- In the case of babies the head must also be treated.
- The application should be repeated after 12 hours.
- All the undergarments, cloths and bed linen are changed and washed.

Preventions:

- Before commencing the treatment the patient is given good scrub with soap and hot water.
- Avoid close contact with infected person
- The Contaminated clothes and bed linen should be disinfected properly
- Avoid playing with infected children.

Sexually Transmitted disease

Disease which are transmitted from person to person through intimate control is called sexually transmitted disease (STD) STD'S are dangers because they are easily spread.

Mode of Transmission

STD's are disease and infections which are capable of being spread from person to person via.

- Sexual Intercourse
- Oral–genital contact or in non-sexual ways
- IV Drugs
- Congenitally transmitted

Common STD'S

- HIV and AIDS
- Gonorrhea
- Genital Herpes (hsv-2)
- Genital warts (HPV)
- Hepatitis B
- Pubic Lice
- Syphilis
- Trichomoniasis

2.8.2 HIV and AIDS

HIV is a virus that damages the immune systems, which helps the body to off infection.

Causative organism

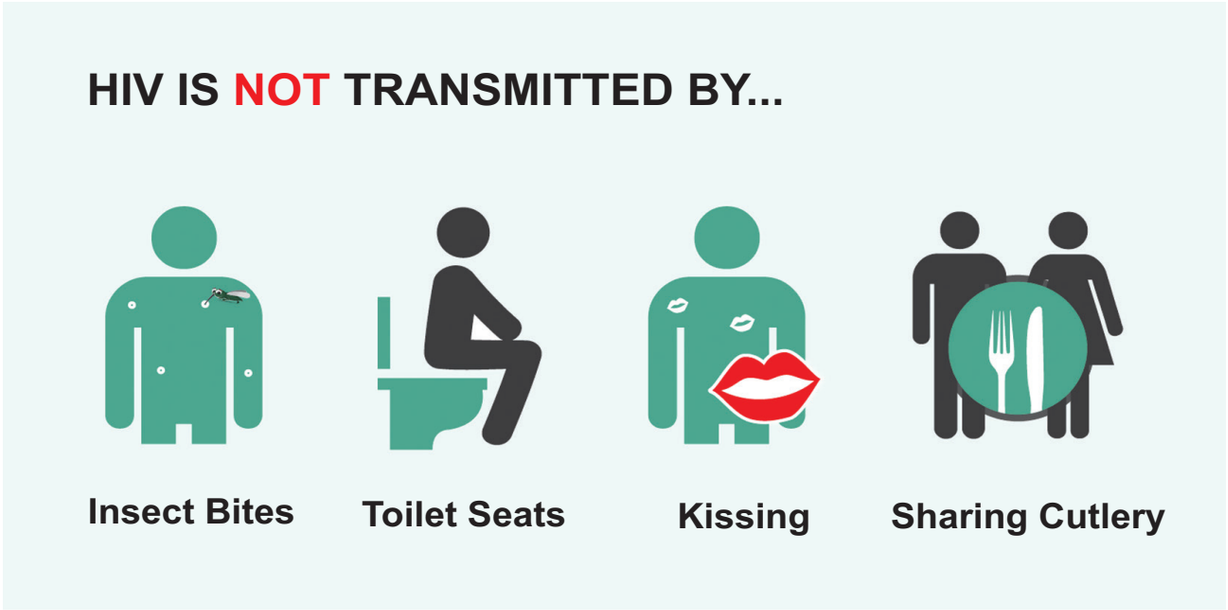
- Human immunodeficiency virus

Incubation period

- Between 2 weeks to months, or longer
- Through Body

Transmission of HIV

- Body Fluids
- Blood
- Breast milk
- Semen
- Vaginal and rectal fluids
- Sharing needles or Syringes.
- Sharing tattoo equipment
- During pregnancy from mother to baby
- Through (pre –mastication) chewing baby's food before feeding to them.Symptoms
- Dry , flaky skin (xeroderma)
- Chronic fatigue



- Fever (pyrexia)
- Heavy night sweat
- Rapid weight loss
- Swollen lymph nodes
- While spots on tongue, mouth, throat
- Recurrent or chronic diarrhoea
- Anxiety and depression

Diagnosis

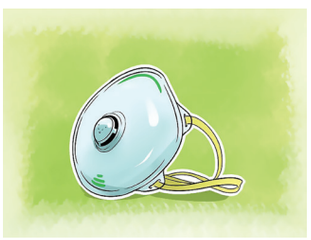
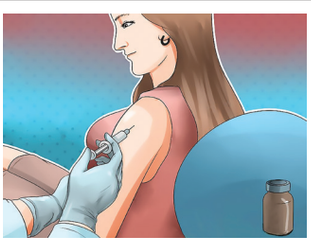
- Antibody /Antigen test (After18-45days after exposure of HIV
- Antibody Test (23 and 90 days after transmission)
- Nucleic acid test

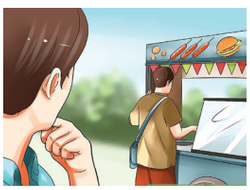
Management

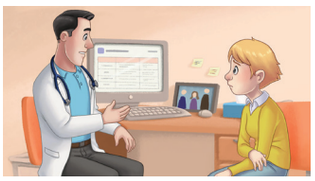
- Antiretroviral therapy, its grouped into six classes
- NRTIs (nucleoside reverse trans criptase inhibitors
- NNRTIs (non-nucleoside reverse trans criptase inhibitors
- Protease inhibitors
- Fusion inhibitions
- CCR5 Antagonists
- Integrase stand transfer inhibitions

HIV-Prevention

- Get tested for HIV
- Limit sexual partners
- Avoid sharing needless
- Stay away from drugs
- Avoid blood contact
- Practice safe sex
- Take action if you have exposed to HIV

Common Control measures of communicable disease	
	Wash your hands before and after contact with an infected person. All bodily fluids from the infected person are considered contagious. Hand washing is one of the most standard ways to avoid infection. Wash your hands throughly.
	Wash for the appropriate amount of time, or use hand sanitizer. Use an alcohol-based hand sanitizer. Alcohol-based hand sanitizer can kill microorganism.
	Take precautions against diseases that are transmitted through direct contact. Gloves create a barrier between your hands and any infected surface. Wear Goggles, Wear Gown.
	Take precautions against diseases that are spread through droplets. Wear a face mask in case the person sneezes or coughs. When a person sneezes or coughs, microorganisms can be projected into the air. Face masks can still help to protect.
	Protect yourself from airborne diseases. N95 face mask that can protect you against these tiny airborne diseases. Keep the person special room at the hospital.
	Get vaccinated against communicable diseases when possible. Vaccination process involves exposing you to a controlled amount of the virus Immune system gains the ability to fight the virus. Talk to your doctor about what vaccines may be available for the diseases in your specific area. Vaccine yourself, if you are planning on traveling to areas that have communicable disease.

	Clean your house throughly. Mops and buckets are considered one of the dirtiest tools at home Use two buckets when mopping. One for the detergent and one for rinsing.
	Ensure proper waste management. Spoiled foods must be properly disposed of and trash cans should be kept sealed at all times to avoid attracting pests like rodents and cockroaches. Garbage also can be a place for microorganisms to thrive in.
	Remove any stagnant water from around your home. Stagnant water can be a place for mosquitoes and other intermediate carriers of communicable diseases.
	Avoid drinking contaminated water. Water should be brought to a boiling point for at least 15 minutes before removing it from the fire. This ensures that microorganisms in the water are killed.
	Avoid eating street foods. It is hard to know how street foods have been prepared, so try to avoid them as much as possible. If food is undercooked, or prepared in dirty environments, there is a good chance that it could cause you to get sick.
	Practice safe sex. There are communicable diseases that can be transmitted through unprotected sexual intercourse. If you are sexually active, use a condom because it can serve as a physical barrier between your genitals and bodily fluids.
	Avoid sharing personal items. This includes eating utensils, toothbrush, razor, handkerchiefs and nail clippers. These items are potential sources of harmful microorganisms.

	Increase your self-awareness. Watch the news and keep track of any outbreaks of communicable diseases in your area. Maintain a good understanding of how those diseases are transmitted.
	Understand that there must be a causative agent . Know that there must be a reservoir of infection.
	Be aware that there must be a portal of exit
	Recognize the different modes of transmission. Direct contact – the infection is transferred from person to person. Indirect contact – the infection is transferred when a person comes in contact with a contaminated object. Droplet spread – the infection is transferred through respiratory secretions.
	Understand that there must be a portal of entry
	Be aware that the microorganism must have a susceptible host
	Know that avoiding communicable diseases is best done by breaking the chain of infection

CONCLUSION

Communicable diseases are transmittable from one person to another person, with the help of the agent like water, air, parasites, Animals and through human. These are the carriers of disease and spread in epidemically, endemically and pandemically communicable disease are preventable with proper management and by acquiring knowledge on the disease condition, what is the disease, and what are symptoms, causes and preventive measures and treatment regimen. In order to control the communicable disease, all should know the common control measures and how to practice the measure in day today life.

A-Z GLOSSARY

Antibiotic (ஆண்டிபயாடிக்)	-	The substances or chemicals that can kill or inhibit the growth of bacteria.
Antimicrobial (நுண்ணுயிர்)	-	The substances that can destroy or inhibit the growth of pathogenic groups of Microorganism [Bacteria, Viruses, parasites and fungi]
Bronchoscopy (பிரோன்கோஸ்கோபி)	-	Bronchoscopy is an technique of visualizing the inside of the airways for diagnostic and therapeutic purpose.
Diphtheria (தொண்டை அழற்சி)	-	Diphtheria is a serious bacterial infection that affects the mucous membrane of the throat and nose .
Hyperesthesia (தூண்டிய உணர்வு)	-	Hyperasthesia is an increase in the sensitivity of any of your senses, such as sight, sound, touch and smell.
Malaise (உடல்சோர்வு)	-	A general sense of being unwell, often accompanied by Fatigue, diffuse pain or lack of interest in activities.
Toxemia (இரத்தத்தில் நச்சு)	-	Blood poisoning by toxins from a local bacterial infection.
Vaccine (தடுப்பூசி)	-	Vaccine is a biological preparation that provides active acquired immunity to a particular disease.

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EVALUATION

I Choose the correct answer

1. Which is the causative organism of Cholera?
   a. Vibrio Cholera
   b. Salmonella Typhi
   c. Rotavirus d. Norovirus
2. Mention the Incubation period of cholera?
   a. 3 – 5 days b. few hours – 3 days
   c. 1 – 3 days d. 5 – 10 days
3. Which is the disease that rice water stool appear?
   a. Typhoid b. Hepatitis – A
   c. Cholera d. Diarrhoea
4. What is the other name of Typhoid?
   a. Enteric fever b. Yellow fever
   c. Swine flu d. Encephalitis
5. Mention the preventive measures of Tuberculosis?
   a. BCG Vaccine b. O.P.V
   c. T.T – Vaccine d. Varicella Vaccine
6. The test that is done to diagnose Tuberculosis?
   a. Mantoux Test b. Widal test
   c. RTPCR d. H1 N1 Test
7. Mention the complication of malaria?
   a. Shortness of breath b. Anaemia
   c. Dehydration d. Fever
8. Which is the mode of transmission of malaria?
   a. Blood Transfusion b. Skin Contact
   c. Contaminated Food and Drink
   d. Droplets of infected person
9. Severe frontal headache found in _____ disease.
   a. Dengue b. Malaria
   c. Cholera d. Typhoid
10. Mention the incubation period of dengue fever?
    a. 1 – 7 days b. 2 – 7 days
    c. 1 – 6 days d. 2 – 6 days
11. For patients with excessive sweating or vomiting _____ therapy is recommended.
    a. Electrolyte b. Medicine
    c. Isolation d. Surgery
12. A disease that is naturally transmitted from animals to human is known as _____
    a. Zoonosis b. Leptospirosis
    c. STD d. Vector
13. Which Causative organism produces toxin that damages the nervous system and muscles?
    a. Salmonella Typhi
    b. Vibrio Cholera
    c. Clostridium tetani
    d. Mycobacterium
14. Identify the symptom of Tetanus?
    a. Lock Jaw b. Rice water Stool
    c. Cough d. Fever
15. Heavy night sweat found in _____ disease.
    a. AIDS b. Malaria
    c. Tetanus d. Typhoid

II Write Brief answers for the following questions

1. What is meant by Incubation period?
2. What is isolation?
3. What is meant by pandemic? Give example.
4. Write the symptoms of Cholera?
5. What are the preventive measures of Typhoid fever?
6. Write the symptoms of Corona.
7. Write the classification of Tuberculosis?
8. Write the signs and symptoms of Tetanus.
9. Write the preventive measures of HIV.
10. Write the types of Scabies.

III Write short notes for the following questions

1. What are the preventive measures of Cholera?
2. Write the symptoms and managements of Typhoid.
3. Explain the management of Tuberculosis?
4. Write the management of Tetanus.
5. Write the management and preventive measures of Scabies.

IV Write in detail

1. Write in detail about the common control measures of communicable disease.
2. Explain in detail about Rabies.
3. Write an essay about water borne diseases.
4. Write in detail about dengue fever
5. Write an essay about corona.

REFERENCES

1. Park. K Textbook of preventive and social medicine (2013), 22nd edition, Banarsidas Bhanot publishers, Jabalpur.
2. Mary .A. Nies Community/Public health nursing (2007), 4th edition, Saunders Elsevier publication.
3. Kasturi Sundar Rao, An introduction to community health nursing, (2004), fourth edition, B.I. publication.

WEBLINKS

- www.cms.gov/medicare
- https://www.healthline.com
- https://researchguides.uic.edu

Unit 3



NON COMMUNICABLE DISEASES

LEARNING OBJECTIVES

At the end of this chapter, the students ill be able to

GQUE4

- define the term NCD.
- gain basic knowledge about types of NCD.
- gain knowledge about the disorders of Gastro intestinal, Cardiovascular, Respiratory, Excretory, Musculoskeletal and occupational
- discuss the causes signs & symptoms medical management and complication.
- identify the nursing role for NCD.

திருக்குறள்:

மிகினும் குறையினும் நோய்செய்யும் நூலோர்

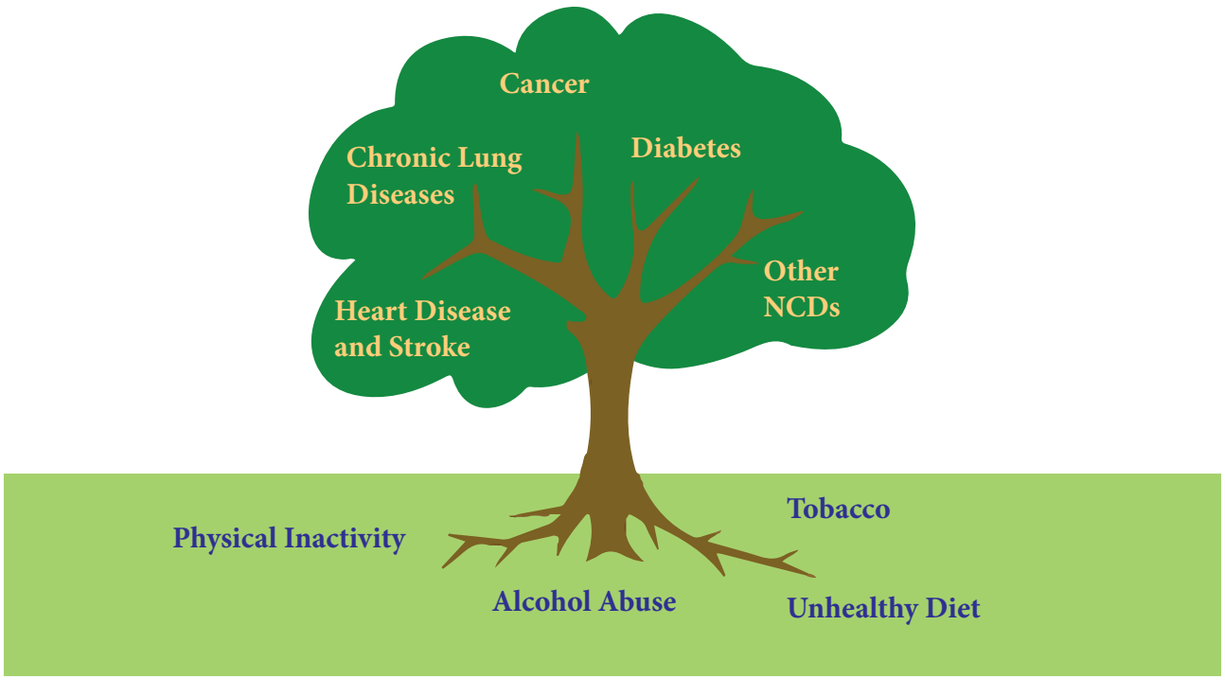
வளிமுதலா எண்ணிய மூன்று.

விளக்கம்:

மருத்துவ நூலோர் வாதம் பித்தம் சிலேத்துவம் என எண்ணிய மூன்று அளவுக்கு மிகுந்தாலும் குறைந்தாலும் நோய் உண்டாகும்.

Explanation:

If food and work are (either) excessive or deficient the three things enumerated by (medical) writers flatulence, biliousness and phlegm will cause (one) disease.



3.1 INTRODUCTION

Non communicable disease (NCD) is a medical condition or disease that is not caused by infectious agents. Non communicable diseases are usually caused by genetic or lifestyle factors.

Four types of NCDs

- Cardio vascular diseases
- Cancer
- Diabetes and
- Chronic respiratory diseases.

NCDs NON COMMUNICABLE DISEASES

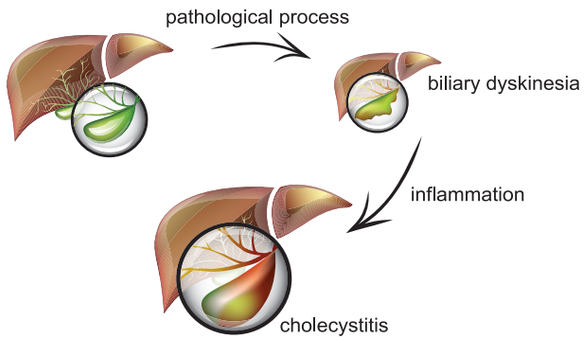
Physical activity, low fruit and vegetable intake, high fast food consumption and cholesterol, smoking and alcohol are predominant causes of non communicable disease.

3.2 GASTRO INTESTINAL DISORDERS

Cholecystitis

Appendicitis

3.2.1 Cholecystitis



Inflammation of the gall bladder

Causes

- Exact causes is not known
- Gall stones and kinking or twisting of bile duct

Risk factor

- Sedentary life style

- ❖ Obesity

Signs & Symptoms

- ❖ Pain on right upper quadrant/epigastric or both
- ❖ Nausea
- ❖ Vomiting
- ❖ Increased temperature
- ❖ Mild jaundice

Investigations

- ❖ Ultrasonography
- ❖ Abdominal X-ray
- ❖ Blood cell count Test (TC, DC)

Management

Medical Management

- ❖ Hospitalization
- ❖ Administration of antibiotics
- ❖ Administration of parenteral analgesic
- ❖ Insertion of nasogastric tube if patient has vomiting
- ❖ Maintain of fluid and electrolyte balance with IV fluids

Surgical Management

- ❖ Cholecystectomy (Removal of Gall bladder by surgery)

Nursing management

- ❖ History collection
- ❖ Client symptoms should be carefully monitored
- ❖ Check vital signs
- ❖ Administer pain medication
- ❖ Administer IV fluids
- ❖ Monitor intake output chart
- ❖ Watch for signs for dehydration

Complications

- ❖ Biliary Colic
- ❖ Acute Cholecystitis
  - Gallbladder Empyema
  - Gallbladder Gangrene
  - Gallbladder Perforation
- ❖ Obstructive Jaundice
- ❖ Ascending Cholangitis
- ❖ Pancreatitis
- ❖ Gallstone ileus (rare)

3.2.2 Appendicitis

Appendicitis is an inflammation of the vermiform appendix caused by obstruction of the intestinal lumen from infection, stricture, fecal mass, foreign body or tumour.

Causes

1. Obstruction of the appendix causes accumulation of mucus and swelling leading to appendicitis.
2. Obstruction occurs due to the accumulation of faecal matter, enlargement of lymphoid follicles, intestinal worms, and tumours.

The appendix is a finger – like pouch present at the end of the colon on the lower side of the right abdomen.

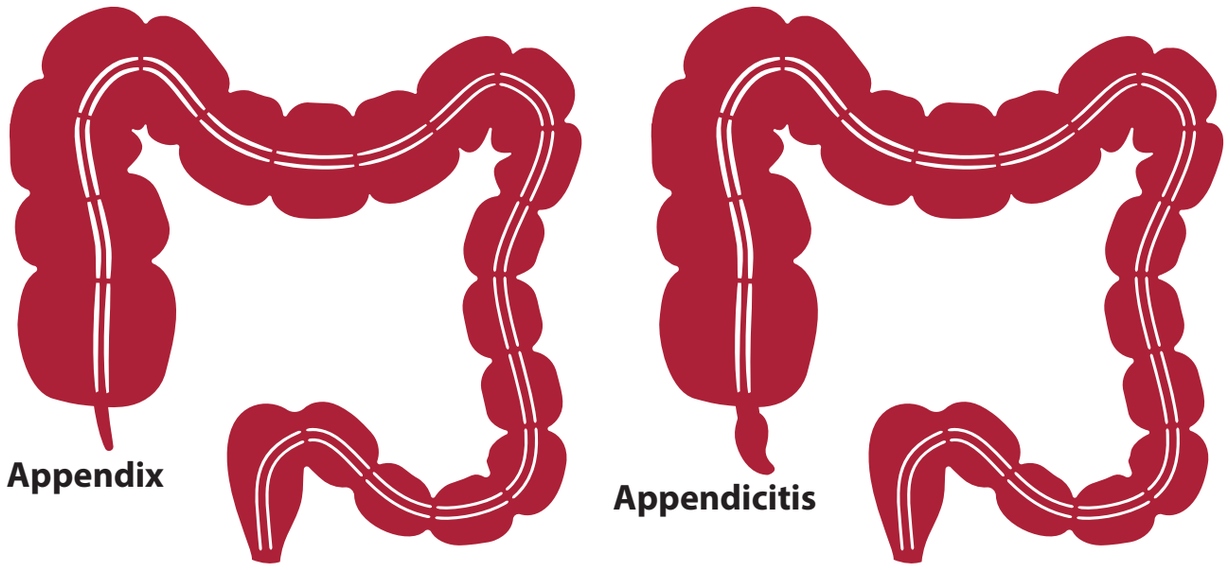
Pathophysiology

Obstruction of the intestinal lumen is followed by edema, infection and ischemia of the appendix. As intraluminal tension develops, necrosis and perforation usually occur.

Signs and Symptoms

The typical symptoms of acute appendicitis are

1. Severe pain in the right side of the lower abdomen.
2. Rebound tenderness at McBurney's point.



3. Anoxia.
4. Low-grade fever.
5. Nausea and vomiting.
6. Constipation or diarrhoea occurs.

Diagnosis

1. Physical examination. Rebound tenderness at Mc Burney's point.
2. Laboratory test: complete blood count will show

- ❖ Leucocytosis
- ❖ Urinalysis

3. Abdominal X-ray to visualize shadow consistent with fecalith in appendix.
4. U.S.G. Abdomen

Management

Surgery: The standard Management for appendicitis is surgery that involeves removal of the appendix. The procedure is called appendectomy that can be done in two methods:

- ❖ Laparotomy – a single incision is made to remove the appendix
- ❖ Laparoscopic appendectomy – several small incisions are made using special surgical tools to remove the appendix. The advantage of this surgery is fast recovery

Complication

- ❖ Peritonitis
- ❖ Perforation
- ❖ Abscess formation

3.3 CARDIO VASCULAR DISORDERS

Acute Myocardial Infarction

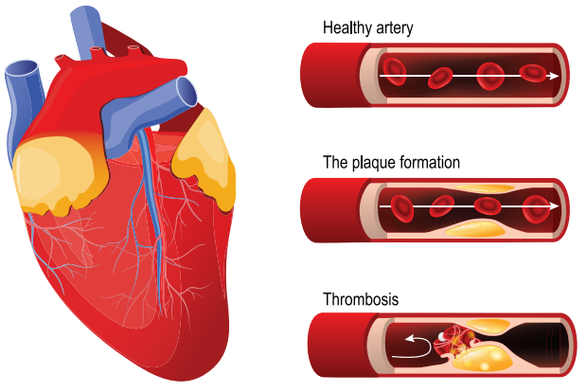
Anaemia

3.3.1 Acute Myocardial Infarction

Myocardial infarction refers to a dynamic process by which one or more regions of myocardium experience prolonged decrease in oxygen supply because of insufficient coronary blood flow causing necrosis of tissue.

Causes

- Occlusion of a coronary artery
- Streneous physical activity
- Emotional stress such as anger
- Exposure to cold
- Thrombus formation



Signs & Symptoms

- Chest pain radiating to one or both arms, neck and back
- Dyspnea or orthopnea
- Shortness of breath
- Anxiety
- Systolic blood pressure less than 80 mm of Hg
- Tachycardia or bradycardia
- Weakness, cold, sweat, pallor
- Palpitation
- Peripheral cyanosis
- Nausea or vomiting

Investigations

- 12 lead ECG
- Echocardiography
- Trop-I
- serum CPK-MP and (CPK)
- Lipid Profile
- ESR

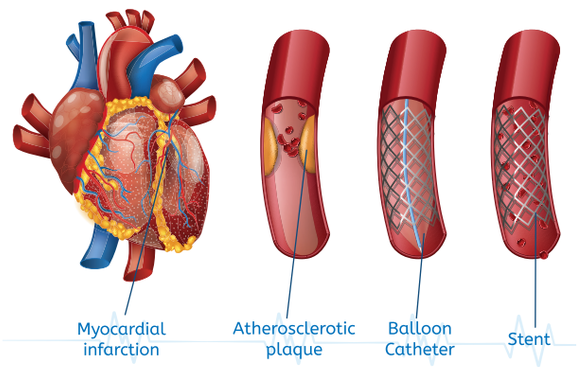
Management

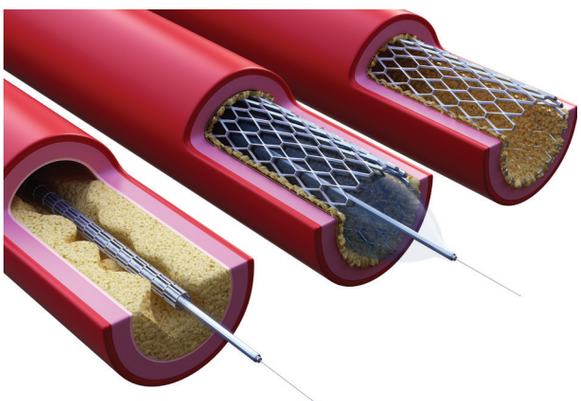
Medical Management

- Nitrates – help to relieve pain
- Calcium channel blockers – prevents vasodilation
- Beta-blockers
- Morphine-act as analgesics and sedatives
- Oxygen supply
- Heparin therapy
- Antiplatelet therapy

Surgical Management

- Angioplasty
- CABG



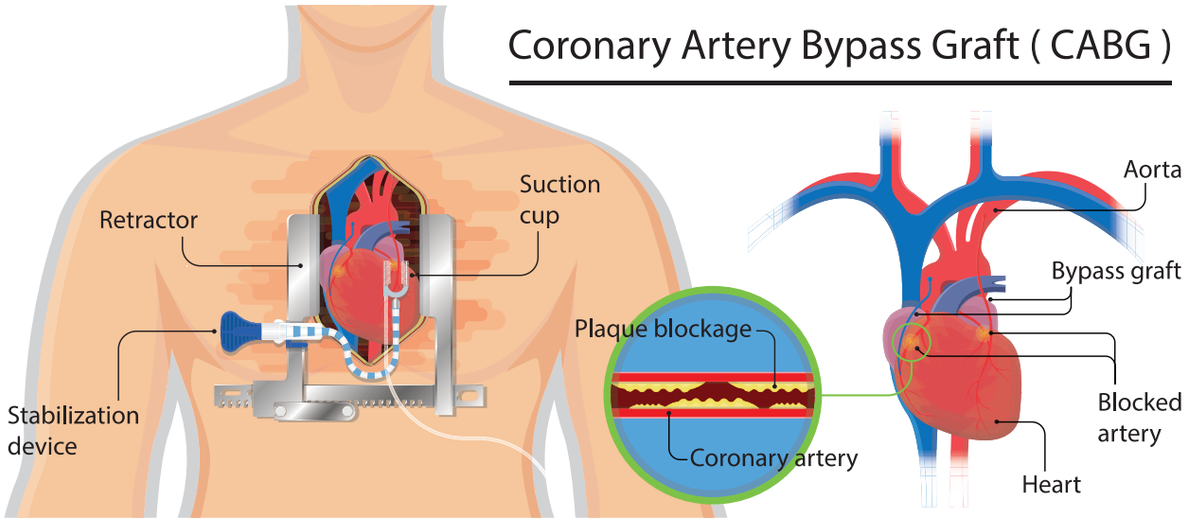


Nursing Management

- Provide proper rest
- Assess for previous health history regarding allergic medications, trauma etc
- Reassure the patient
- Monitor the vital signs
- Administer thrombolytic therapy
- Administer oxygen as required
- Assess the characteristic of chest pain including location, duration, and quality.
- Maintain intake output chart
- Instruct to avoid alcohol, smoking and physical activity
- Educate the patient to change life style and rehabilitation

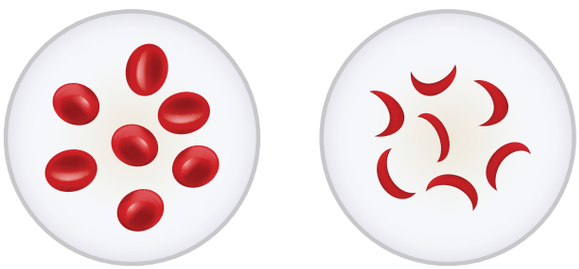
Complication

- Pulmonary embolism
- Pericarditis



- Shock
- Mitral incompetence
- Heart failure
- Rupture of the heart
- Phlebothrombosis
- Angina pectoris

3.3.2 Anaemia



Normal red blood cells

Sickle cells anemia

Anaemia is a condition in which there is a reduction in the number of red blood cells and a deficiency of haemoglobin resulting in decreased oxygen-carrying capacity.

Causes

1. Blood loss related to trauma
2. Decreased production of platelets.
3. Increased destruction of platelets
4. Decreased number of clotting factor.
5. Impairment of RBC production due to nutritional deficiency, (e.g Iron deficiency, folic deficiency, Vitamin B12 deficiency, Vitamin B6 deficiency).
6. Decreased erythrocyte production, bone narrow depression.

7. Increased erythrocyte destruction due to

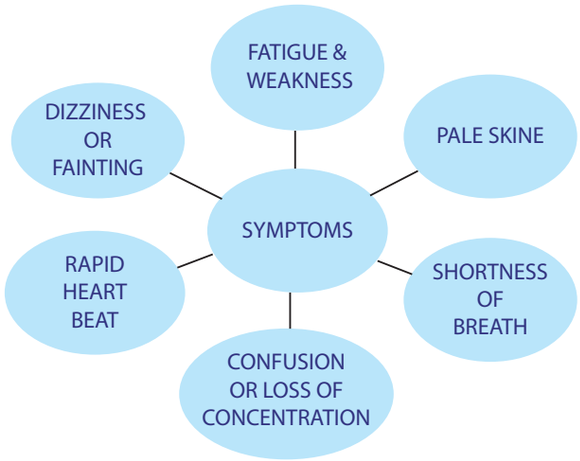
   i. Extrinsic factors
   - Drugs and chemicals
   - Infection
   - Antibody reaction

   ii. Intrinsic factors
   - Abnormalities of RBC membrane
   - Abnormal haemoglobin synthesis sickle cell, disease, thalasemia syndrome

Pathophysiology

RBCs and haemoglobin are normally formed at the same rate at which they are destroyed. Whenever formation of RBCs or haemoglobin is decreased or their destruction is increased, anaemia results.

Signs and Symptoms



Diagnosis

1. Complete blood count
2. Haemoglobin electrophoresis

Types of Anaemia

1. **Anaemia from blood loss:** Haemorrhage or continued slow bleeding will cause anaemia.

Management

Replace the blood cells by transfusion and at times administering iron supplements.

2. **Iron deficiency Anaemia:** It may result from faulty eating habits (Poor diets or hurrying meals).

Management

Take extra iron containing food.

3. **Pernicious Anaemia:** A patient with pernicious Anaemia lacks substances in the gastric juice called instrinsic factor, which is necessary to enable the body to absorb vitamin B_{12} from food.

Management

Take vitamin B_{12} containing foods and injection every 2 or 3 weeks will allow the person to live normally.

4. **Sickle cell anaemia:** It is genetic disease in which the red blood cells become sickle in shape due to the presence of abnormal haemoglobin.

Management

Citadels citrate, pentoxifylline, vanillin oil as anti sickly effects evaluated as adjunctive therapy for sickle cell anaemia. Blood transfusion and folic acid therapy is administered.

5. **Aplastic anaemia:** It results from disease of the bone marrow (where most blood cells are produced.) whereby the marrow is destroyed.

Management

Two methods of managements are currently employed. Bone marrow transplantation and Administration of immunosuppressive therapy with entity.

6. **Megaloblastic anaemia:** It is caused by deficiency of the vitamin B_{12} and folic acid. This shows identical bone marrow and peripheral blood changes, because both vitamins are essential for normal DNA synthesis.

Management

Injection B_{12} is administered, provide nutritious diet and folic acid 1 mg per day.

7. **Haemolytic anaemia:** The erythrocyte has a shortened life span.

Nursing Management

- Offer small amount of foods at frequent intervals
- Provide iron-rich foods and vitamins.
- Teach and assist with good hygienic practices
- Good dietary habits

Complication

- Mental sluggishness
- Growth retardation
- Delayed puberty related to growth retardation
- Cardiac failure related to collapse and shock resulting in death

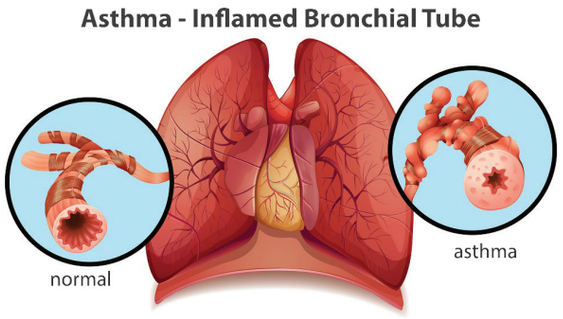
IRON - DAILY REQUIREMENT

- Children (ages 1-10): 7 to 10 mg per day
- Women (ages 19-50): 18 mg per day
- Pregnant Women: 27 mg per day
- Lactating Women: 9 to 10 mg per day
- Men (ages 19 and older): 8 mg per day

3.4 RESPIRATORY DISORDERS

Asthma

COPD (Chronic Obstructive Pulmonary Disease)



3.4.1 Asthma

Asthma is an inflammatory disease of the airway causing mucosal oedema and increased mucous production.

Causes

- Exposure to indoor and outdoor allergens
- Airway irritant

Risk factors

- Family history of bronchial asthma
- Exposure to airway irritants (weed, pollens, dust, strong odours, smoke)

Signs and Symptoms

- Non-Productive cough
- Dyspnea
- Diaphoresis
- Tachycardia
- Tachypnea
- Wheezing
- Cyanosis

Investigations

- Family and occupational history
- Increased esonophil counts

- ABG-Analysis
- Sputum for Culture
- Pulmonary function test

Medical management

- Corticosteroids
- Bronchodilators
- Oxygen therapy
- Nebulization

Nursing Mangement

- Increased fluid intake
- Coughing and breathing exercise
- Change of position frequently
- Administer broncho dilator
- Chest physiotherapy
- Suctioning
- Artificial airway if required
- Monitor ABG
- Observe signs of hypoxia
- Avoid smoking, weight gain and stress which increases the oxygen demand
- Provide psychological support

3.4.2 COPD (Chronic Obstructive Pulmonary Disease)

This is characterized by progressive airflow limitation that is not fully reversible. It includes chronic bronchitis, pulmonary emphysema and bronchial asthma.

Chronic bronchitis, is a chronic inflammation of the lower respiratory tract characterized by excessive mucous secretion, cough, and dyspnea associated with recurring infections of lower respiratory tract.

Pulmonary emphysema, is a complex lung disease characterized by destruction of the alveoli enlargement of distal air space, and break down of alveolar walls.

Causes

1. Cigarette smoking
2. Air pollution
3. Occupational exposure
4. Allergy
5. Autoimmunity
6. Infection
7. Genetic predisposition
8. Aging

Signs & Symptoms

Chronic bronchitis

- Productive cough
- Production of thick gelatinous sputum
- Wheezing and dyspnea

Emphysema

- Dyspnea
- Decreased exercise tolerance
- Minimal cough with mild expectoration
- Barrel chest

Investigations

- PFT – Pulmonary function Test
- ABG levels
- Chest X ray

Management

- Cessation of smoking
- Inhaled bronchodilators
- Inhaled and or oral corticosteroids
- Chest physiotherapy
- Oxygen administration

- Antimicrobial agents
- Lung volume reduction surgery

Nursing Management

- Improving airway clearance
- Improving breathing pattern
- Controlling infection
- Improving gas exchange
- Improving nutrition

3.5 RENAL DISORDERS

Renal Calculi

Acute renal failure

3.5.1 Renal Calculi

Classification

Urolithiasis and nephrolithiasis

Causes

- Urinary stasis
- Super saturation of urine

Risk factors

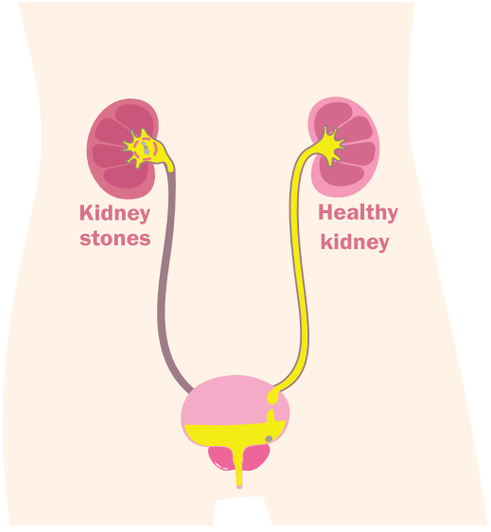
- Immobility
- Sedentary life style
- Dehydration
- Metabolic disturbances
- Increases calcium
- A diet high in purine oxalates calcium and animal proteins

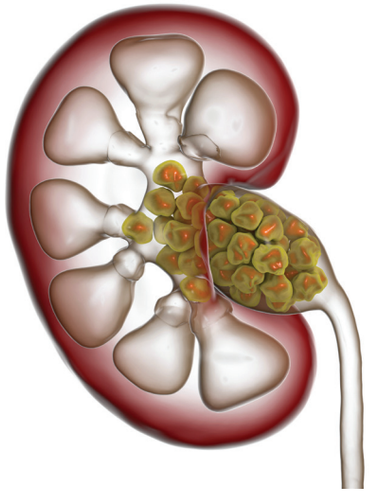
Signs & Symptoms

- Renal colic or ureteric colic
- Sharp severe pain originates deep in the lumbar region and radiate around the sides and down towards the genital or thigh
- Nausea
- Vomiting
- Pallor
- Increased blood pressure and pulse
- Urgency and frequency of urine
- Hematuria
- Fever and chills

Investigations

- USG - Abdomen
- Intravenous pyelogram
- X- ray KUB (Kidney, Urethra, Bladder) or CT KUB
- Blood test may shows increased WBC, uric acid, serum Calcium and Phosphorous
- Cystoscopy





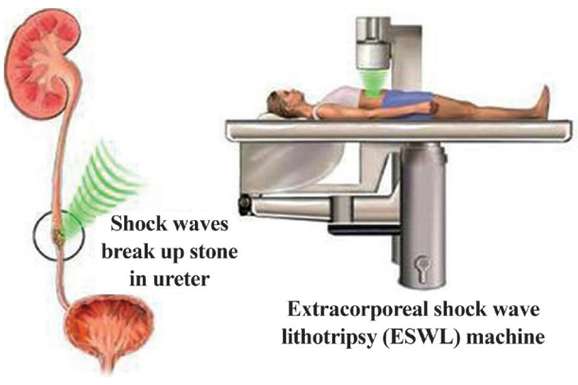
Management

Medical management

- Pain management
- Analgesics and anti spasmodic drugs
- Hydration with oral fluids and IV fluids
- Minimize the calculus formation by dietary changes (less calcium diet)

Surgical Management

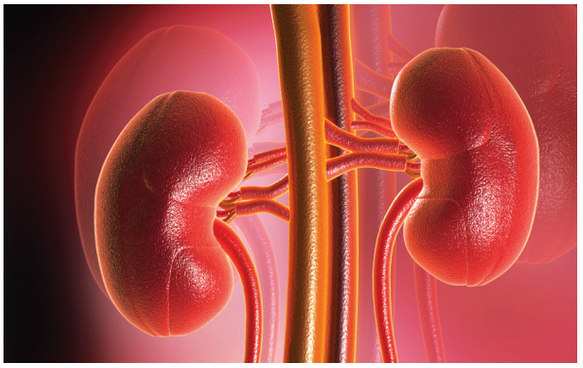
- Breaking and crushing the stones in urinary tract.
- URSL (Ureteroscopic Lithotripsy)
- Intra corporeal Lithotripsy (crushing the stones)
- Laser lithotripsy
- ESWL (extracorporeal shock wave lithotripsy)
- PCNL (Percutaneous Nephrolithotomy)
- Ureterolithotomy
- Cystolithotomy
- Nephrolithotomy
- Nephrectomy



Nursing Management

- Pain control
- Minimize the vomiting by antiemetics
- Increased fluid intake and relaxation technique
- Provide comfortable position
- Maintain fluid intake chart (intake output)
- Advice dietary modification

3.5.2 Acute Renal Failure



Acute renal failure is a syndrome of varying causation that results in a sudden decline in renal function.

Causes

- Pre–renal causes: It results from the condition that decreases renal blood flow (e.g. Hypovolemia, shock, hemorrhage, burns, diuretic therapy)
- Post–renal causes: It comes from obstruction or distruption of urine flow anywhere along the urinary tract
- Intra – renal causes: It results from injury in the renal tissue and is usually associated with intra renal ischemia, toxins immunologic process, systematic and vascular disorders

Signs and Symptoms

- Dryness of mucous membrane
- Hypotension
- Oliguria
- Fever
- Increases blood urea, creatinine, uric acid, potassium levels etc

Investigations

- Urine analysis: Reveals protenuria, haematuria
- Raise of Serum creatinine in blood
- Urine culture
- Renal ultrasonography
- Renal biopsy

Management

- Correct any reversible cause of acute renal failure .
- Be alert for fluid excess or deficit
- Monitor the signs of hypovolemia or hypervolemia
- Monitor Intake and output chart
- Weigh the patient daily
- Monitor vital signs
- Correct and control biochemical imbalances
- Restore and maintain B/P
- Maintain nutrition
- Initiate haemodialysis
- Renal replacement therapy

Prevention

- Maintaining healthy lifestyle – performing regular physical activity, limiting alcohol intake, and refraining from smoke can keep you away from illness
- Be attentive while taking over the counter (OTC) medications, especially NSAIDs as they can be nephrotoxic
- Undergo urine test and blood test at least once in 6 months to monitor kidney disease
- Consult a doctor immediately if you find any changes in your urine output

Complication

- Infection
- Arrhythmias due to hyperkalemia
- Electrolyte abnormalities
- Gastrointestinal bleeding
- Multiple organ system failure

3.6 NEUROLOGICAL DISORDERS

Epilepsy

Unconscious Status

3.6.1 Epilepsy

Epilepsy is a tendency to have recurrent seizures, which results from disturbances in the normal electrical activity of the brain.

Causes

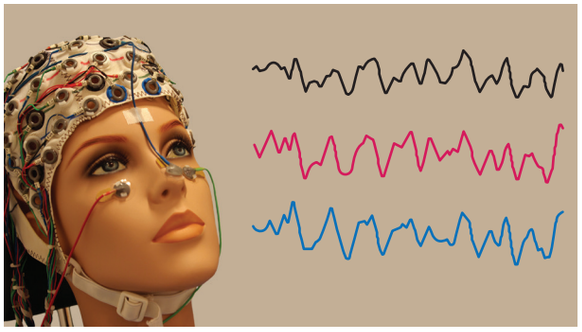
- Prenatal injuries
- Low sugar, sodium or calcium
- Developmental defect of the brain
- Cerebral infections like meningitis, encephalitis
- Cerebral injuries
- Cerebral tumors
- Cerebro vascular attack
- Cysticercus and tuberculomas

Signs & Symptoms

- Unconsciousness
- Rigid body
- Jerking movements of arms and legs
- Clenching of teeth
- Grunting noises
- Confusion (one or two minutes)

Classification of epilepsy

Partial seizure	Generalised
1. Simple partial seizure seizure	1. Typical Absence seizure
2. Complex partial seizure	2. Atypical absence seizure
	3.Myoclonic seizure
	4. Tonic – Clonic seizure
	5. Atonic seizure



Investigations

- ❖ EEG
- ❖ CT-Brain
- ❖ MRI-Brain

Management

Medical Management

Drugs

- Carbamazepine
- Phenytoin
- Valporic acid

Surgical Management

- ❖ Reserve and palliative operations (temporal lobotomy, extra temporal resection, corpus colostomy, hemisperectomy)

Nursing Management

- ❖ Maintain a patient airway until patient is fully awake after a seizure
- ❖ Provide oxygen during the seizure if color change occurs
- ❖ Stress the importance of taking medication regularly
- ❖ Provide a safe environment by padding side rails and removing clutter
- ❖ Place a bed in a low position and place a patient on side during a seizure to prevent aspiration
- ❖ Do not restrain the patient during a seizure
- ❖ Do not put anything in the patient mouth during a seizure

Complication

- ❖ Status epileptics
- ❖ Injuries due to falls

3.6.1 Epilepsy

Unconsciousness is a lack of awareness of one's environment and the inability to respond to external stimuli.

Coma may be defined as no eye opening on stimulation, absence of comprehensible speech, a failure to obey commands.

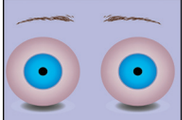
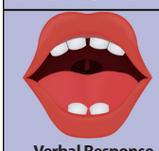
Causes

- ❖ Head injuries
- ❖ Meningitis, encephalitis
- ❖ Diabetes mellitus
- ❖ Renal failure
- ❖ Poisonous drugs (stomach wash, refer practicals)
- ❖ Asphaxia
- ❖ Epilepsy

Diagnosis

- ❖ Assess the patient's level of consciousness by Glasgow coma scale.
  - Responses to command
  - Eye opening
  - Verbal responses
  - Motor responses

Glasgow Coma Scale Assessment

Behaviour	Response
 Eye Opening Response	4. Eye Opening Response 3. To speech 2. To pain 1. No response
 Verbal Response	5. Oriented to time, person and place 4. Confused 3. Inappropriate words 2. Incomprehensible sounds 1. No response
 Motor Response	6. Obeys command 5. Moves to localised pain 4. Flex to withdraw from pain 3. Abnormal flexion 2. Abnormal extension 1. No response

Interpretation

- Best score
- Worst Score
- 7 or less generally indicates coma (Changes from baseline are most important)

Nursing Management

- ❖ Maintenance of effective airway
- ❖ Maintenance of fluid & electrolyte balance and nutrition
- ❖ Maintenance of personal hygiene and care of pressure areas including prevention of foot drop
- ❖ Promoting elimination
- ❖ Family education:

3.7 MUSCULO SKELETAL

Osteoarthritis

Osteoporosis

3.7.1 Osteoarthritis

Osteoarthritis is a very common chronic disorder involving the joints. It is a degenerative change in the joints. The degenerative changes take place because the rubbing of the joint surfaces causes a wearing away and disintegration of the tissues.

Causes and Risk factors

Age: people above the age of 45 have the risk for developing osteoarthritis. It is, however, most commonly found in people over age of 65.

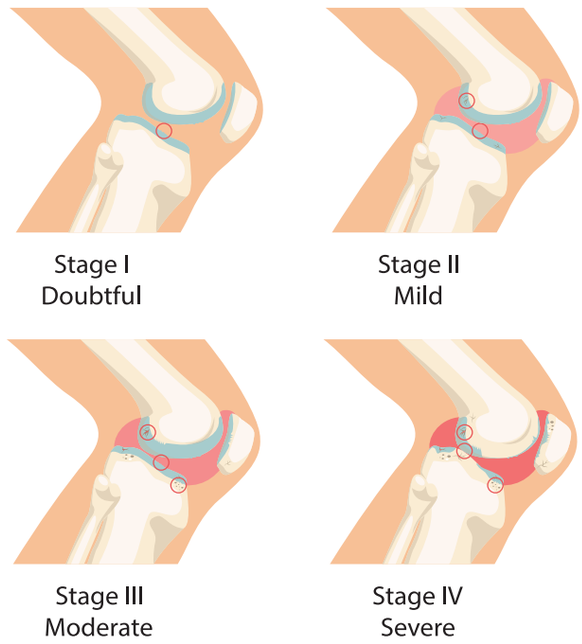
Gender: This disease of osteoarthritis is more common in women, particularly after the age of 55

Obesity: This can be one of the causes for osteoarthritis as every kilogram puts three extra kilogram of pressure on knees

Injury : Joint injuries are an increased risk of developing osteoarthritis

Weakness of muscles: Weak thigh muscles lead to osteoarthritis knee joint pain.

Stages of knee Osteoarthritis



Signs & Symptoms

- Knee pain
- Swelling
- Joint stiffness
- Loss of movement

Investigation

- X–ray of affected joints
- Serum CRP
- Serum ESR, RA factor

Management

Medical management:

- Analgesics
- Exercise to strengthen muscles

Surgical management:

- Arthodesis (practised earlier)
- TKR (Total Knee Replacement)

Arthiodesis, an operation to fuse the joint in one position can be done to prevent further pain (practiced earlier)

Do's

- Use knee cap supports
- Use hot water formentation to relieve pain
- Wear comfortable, fitting shoes to reduce stress on joints
- Walk regularly to keep yourself active, it helps to avoid stiffness
- Maintain a healthy weight to reduce strain and pain in your knee
- Don't lift heavy weights, it puts stress on the knees

Dont's

- Don't sit cross- legged
- Avoid prolonged activities that put strain on the knee like gardening
- Avoid jerky movements
- Don't smoke. Research shows that smoking leads to joint pain along with other damaging effects

R	I	C	E
Rest	**Ice**	**Compression**	**Elevate**
Rest your knee. Avoid any movement that requires the affected knee to be moved.	Put Ice padding on the affected knee to reduce pain and swelling.	Apply a Compression bandage to reduce the swelling.	Elevate the affected knee using a pillow, to help reduce the swelling.

3.7.2 Osteoporosis

Osteoporosis is a disease characterised by low bone mass and deterioration of bone tissue, which can lead to increased risk of fracture.



Risk factors

- Genetics
- Lack of exercise
- Lack of calcium and vitamin D_3
- Diet calcium / vitamin D deficiency

Osteoporosis means "porous bones"

Signs and Symptoms

- Pain
- Height loss or dull pain in the bones or muscles
- Swelling
- Redness
- Limited movement

Investigation

- Blood: Test Calcium & Phosphorus
- BMD
- X–ray

Causes of Osteoporosis

- Low calcium diet
- Lack of physical activity
- Family history
- Women are more likely to develop osteoposis
- Hypercalciuria
- Anticonvulsant medications
- Hyperthyroidism
- Hyper parathyroidism
- Neoplastic disease – cancer

Management

- Medication – vitamins and calcium
- Dietary supplements
- Weight bearing exercises

3.8 ENDOCRINE DISORDERS

Diabetes Mellitus (DM)

Hypothyroidism

3.8.1 Diabetes Mellitus (DM)

Diabetes mellitus is a metabolic disorder characterized by hyperglycemia (raised blood sugar level) and results from the defective insulin production, secretion, or utilization.

Types of DM

- IDDM: Insulin dependent diabetes mellitus
- NIDDM: Non-Insulin dependent diabetes mellitus



Causes

- Lack of insulin produced by the beta cell resulting in hyperglycemia
- Defects of the cell receptor site, impaired secretary response of insulin (glyconeogenosis)
- Viral, Autoimmuno, and environmental theories are under review (IDDM)
- Heredity/genetics and obesity plays a major role (NIDDM)

Signs and Symptoms



Diagnosis

- Fasting Blood sugar (FBS)
- Post Prandial Blood sugar (PPBS)
- HbA1c

Management

- Diet
- Exercise
- Medication.
- Health education.

Diet:

- Dietary control with calorie restriction of carbohydrates and saturated fats are to maintain ideal body weight
- Advise patient about the importance of an individualized meals plan in meeting weight loss goals
- **Exercise:**

Weight reduction is the primary management for NIDDM regular scheduled exercise to

promote the utilization of carbohydrate, assist with weight control, enhance the action of insulin, and improve cardio vascular fitness.

Medication:

Tab metformin

Injection Insulin

- Demonstrate and explain thoroughly the procedure for insulin self-injection
- Review dosage and time injections in relation to meals activity, and bedtime based on patient's individualized insulin regimen

Health Education:

1. Asses patient for the signs and symptoms of hypoglycaemia.
   - Sweating, cardiac palpitation and nervousness.
   - Head ache, light-headedness,. Confusion, irritability, slurred speech, lack of co-ordination staggering gait from depression of central nervous system as glucose level progressively falls.
2. Identification card may be requested from the Indian Diabetes Association.
3. Between meal snacks as well as extra food taken before exercise should be encouraged to prevent hypoglycaemia.
4. Improving activity tolerance.
5. Maintain skin integrity.

Complication

- Hypoglycemia
- Diabetic ketoacidocis
- Hyperglycemic syndrome.
- Micro vascular complication e.g. Retinopathy, Nephropathy, Neuropathy.
- Micro vascular complications in Cardiovascular disease occurring both in NIDDM and IDDM.

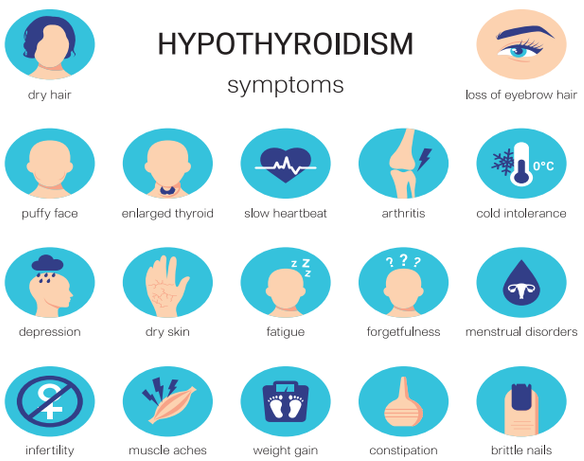
3.8.3 Hypothyroidism

It is a metabolic state resulting from a deficiency of thyroid hormone that may occur at any age. Congenital hypothyroidism results in a condition called cretinism.

Causes

- Congenital defects of the thyroid gland
- Defective hormone synthesis
- Iodine deficiency (prenatal and post natal)
- Anti thyroid drugs
- Surgery of management with radioactive agents for hyperthyroidism
- Chronic inflammatory (acute immune) disease such as hashimoto's disease, amylodois sarcoidosis

Signs and Symptoms



Myxedema:

It is a severe condition associated with hypo thyroidism.

- ❖ Respiratory failure
- ❖ Heart failure
- ❖ Cerebral vascular accident
- ❖ Trauma (injury)
- ❖ Metabolic disturbances



Myxedema coma:

It is a form of severe hypo thyroidism leading to decreased mental status. So it is a medical emergency with a high mortalityrase.

- ❖ Drastic increase in metabolic rate
- ❖ Hypoventilation leading to respiratory acidosis
- ❖ Hypothermia
- ❖ Hypotension
- ❖ Hyponatremia
- ❖ Hypocalcaemia
- ❖ Hypoglycemia

Diagnostic evaluation:

- ❖ History and physical examination
- ❖ Serum TSH and free T4

Management

- ❖ Antithyroid drugs such as Propylathiouracil (PTU) which inhibits thyroid hormone synthesis
- ❖ Radioactive iodine offers a more permanent option because it destroys thyroid tissue
- ❖ Client with hypothyroidism must receive lifelong thyroid hormone replacement therapy

3.9 CANCER

The goals of cancer management are cure, control and palliative care.

Cancer is a disease in which certain body cells multiply without apparent control, destroying healthy tissue and organs and endangering life.

Causes:

Carcinogenic Agents: Cancer causing agents are called carcinogens They are physical, chemical agents, ionizing radiations.

Physical Irritant: Heavy Smoking causes lung cancer and cancers of oral cavity, pharynx (throat) and larynx. Betel and tobacco chewing causes cancer. Excessive exposure to sunlight may cause skin cancer.

Chemical Agents: Nicotine, Caffeine, products of combustion coal and oil, pesticides, asbestos, nickel, certain dyes and artificial sweeteners induce cancer.

Radiations: Ionizing radiations like X –rays, gamma rays, radioactive substances and non – ionising radiations like UV rays cause DNA damage leading to cancer.

Biological Agents: Cancer causing viruses are called oncogenic viruses are called oncogenic viruses.

There are three main classifications of cancer- 1. Carcinoma 2. Sarcoma 3. Lymphoma.

Carcinoma: which is cancer of the epithelial

tissue that forms the skin and the linings of the internal organs.

Sarcoma: which is cancer of connective tissue such as cartilage, muscle or bone.

Lymphoma: which affects the blood stream and the lymph system.

Treatment of cancer:

The treatment of cancer involves the following methods:

Surgery: Tumours are removed by surgery to prevent further spread of cancer cells

Radiation Therapy: Tumour cells are irradiated by lethal doses of radiation while protecting the surrounding normal cells.

Chemotherapy: It involves administration of anti-cancerous drugs which prevent cell division and are used to kill cancer cells.

Immunotherapy: Biological response modifiers like interferon's are used to achieve the immune system and help in destroying the tumours.

Preventive measures for cancer:

Cancer control programmes should focus on Primary Prevention and early detection.

To prevent lung cancer tobacco smoking is to be avoided and protective measures to be taken against exposure to toxic pollutants of industries. Excessive exposure to radiation is to be avoided to prevent skin cancer.

3.10 OCCUPATIONAL DISORDERS

Silicosis

Computer Vision Syndrome

3.10.1 Silicosis

C- Change of bowel /bladder habit

A – A sore does not heal

U – Unusual bleeding

T – Thickening of lump

I – Indigestion

O- Obvious change in the size of mole

N – Nagging cough

Silicosis, also known as Pottor's rot is a form of occupational lung disease caused by inhalation of crystalline silica dust and is marked by inflammation and scarlingin forms of nodular lesions in the upper lobes of the lungs.



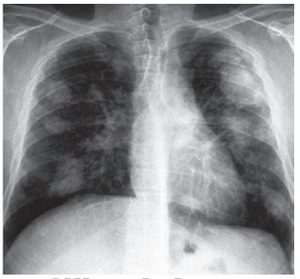
Causes

Silicosis is caused by exposure to crystalline silica and breathing in tiny bits of silica, which comes from chipping ,cutting , drilling ,or grinding soil ,sand , granite ,or other minerals.

Signs and Symptoms



Normal Lung



Silicosis Lung

- ❖ Dyspnea exacerbated by exertion
- ❖ Cough, often persistent and sometime severe Fatigue
- ❖ Tachypnea
- ❖ Loss of appetite and weight loss
- ❖ Chest
- ❖ Fever
- ❖ Gradual dark shallow rifts in nails eventually leading to crack as protein fibre with in nails beds are destroyed

In advance cases:

- Cyanosis
- Corpulmonale
- Respiratory insufficiency

Investigation

- History collection
- Physical examination
- Chest X-ray reveals findings consistent with silicosis
- Pulmonary function testing: may reveal airflow limitation, restrictive defects, reduced diffusion capacity, mixed defects or may be normal (in uncomplicated)

Management

Silicosis is an irreversible condition with no cure. Management options currently focus on alleviating the symptoms and preventing complications. These include:

- ❖ Stopping further exposure to silica and other lung irritants, including tobacco.
- ❖ Cough suppressants
- ❖ Antibiotics for bacterial lung infection
- ❖ TB prophylaxis for those with positive tuberculosis skin test
- ❖ Chest physiotherapy to help the bronchial drainage of mucus
- ❖ Oxygen administration to treat hypoxemia, if present
- ❖ Bronchodilators to facilitate breathing
- ❖ Lung Transplantation

Nursing Management

- ❖ Providing nursing care in the acute and chronic stages
- ❖ Health education regarding the prevention of the disease

Prevention

- ❖ Rigorous dust control measures like wearing mask improving the ventilation of work place
- ❖ Water spray is often used where dust is present
- ❖ Dust can also be controlled by dry air filtering

3.10.2 Computer Vision Syndrome

Computer vision syndrome (CVS) is strain on the eyes that happens when you use a computer or digital device (Smart phone,

Tablets, Laptop) for prolonged periods of time.



Causes

- Lighting in the room
- Distance from the screen
- Glare on the screen
- Seating posture
- Angle of your head

Signs & Symptoms

- Eyestrain
- Headache
- Blurred vision
- Dry eyes
- Neck and shoulder pain

Management

With these simple practices, you can reduce the effects of computer vision syndrome:

- Make sure the lighting in the room is comfortable on the eyes, and prevents you from starting into glare on the computer screen
- Position the digital display so that your head is in a naturally comfortable position while using take breaks
- Make sure your seat is comfortable. A comfortable chair with support for your neck and back will help you avoid neck and shoulder strain commonly associated with computer vision syndrome

Computer eye strain steps for relief

- Get comprehensive eye exam
- Use proper lighting
- Minimize glare
- Upgrade your display
- Adjust your computer display setting
- Blink more often
- Exercise your eyes
- Take frequent breaks
- Modify your work stations
- Consider computer eyewear

CONCLUSION

Non communicable disease is a medical condition or disease that is not caused by infectious agent. Non communicable diseases are usually caused by genetic or life style factors. Four types of NCDs are – Cardiovascular diseases, Cancers, Diabetes and Chronic respiratory diseases.

Hernia, Hypertension, Asthma, Diabetes mellitus, Acute myocardial infarction, Acute & chronic renal failure, Renal calculi, COPD, Cancer, PCOD, Alcoholism, and

Occupational disorders like Computer vision syndrome and Silicosis are the examples of non communicable diseases.

Management of NCDs are medical or surgical management based on signs & symptoms. NCDs can be prevented by proper food, exercise and good life activities.

A-Z GLOSSARY

Hypoglycaemia (இரத்தத்தில் சர்க்கரை குறைதல்)	-	Low blood sugar, the body's main source of energy
Retinopathy (விழித்திரை நோய்)	-	Retinopathy is any damage to the retina of the eyes.
Nephropathy (சிறுநீரகக் கோளாறு)	-	The kidneys start to incur damage.
Neuropathy (நரம்புக் கோளாறு)	-	Weakness, Numbers and pain from nerve damage.
Cyanosis (நீலம் பாரித்தல்)	-	The skin surface having low oxygen saturation (Bluish skin)
Cystoscopy (சிஸ்டோஸ்கோபி)	-	cystoscopy is endoscopy of the urinary bladder via the urethra.
Lithrotripsy (லித்தோட்ரிப்சி)	-	Shock waves are used to break the kidney stones into smaller pieces that can now easily pass through the urinary track.
Arrhythmia (அரித்மியா)	-	Heart arrhythmia whether irregular too fast or too slow.
Hyperkalemia (ஹைபர்கலிமியா)	-	A high level of the electrolyte potassium in the blood.
Causes (காரணிகள்)	-	The science of the cause of disease.
Peritonitis (பெரிடோனைடிஸ்)	-	Inflammation of the peritoneum.
ECG (ஈ.சி.ஜி.)	-	Electro Cardio Gram (Electrical activity of the heart recorded the graph paper).
Symptoms (அடையாளம்)	-	Any indication of disease perceived by the patient.
Signs (அறிகுறிகள்)	-	Any Objective evidence of disease or dysfunction.
Diagnosis (நோய்க் கண்டறிதல்)	-	Determination of the nature of a disease.

Perforation (துளை விழுதல்)	-	The creation of a hole in an organ tissue or tube. This may occur is the course of a disease, such duodenal ulcer, colonic diverticulitis or stomach cancer.
Appendicectomy (அப்பென்டிசெக்டமி)	-	Removal of the vermiform appendix.
MRI (எம்.ஆர்.ஐ.)	-	Magnetic resonance imaging (An imaging technique based on the nuclear magnetic resonance properties of the hydrogen nuclear cross – sectional images in any plane of the body for examination may be obtained. MRI is without horizontal to the patient.
Infarction (திசு அழிவு)	-	An area of tissue necrosis caused by impairment of arterial or venous blood supply due to mechanical factors or to blood pressure alterations.
Angina pectoris (ஆன்ஜைனாபெக்டோரில்)	-	Cardiac pain that occurs on exertion owing to in sufficient blood supply to the heart muscles.
Diabetic ketoacidosis (டையபடிக் கீடோஅசிட்டோசிஸ்)	-	Diabetic ketoacidosis (DKA) is a build up of acids in your blood. It can happen when your blood sugar is too high for too long.
Syndrome (சின்ட்ரோம்)	-	A syndrome is a set of medical. Sings and syndrome that are correlated with each other and often with a particular disease or disorder.

EVALUATION

M392D

I Choose the correct answer

1. Rebound tenderness at McBurney's point is found in the following disease.
   a. Hernia b.Appendicitis
   c. Hypertension d. Renal calculi

2. The following conditions are the complications of Acute myocardial infarction, except
   a. Pulmonary embolism
   b. Heart failure
   c. Anginapectoris
   d. Hernia

3. The following condition is caused by vitamin B_{12} and folic acid
   a. Aplastic anaemia
   b. Pernicious anaemia
   c. Megaloblastic anaemia
   d. Anaemia

4. Signs and symptoms of diabetes mellitus
   (i) Polyuria (ii) Polydipsia
   (iii) Polyphagia (iv) Hypoglycaemia
   a. (i) (ii) (iii) b. (i) (ii) (iv)
   c. (i) (iii) (iv) d. (ii) (iii) (iv)

5. The following conditions are the signs and symptoms of asthma except
   a. Dyspnoea b. Wheezing
   c. Cyanosis d. Knee joint pain

6. Silicosis is otherwise called as
   a. Anginapectoris
   b. Cholecystitis
   c. Pottor's rot
   d. Myocardial infarction

7. Removal of gallbladder by surgical method is called as _____
   a. Cholecystectomy
   b. Appendectomy
   c. Laparotomy
   d. Nephrectomy

8. What is cholecystitis?
   a. Inflammation of liver
   b. Inflammation of gallbladder
   c. Inflammation of bone
   c. Inflammation of appendix

9. Identify the test for acute myocardial infarction
   a. Trop – I b. X – Ray Chest
   c. Ultra sonogram d. X – Ray KUB

10. Pericarditis is the complication _____
    a. Anaemia
    b. Acute myocardial infarction
    c. Renal Calculi
    d. Acute renal failure

11. Which anaemic has shorten lifespan of erythrocyte?
    a. Megalo plastic Anaemia
    b. Haemolytic Anaemia
    c. A plastic Anaemia
    d. Pernicious Anaemia

12. Which disease needs ESWL treatment?
    a. Renal Calculi b. Acute Renal Failure
    c. Acute Myocardial infarction
    d. Cholecystitis

13. Which scale is used to assess the conscious level of the patient?
    a. Glasgow coma scale b. Pain scale
    c. Sphygmomanometer d. Thermometer

14. Low bone mass found in_____ disease
    a. Osteoporosis b. Osteoarthritis
    c. Renal calculi d. Diabetes mellitus

15. Which type of cancer affects the blood stream?
    a. Carcinoma b. Sarcoma
    c. Lymphoma d. Myeloma

II Write brief answer for the following questions

1. What is Asthma?
2. Write the investigation for Asthma.
3. What are the causes for COPD?
4. What is meant by osteo arthritis?
5. Write the diagnostic investigation of cholecystitis.
6. Mention the complications of appendicitis.
7. Explain the medical management of Acute myocardial infarction.
8. What is Diabetes mellitus?
9. Write the nursing management of Renal calculi.
10. What is meant by epilepsy?

III Write short notes for the following questions

1. Write the preventive measures of silicosis.
2. Write the causes of computer vision syndrome.
3. When you are working in the computer section, write any five steps to reduce eyestrain?
4 Mention the types of Anaemia and explain.
5. Explain the nursing management of Asthma.
6. Explain the Do's and Don'ts about osteo arthritis?
7. Write the types and causes of diabetes mellitus.
8. Write the complications of diabetes mellitus.

IV Answer the following questions in detail.

1. Explain the following:
   a. What is myocardial infarction?
   b. Write the causes of M.I.
   c. Mention the clinical features of M.I.
   d. Write the nursing and medical management.
2. Explain in detail about diabetes mellitus.
3. Write an essay about Anemia.

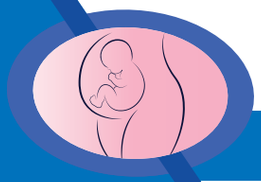
REFERENCES

1. Brunner & Siddarth, Text Book of Medical and Surgical Nursing J.B. Lippincott Co-Philadelphia, 2000.
2. WorldBook.medicalencyclopediapublished by world book. Inc a Scott Fetzer Company-Chicago 8th Edition-1999.
3. Potter & Perry's Fundamentals of Nursing South Asian Edition-2013.
4. Medical & Surgical Nursing Assessment and Management of Clinical Problems Lewis. Bucher. Heitemper. Harding 10th Edition-2017.

WEBLINKS

- www.cms.gov/medicare and Medicaid services.
- www.drugs.com/history/corlanor.html.
- https://www.healthline.com > health > non communicable disease.

Unit 4



MATERNAL HEALTH NURSING

LEARNING OBJECTIVES

At the end of this chapter, the student will be able to

- discuss in detail menstrual cycle, fertilization
- describe the embryonic and foetal development
- implement antenatal and postnatal care
- educate the mother about antenatal care
- participate national family welfare programme and educate about the family planning methods

திருக்குறள்:

குழல்இனிது யாழ்இனிது என்பதம் மக்கள்
மழலைச்சொல் கேளா தவர்.

விளக்கம்:

பெற்ற பிள்ளைகள் பேசும் பொருளற்ற மழலைச் சொல்லைக் கேட்காதவர்தாம், குழலும் யாழும் கேட்க இனியவை என்பர்.

Explanation:

"The pipe is sweet, the lute is sweet," say those who have not heard the prattle of their own children.

4.1 INTRODUCTION

Women are the eyes of country –told by Bharthiyar. Women are the God of giving life to new one in this word. If women are healthy, the life which comes from them will be healthy. If children are healthy the family, society, nation then the whole world will be healthy. When the child is born as a female the care starts from there to have a healthy child in future.

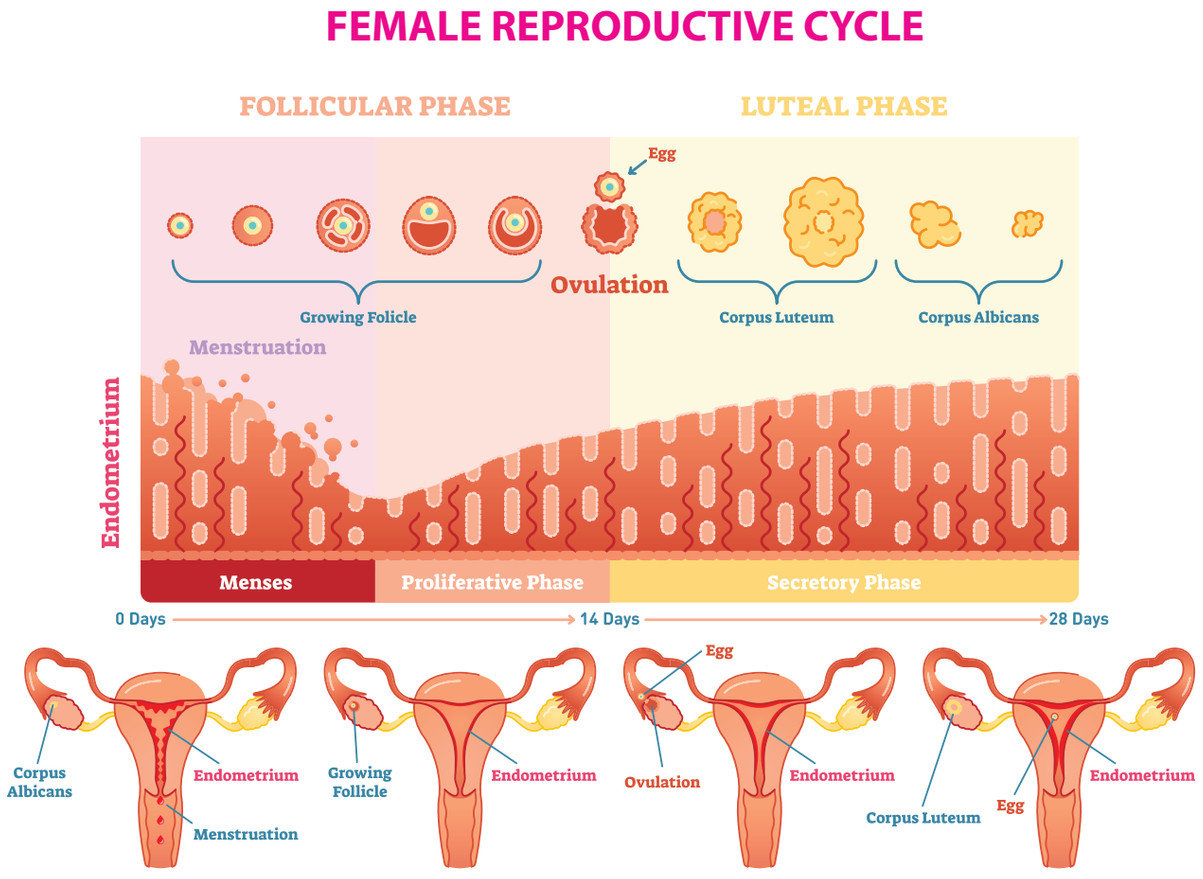
So the essential and preventable maternal care is needed for all the women. In this chapter we are going to see how the women are to be protected in terms of maternal health. It includes care of women during pregnancy, and the postpartum period. It also encompasses the health care dimensions of family planning, to ensure a positive and fulfilling experience to reduce maternal morbidity and mortality

4.2 MENSTRUAL CYCLE

Normally one egg matures in the ovary each month. Ovulation is the rupture of the follicle releasing the egg or onam. The uterus prepares itself to receive the fertilized egg every month. The uterine lining becomes thick and spongy for implantation of the fertilized egg.
Events leading to when fertilization occurs and does not occur.

If fertilization takes place the corpus luteum persists, continues to segregate progesterone maintains the thickened layer of uterine wall and prevents maturation of another follicle till the end of pregnancy.

If fertilization does not occur, corpus luteum degenerates, the egg disintegrated and the



uterine lining slowly break discharged as blood and mucus leading to menstrual events.

Normal limits:

Frequency: 24-38 days

Regularity: +/- 2-20 days

Duration: 4-8 days

Volume: 5-80 ml

Abnormalities in Menstruation

- Premenstrual Syndrome **(PMS).**
- PMS is any unpleasant or uncomfortable symptom during menstrual cycle that may temporarily disturb normal functioning. These symptoms may last from a few hours to many days.
- **Amenorrhea:** It is absence of menstruation.
- **Dysmenorrhea**: It is characterized by severe and frequent menstrual cramps and pain associated with menstruation.
- **Menorrhagia:** It is the medical term for excessive menstrual bleeding.
- **Metrorrhagia:** It refers to menstrual bleeding that is normal in amount but occurs of irregular intervals, between the menstrual periods hemorrhage from the uterus, independent of menstruation.
- **Menopause:** It is the process through which a woman ceases to be fertile.

4.3 FERTILIZATION AND FETAL DEVELOPMENT

Definition: It is the process during which a haploid male gamete (sperm) unites with a haploid female gamete (oocyte) to form a single cell (ZYGOTE). Is called fertilization.

The development of fetus divided in to 3 periods.

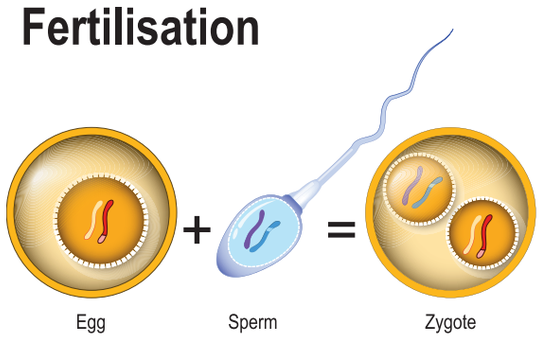
1. Pre-embryonic period (0 to 2 weeks)
2. Embryonic period (3-8 weeks)
3. Fetal period (9th week to birth of the baby)

1. Pre- embryonic period (0-2 Weeks)

- During coitus, sperm is released by male partner into the vagina of the female partner is called as insemination.
- The motile sperms swim and pass the cervix to enter into the uterus and finally to reach the ovum released by the ovary in the ampullary isthmic junction.
- Fertilization takes place in the ampulla-isthmic junction. Chemical signals from oocyte attract the sperms.
- The sperm after reaching the ovary in the ampullary isthmic junction comes in contact with the zona-pellucida layer of the ovum and block the entry of the additional sperms thus only one sperm fertilizes the ovum.
- The secretions of acrosome help the sperm to enter into the ovum through zonapellucida and the plasma membrane and thus secondary oocyte completes meiosis II and results in the formation of a second polar body and haploid ovum.
- The haploid nucleus of the sperm and ovum fuse together to form a zygote which develops into new individual.

Proces of Fusion of Gametes

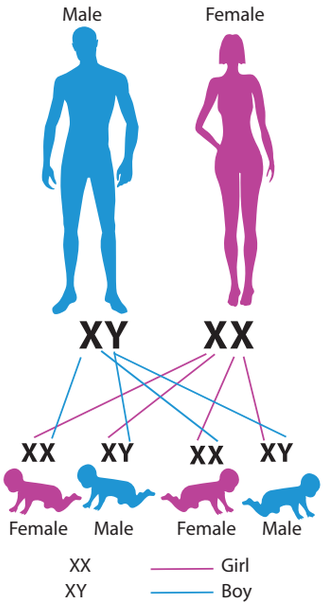
Definition: The process of union of sperm and ovum is called as fertilisation.



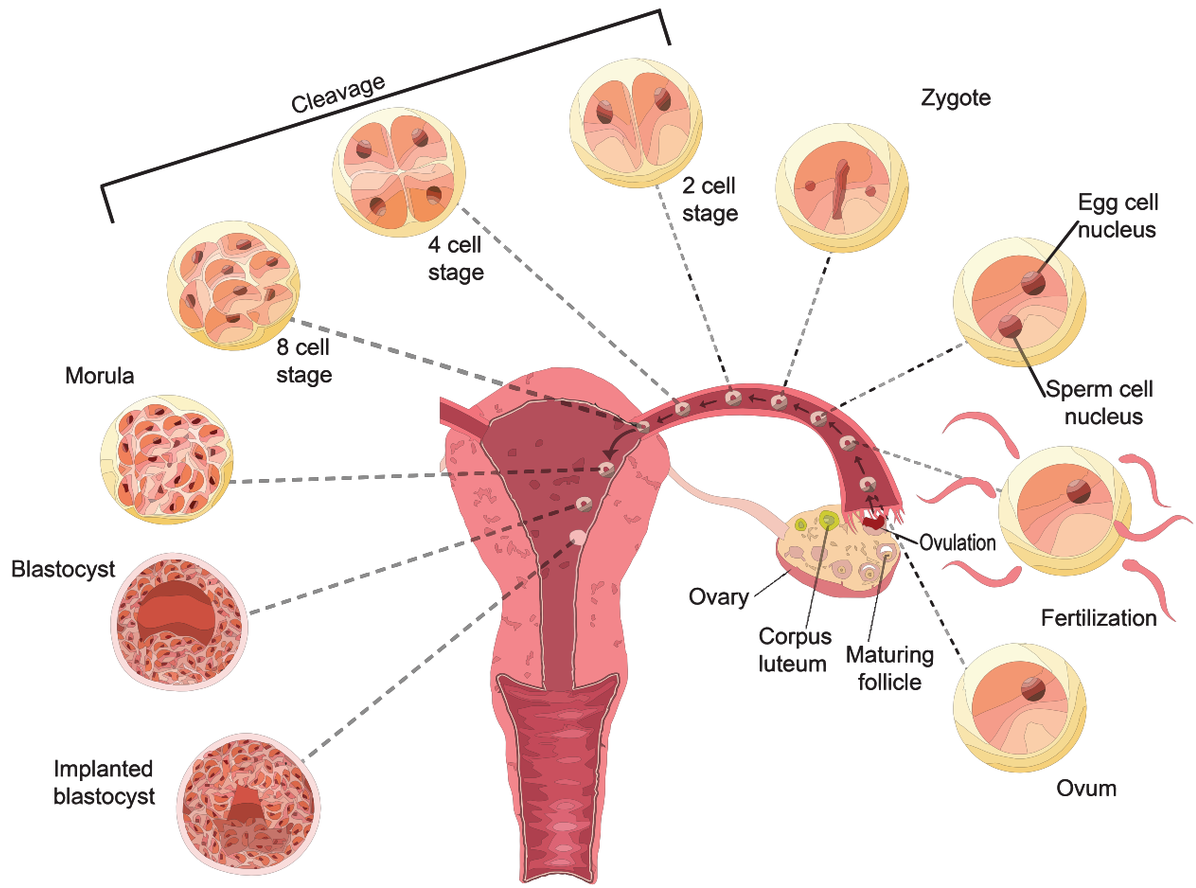
Process of Fertilization to Implantation

- Zygote is genetically unique, a diploid cell (46 chromosomes) resulting from the fusion of two haploid gametes; a fertilized ovum.
- Male has two sex chromosomes X and Y hence male produces 50% of sperms carrying X and 50% carrying Y, while female has two X chromosomes.
- After fusion of the male and female gametes the zygote would carry either XX or XY depending on whether the sperm carrying X or Y fertilized the ovum.
- The zygote carrying XX would develop into a female baby and XY would form a male.
- So, it is the father whose gamete decides the sex.

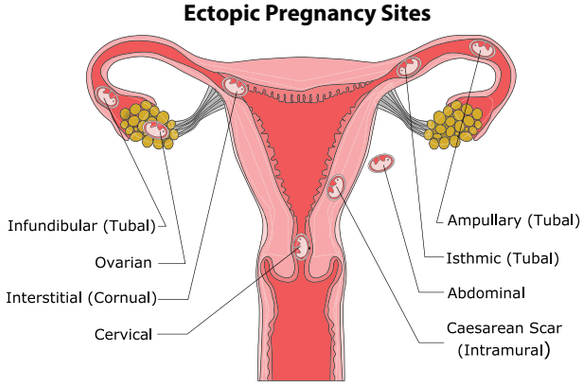
Sex determination



FETAL DEVELOPMENT FROM OVULATION TO IMPLANTATION



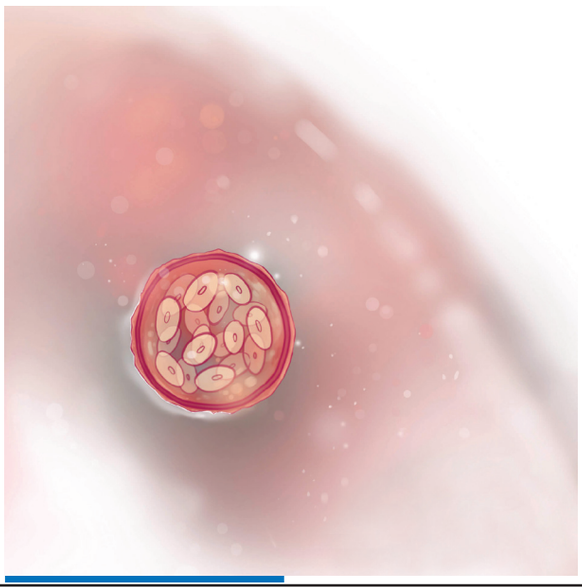
- After fertilization cleavage of zygote takes place. It consists of repeated mitotic divisions of the zygot which results in rapid increase in the number of the cells. These smaller embryonic cells are called blastomeres. This normally occurs in the uterine tube.
- The embryo with 8 to 16 blastomeres is called a morula. The Morula reaches the uterine cavity at this stage. Spherical Morula is formed about 3 days after fertilization.
- The morula divides further as it moves further into the uterus and transforms into blastocyst.
- The blastomeres in the blastocyst are arranged into an outer layer called trophoblast and inner mass of cells attached to trophoblast is called as inner cell mass.
- By 7th day, Trophoblast is differentiated into 2 layers: Cytotrophoblast, inner layer, mononucleated mitotically active cells. Syncytiotrophoblast (outer multinucleated mass, with indistinct cell boundary).
- By 8th day the blastocyst is superficially embedded in the compact layer of the endometrium.
- By the 10th day the blastocyst is completely buried in the uterine lining, known as "Implantation" or "embedding" "some women have small amount of bleeding" during the time of implantation which is known as "Implantation Bleeding".
- The implantation of the fertilized ovum of embedding is known as "Nidation or Nesting".
- Uteroplacental circulation is established by 11th or 12th day. implantation is completed by the 11th or 12th day. Implantation it can be detected by:
  - Ultrasonography.
  - HCG (human chorionic gonadotrophin which is secreted by the syncytiotrophoblast) at about the end of 2nd week
- By the 13th day Proliferation of Cytotrophoblast cells produce extension inside the Syncytiotrophoblast to form primary chorionic villi.
- The chorionic villi and uterine tissue together form a structural and functional organic structure between developing embryo and tissues of the mother called as placenta.
- After implantation, the inner cell mass is differentiated into outer layer called ectoderm and an inner layer called endoderm with a middlelayer is mesoderm
- Three layers give rise to all organs in adults. As shown in the picture above the cells are responsible for those organs.
- If the implantation occur outside it is called as Ectopic pregnancy. 95 to 97% of ectopic pregnancies occurs in the uterine tube. Most are in the ampulla & isthmus. (see the figure for types of ectopic pregnancy)



- Placenta previa: placenta attach to the lower uterine segment.

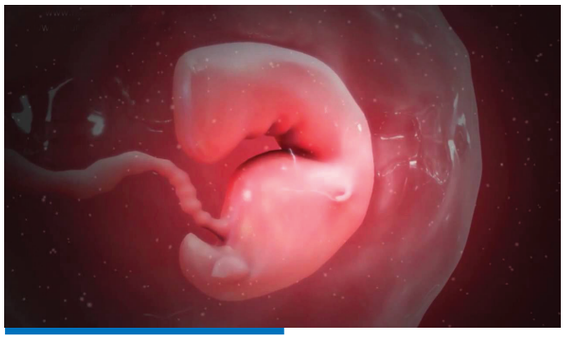
2 .Embryonic period (3-8 weeks)

3rd week



- Heart Tube fuses
- Cardiac muscle contraction begins
- Eye & ear cells are present
- Neural tube starts closing

4th week



- Optic vesicle appears, two pharyngeal arches appear.
- A primitive S-shaped tubal heart is beating and peristalsis.
- The rhythmic flow propelling fluids throughout the body begins at this stage,
- The neural tube determines the form of the embryo.

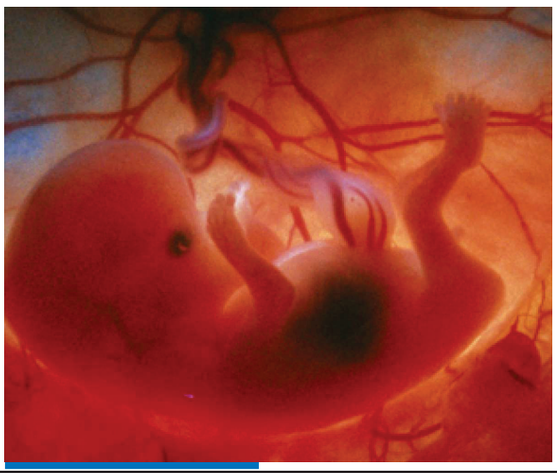
5th Week

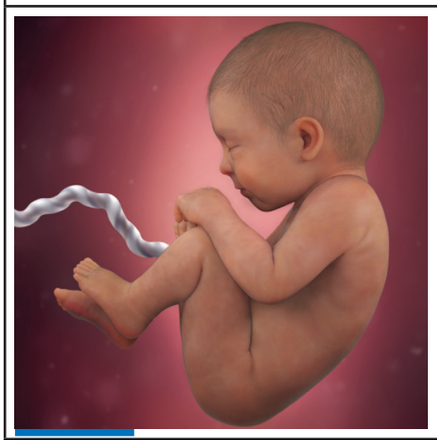


- Valve & septa appear in the heart.
- The digestive epithelium layer begins to differentiate into the future locations of the liver, lung, stomach and pancreas.
- Liver cells form in the digestive system.
- Forebrain, midbrain and hindbrain forms.
- Lymphatic & thyroid start to develop.
- Limb buds.
- First thin layer of skin.
- The baby yawns.

6th week	
	❖ Further development of nervous system, heart. ❖ Innervation, the distribution of nerves, begins in the lower limb buds.
7th week	
	❖ A four chambered heart and a sense of smell. ❖ Primitive germ cells arrive at the genital area and will respond to genetic instructions to develop into either female or male genitals.
8th week	
	❖ Spontaneous Involuntary Movement. ❖ Brain is connected to tiny muscles and nerves and enables the embryo to make spontaneous movements. ❖ Testes or ovaries are distinguishable.

3. Fetal Period (9th week to birth of the baby)

9-12 weeks	
	❖ Brain continues to develop, liver enlarges, blood cell formation begins. ❖ Sex can be determined by genitals. ❖ 10th week. ❖ The fetus passes urine. ❖ The Fetal Heart Rate can be heared by Doppler.

13-16 Weeks (Month 4)	
	❖ Sucking starts ❖ Hard palate is fused ❖ Kidney structure developed ❖ Bones are distinct joint cavities are apparent ❖ Meconium is present in gut
17-20 weeks (Month 5)	
	❖ Eyeballs and eyebrows present. ❖ Lanugo(Silk like hair)present. ❖ Quickening occurs (first fetal movement). ❖ Approximate crown rump length at the end of 20 weeks is 19 cm.
21-30 weeks	
	❖ Eyes are opened. ❖ Finger and toe nails are complete. ❖ Skin is wrinkled and red. Fatty layer under the skin is formed. ❖ lanugo prominent. ❖ Testes descent in the scrotum for male babies. ❖ Approximate crown rump length at the end of 30 weeks is 28 cm. ❖ Vernix (white creamy substance) present.
30-38 weeks	
	❖ Constant weight gain. ❖ Lanugo disappears from face. ❖ Fat accumulates under the skin (hypodermis). ❖ Plantar creases visible. ❖ Ear cartilage soft. ❖ Approximate crown rump length at the end of 38 weeks is 36 cm. ❖ At birth, weight - 2.5-3.5 kg.

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4.4 PLACENTA AND MEMBRANES

- This is a feto maternal organ. It has two components:
  - Fetal part – develops from the chorionic sac
  - Maternal part – derived from the endometrium

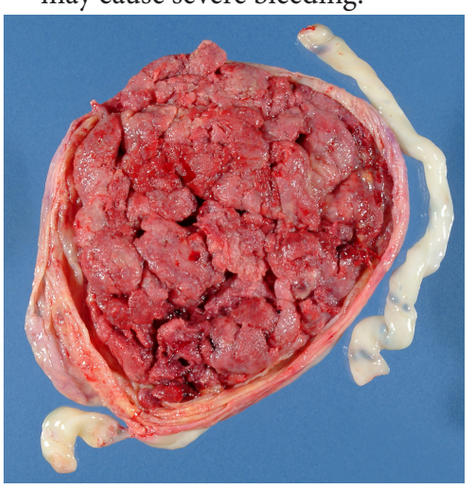
The placenta and the umbilical cord are a transport system for substances between the mother and the fetus.

Structure of placenta: It is a flat, round mass, about 15 to 20 cm in diameter, 2.5-3 cm thickness, 15-20 lobes, weighs 1/6th of baby's weight or 500 – 600gms at birth. It has two surfaces maternal surface and fetal Surface

Maternal surface

It is irregular, and divided into convex areas (cotyledons)

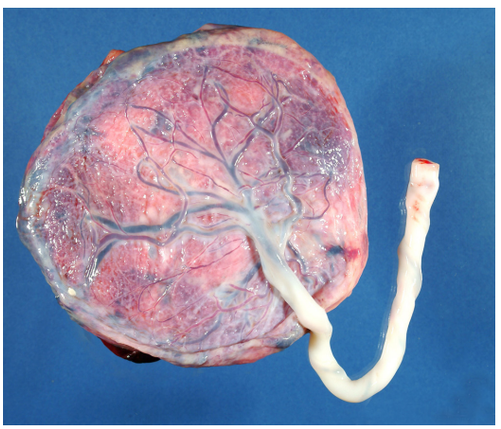
- Cotyledons –about 15 to 20 slightly bulging villous areas. Their surface is covered by shreds of decidua basalis from the uterine wall.
- After birth, the placenta is always carefully inspected for missing cotyledons. Cotyledons remaining attached to the uterine wall after birth may cause severe bleeding.



Maternal surface of placenta

Fetal surface:

- This side is smooth and shiny. It is covered by amnion.
- The umbilical cord is attached close to the center of the placenta.
- The umbilical vessels radiate from the umbilical cord.
- They branch on the fetal surface to form chorionic vessels.
- They enter the chorionic villi to form arteriocapillary-venous system.



Fetal surface of placenta

Functions of Placenta

1. **Respiratory:** Placenta act as lungs to the fetus taking in oxygen from the mother's haemoglobin and giving of CO_2 into the maternal blood.
2. **Nutritive:** The fetus selects from the mother blood protein for tissue building, glucose for energy and growth. Calcium and phosphorus for bones and teeth, vitamins, iron and other minerals for blood formation.
3. **Storage:** The liver is not sufficiently developed. Placenta stores glucose is the form of glycogen and reconverts it into glucose as required by the fetus.
4. **Excretory:** The waste products are given off and taken away by the ovarian and uterine veins.

5. **Protective:** To protect the fetus, the placenta prevents a number of organisms from passing through into the fetal blood.

6. **Endocrine:** The placenta also has an endocrine action producing hormones like follicular stimulating and leutinizing hormones of the gonadotrophic hormone and oestrogen and progestetone.

4.5 UMBILICAL CORD (FUNIS)

- **Usually it is attached near the center of the fetal surface of placenta.** The cord extends from the umbilicus of the fetus to the fetal surface of the placenta.
- **Length:** About 40- 50 cm and 20 cm wide.
- Contains two arteries and one vein, surrounded by clear gelatinous substances and gives support to the cord and prevent compression of the cord is called (Wharton jelly).
- The vessels are longer than the cord and may have loops (false knots).

4.6 AMINIOTIC FLUID

- It is a fluid in the uterus surrounding the fetus.
- It consists of fetus urine, maternal serum fetal cells , near birth – amnionic volume will be 500-1000 ml. If the fluid is excess (>2000 ml) it is called as Hydraminos. If less it is called as Oligohydramnios .

Functions of Amniotic Fluid

- It allows for growth and free movement of fetus.
- It protects the fetus, acting as shock absorber.
- It maintains an even temperature for fetus.
- It prevents pressure on the cord.
- It acts as cushion around the fetus, because it protects the fetus from injury, if mother is bumped or falls.
- It is a fluid source that the fetus drinks and then urinates.

4.7 FETAL CIRCULATION

Definition: The circulation of oxygenated blood, de-oxygenated blood, nutritive material etc, in the foetus is termed as foetal circulation.

The blood vessels responsible for foetal circulation are

1. **One Umblical Vein:** It carries the oxygenated blood from the placenta to the growing fetus.
2. **Two Umblical Arteries:** Both arteries carries all the de-oxygenated blood out of the fetus and carries de-oxygenated blood from the fetus to the placenta.

The shunts involved in foetal circulation

There are three shunts present in a fetus, they are:

1. **Ductus Venosus:** The Ductus Venosus shunts the portion of left umblical vein blood flow directly to the inferior vena cava
2. **Ductus Arteriosus:** It allows most of the blood from the right-ventricle to bypass the fetus' fluid-filled non-functioning lungs. Connects the pulmonary artery to the proximal descending aorta.
3. **Foramen Ovale**: It allows the blood to enter the left atrium from the right atrium It is an opening in the intra-atrial septum.

4.8 ANTENATAL CARE

Every pregnancy needs special care. All pregnant women should be registered and encouraged for institutional delivery. Causes of maternal mortality are preventable by the good antenatal care

Definition of Antenatal Care

- Antenatal care refers to the care that is given to an expected mother from time of conception is confirmed until the beginning of labor

Objectives of Antenatal Care

1. Early detection and if possible, prevention of complications of pregnancy.
2. Educate women on danger and emergency signs & symptoms.
3. Prepare the woman and her family for childbirth.
4. Give education & counseling on family planning.

Schedule of Antenatal Care

- Medical checkup every four weeks up to 28 weeks gestation
- Every 2 weeks until 36 weeks of gestation.
- Every week until delivery
- An average 7-12 antenatal visits/pregnancy
- More frequent visits may be required if complications arise

Importance of Abdominal Examination

- Monitor progress of pregnancy and fetal growth
- Check for fetal lie and presentation
- Auscultate fetal heart sounds

What does it include?

- Measurement of fundal height
- Assessment of fetal lie and presentation
- Assessment of fetal movement
- Auscultation of fetal heart sounds
- Inspection for scars

Methods of Abdominal Examination

- Inspection
- Palpation
- Auscultation

On first antenatal visit	
1- Confirm Pregnancy	Confirm pregnancy by pregnancy test or Ultra Sound.
2-History collection	Ask Personal history which includes Name, Age, husband name, marital status, family income, Address etc Menstrual history includes ; ➢ - 1-Last menstrual period (LMP). ➢ - 2-Regularity and frequency of menstrual cycle. ➢ - 3-Contraception method used . ➢ - 4-Calculate expected date of delivery (EDD) as = first day of LMP + 9 months +7 days

In Obstetric history ask for

- Gravidity (no of times the women gets her pregnancy)
- Parity (no of times given birth)
- Abortion, (loss of fetus before its viability) and
- Living children.

Calculate the obstetrical score (e.g if the mother is pregnant at first time she is primi gravidae. If she is pregnant for more than one time it is multigravida.the symbols used for obstetrical score is G- gravida

P-Parity

A - Abortion

L - Livimg children

D - Dead (the child dies after the birth

SB - Still Birth (the mother deliver a dead child)

Example of calculation of obstetrical score

Mrs. Radha 22 yrs pregnant with 16 weeks (4 months). She has one baby with 3yr s old. She had one abortion last year.

Her obstetrical score is $=G_3\ P_1\ L_1A_1$

If multiple pregnancy ask following questions.

- Weight of infant at birth & length of gestation.
- Type of delivery, location of birth, and type of anaesthesia.
- Maternal or infant complications

Medical and surgical history

1-Chronic conditions : as diabetes mellitus, hypertension, and renal disease ,cardiac disease.

2-Prior operation: as caesarean section, genital repair, and cervical cerclage.

3-Allergies, and medications.

4-Accidents involving injury of the bony pelvis.

History of present pregnancy

- History suggesting e.g. Diabetes, hypertension and ante partum hemorrhage.
- Ask about episodes of fever or chills.
- Ask about pain or burning sensation on urination.
- Abnormal vaginal discharge, itching at the vulva or if partner has a urinary problem.

3-Physical examination	➢ Maternal height and weight measurements to determine body mass index(BMI). ➢ Maternal weight should be measured at each antenatal visit 1. Look for palmar pallor. 2. Look for conjunctival pallor 3. Count respiratory rate in one minute. 4. Blood pressure measurement ➢ Measure BP in sitting position. ➢ If diastolic BP is 90 mm Hg or higher repeat measurement after 6 hour rest. ➢ If diastolic BP is still 90 mm Hg or higher ask the woman if she has: ➢ Severe headache ➢ Blurred vision ➢ Epigastric pain ➢ Check urine for protein
4. Investigations	➢ Haemoglobin, blood type ➢ Blood and urine sugar ➢ Urine analysis ➢ VDRL or RPR to screen for syphilis ➢ HBsAg testing ➢ HIV ➢ Ultra sound to confirm the pregnancy

AT EACH VISIT- Check the following and do Abdominal Examination

BLOOD PRESSURE	PEDAL EDEMA	FOETAL HEART SOUND	WEIGHT GAIN	URINE ANALYSIS
				

Student activity:
Calculate EDD for following LMP

1.Oct 12th 2018
2.Nov 7th 2018
3.Dec 20th 2018

DIET in Pregnancy

- Total caloric intake should be increased to 300 kcal /day due to 15% increase in BMR.
- Diet should contain 20% Protein (better from animal source), 30% fat, and 50% carbohydrates.
- Sufficient fluids should be taken. (10 glasses for a day).
- Absorption of iron is interfered if taken with tea, coffee or foods rich in fluoride.
- Enhanced if taken with lemon water or orange juice.
- Encourage mother to take plenty of fruits and vegetables like mango, guava, orange, amla etc containing vitamin C.
- Emphasize the importance of high protein diet like black gram, ground nuts, whole grains, milk, eggs etc.
- Supplementation - Iron, folic acid and calcium as prescribed

WEIGHT gain in Pregnancy

- Total weight gain approximately 12 Kgs.
- Weight gain of 2 kgs in first trimester. 5 kgs in second and 5 kgs in third trimester.
- Monitoring of weight gain should be done in conjunction with close monitoring of BP.
- Overweight or sudden increase of weight is to be notified immediately.

Oral Care

- Good oral care is an important during pregnancy as it is the most important time of life.

CARE OF BREAST

- Breast engorgement may cause discomfort during late pregnancy. A well-fitting brassiere can give relief.

ANTENATAL EXERCISES

Uses of Antenatal Exercise

1. Good muscle tone is maintained during labour and postnatal period.
2. Helps to reduce the backache.
3. Assist in effective pushing during labour.

Types of Antenatal Exercise

- Deep breathing exercise.



- Abdominal breathing
- Lower coastal breathing
- Apical breathing
- Back and abdominal exercise
- Pelvic floor exercise (Kegels)
- Lower Limp relaxation exercise
- Foot and ankle exercise

Medications during Pregnancy

- Inj. DT. (Diptheria Tetanus) For preventing maternal and neonatal tetanus
  - Dosage schedule: Two doses 0.5 ml I/M in upper arm
- Iron and folic acid supplementation
- Regular consumption of iodized salt
- Calcium supplementation (500mg-1g / day)

Warning signs of Pregnancy

- Vaginal bleeding
- Persistent vomiting
- Chills and fever
- Sudden escape of clear fluid from vagina
- Abdominal or chest pain

- Increase or decrease in fetal movement

Minor disorders in pregnancy

- Morning sickness
- Heartburns
- Varicose veins
- Backache
- Breathlessness
- Palpitations
- Vaginal discharge
- Constipation

4.9 POST NATAL CARE

- The period lasts approximately 6 weeks. The puerperium care starts after the childbirth to 6 weeks

Aims of Postnatal Care

- Prevention of sepsis at placental site
- Newborn care
- Initiation of breast feeding

Nursing Assessment

Immediate Postpartum Assessment. The first 1 hour after delivery of the placenta (fourth stage of labor) is the critical period; post partum hemorrhage is most likely to occur at this time.

Components of Postnatal Care

1. Postnatal check up includes Pulse, BP, RR. Temp and Pallor. Monitor vital signs every 4 hours during the first 24 hours, then every 8 to 12 hours
2. BUBBLE-HE is a acronym used to denote the components of the postpartum maternal nursing assessment.
   - B: Breast
   - U: Uterus
   - B: Bladder
   - B: Bowels
   - L: Lochia
   - E: Episiotomy and perineum
   - H: Homan's
   - E: Emotional status

3. Minimizing Pain
4. Postnatal Exercise
   - Pelvic floor exercise
   - Abdominal tightening
   - Pelvic tilting or rocking
   - Hip hitching
   - Foot and Leg Exercise

5. Care of New Born
   - Keeping baby warm
   - Maintain Hygiene
   - Cord care
   - Breast feeding
   - Immunization

6. Nutritional Advise

Increase intake of fluid and food especially iron and protein rich foods like green leafy vegetables, jaggery, lentils, eggs and meat. Increase intake of milk and milk products like curd, cheese etc. Calorie need per day 2200+700 =2900 Kcal Advise adequate rest.

7. Family planning advise

Counsel couple regarding contraception.

8. Registration of Birth
   - Emphasize the importance of registration of birth with local panchayat.
   - It is a legal document and it is required for many purposes.

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4.10 FAMILY PLANNING METHODS

"DELAY THE FIRST, POSTPONE THE SECOND AND PREVENT THE THIRD"

Definition

An Expert committee (1971) of the WHO defined family planning as: "A way of thinking and living that is adopted voluntarily upon the basic of knowledge, attitudes and responsible decision by individuals and couples, in-order to promote the health and welfare of the family and thus contributes effectively to the social development of the country".

I Temporary Methods of Family Planning

Natural Methods

a. Abstinence

b. Coitus interruptus or withdrawal method

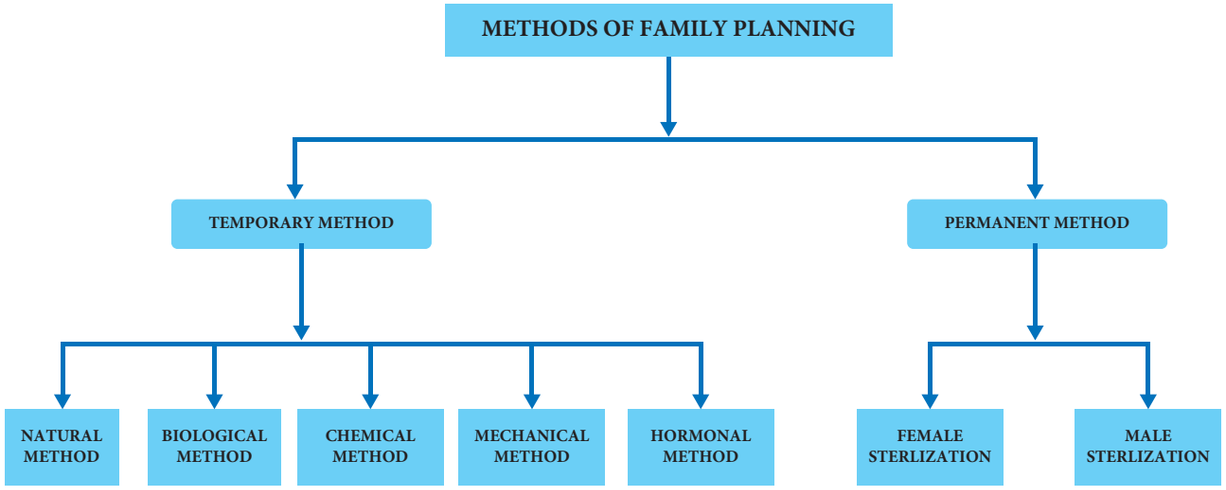
c. Lactational amenorrhea

Biological Methods

a. Calender (rhythm) method

b. Basal body temperature method

c. Cervical mucus method (billings method)



Chemical Method

a. Foams
b. Creams, jellies and pastes
c. Soluble films

I. Mechanical Family Planning Method

a. Male condoms
b. Female condoms
c. Diaphragms
d. Cervical cap
e. Intrauterine devices (IUD)
f. Sponge

Hormonal Contraceptive Method

a. Contraceptive skin patch
b. Vaginal ring
c. Pills (Combined and Minipill)
d. Injection
e. Implant
f. Emergency Pill
g. Intrauterine device

Types of IUDS

There are two types of IUDs:

- Nonmedicated Intrauterine Devices
- Medicated intrauterine devices

Nonmedicated intrauterine devices or first generation IUDs

These are made out of polyethylene or other polymers they actually entered market in different shapes and sizes they are Loops, Spirals, Coils, Rings, Bows. The lippes loop is the popularly known and commonly used device in the developing countries.

Medicated IUDs

The copper IUDs are named as second generation IUDs there are several forms of copper devices available now

Newer Devices

Variants of the T device

- Cu-T-220C
- Cu-T-380 A or Ag
- Nova T
- Multiload devices ML-Cu-250, ML- Cu -375

Advantages of Intra Uterine Devices (IUDs)

- This is the most cost-effective method
- Easy to use
- There is no interruption of intercourse
- It can be removed immediately incase of any problems or not required
- Fertility returns with the first ovulation cycle following IUD removal

Disadvantages

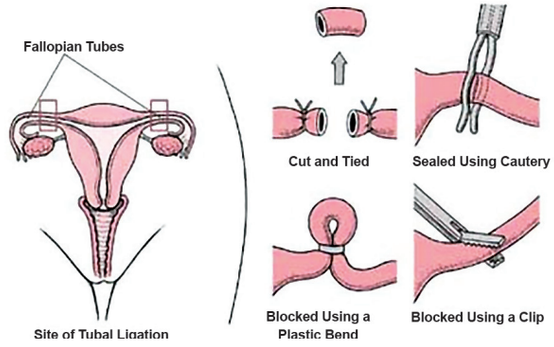
- IUDs do not protect against STDs
- Needs clinician for insertion and removal
- It may lead to side effect in some women

II Permanent Methods of Family Planning

a. Female Sterilization - Tubectomy

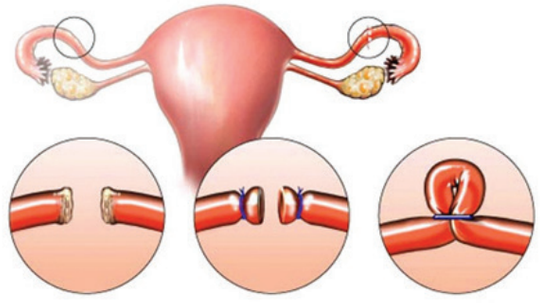
Laparoscopic Sterilization

Female sterilization is performed through abdomen using a laparoscope, the laparoscopic tubal ligation is a surgical sterilization method in which female's fallopian tubes are clamped or cut.



Mini-lap (Mini Laparotomy) Operation

A small abdominal incision measuring 2.5-3 cm is performed under local anaesthesia through the small incision, by following the fundus of the uterus fallopian tubes are reached and hooked up, knots are applied in two places this procedure is repeated for both the tubes.



Advantages

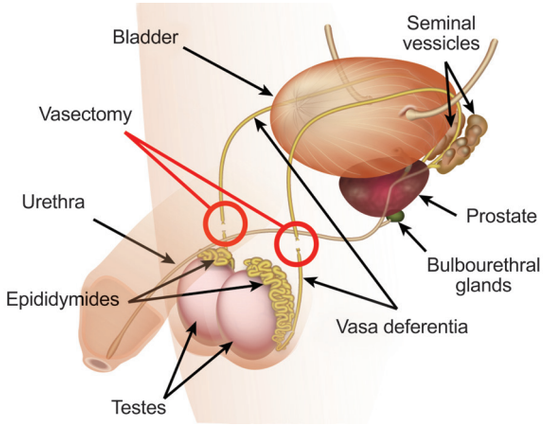
- It is a permanent method to prevent unintended pregnancies
- It is effective immediately
- Does not need any daily attention
- Cost-effective in the long term
- Hospital stay minimized

Disadvantages

- Need to face surgery and its consequences
- More complicated than male sterilization
- Does not protect against sexually-transmitted infections
- Lifting heavy weights not permitted for at least 6 months to avoid the occurrence of incisional hernia

b. Male Sterilization - Vasectomy

Vasectomy is a surgical procedure for permanent male sterilization. During the procedure the male vas deference are cut and then tied or sealed in a way to prevent sperm from entering into the seminal stream and thereby prevent fertilization.



Advantages

- Permanent method of contraceptive
- Highly effective method
- Very safe surgical procedure

Disadvantages

- Usually irreversible
- It does not provide protection against sexually transmitted disease and infections including HIV
- Need skilled medical personnel to perform the procedure

National Family Welfare Services

The national family welfare services includes primary, secondary, and tertiary care. The care is provided at different levels including District, Taluk, PHC, and PHU level.

Benefits for the Pregnant Women

Maternity Benefit (Amendment) Act 2017

The maternity benefit amendment act has increased the duration paid maternity leave available for women employees from the existing 12 weeks to 36 weeks.

Central Government Maternity Benefits

Pregnant women and lactating mothers will receive ₹6000, ₹5000 of which will be given in three instalments, provided that certain conditions related to completion of registration of pregnancy and birth, antenatal care and immunisation are met. The scheme is also restricted to the first live birth.

Janani Suraksha Yojana

The aim of JSY Scheme is to encourage poor pregnant women to give birth in registered health institutions. Mothers receive ₹1600 when they arrive and register at the health institution to give birth. The ASHA receives ₹600 when accompanying a women to a health institution for delivery.

Dr. Muthulakshmi Reddy Maternity Benefit

Dr. Muthulakshmi Reddy Maternity benefit scheme fund is enhanced with ₹12000. the cash assistance will be given in three instalment. ₹4000 who avails all required antenatal services during pregnancy in PHC, ₹4000 is given to the mothers who deliver in the government institution, ₹4000 at the completion of immunization for the child upto three doses.

Dikri Yojana

Financial assistance for those families without male child and those adopted permanent family planning measures with one or two female children.

Varumun Kappom Scheme

The aim of the scheme is to reduce maternal mortality and morbidity of the pregnant and expected mothers and utilising the vast resources of health care providers with the involvement of federation of obstetrics and gynaecological society of India.

BPL Desi Ghee Scheme

Below poverty line pregnant women in Rajasthan are entitled to receive five litres of desi ghee after their first institutional delivery. Three litres to be given after the first ANC test (between 4 to 6 month of pregnancy) and the other two litres at the time of discharge after the delivery.

Kalewa Yojna (KY)

Kalewayojna is funded by NHRM and implemented by DWCD where in free warm and nutritious food is provided for two days to women who have delivered in health facility especially at Community health centre level. This food is cooked by self-help groups.

Janani Express Yojana

Providing benefit of transportation to expectant mothers for institutional deliveries to deal with emergency circumstances during the pre and post delivery period.

CONCLUSION

This chapter dealt with Maternal health which includes physiology of menstruation and it's abnormalities. This chapter also has the process of fertilization, embryonic and fetal development discussed. It will help the students to do the antenatal and postnatal assessment to give proper care. This maternal health also discussed about family planning and insist upon the health education aspects during perinatal periods.

A-Z GLOSSARY

Menstruation (மாதவிடாய்)	-	It is a visible manifestation of cyclic physiologic uterine bleeding due to shedding of the endometrial following invisible interplay of hormones mainly through Hypothalamus-Pitutary-Ovarian axis.
Premenstrual Syndrome (PMS) (மாதவிலக்குக்கு முந்தைய அறிகுறி)	-	PMS is any unpleasant or uncomfortable symptom during menstrual cycle that may temporarily disturb normal functioning.
Amenorrhea (மாதவிலக்கின்மை)	-	It is absence of menstruation.
Dysmenorrhea (வலிமிகுவிடாய்)	-	It is characterized by severe and frequent menstrual cramps and pain associated with menstruation.
Menorrhagia (மாதவிடாய் மிகைப்பு)	-	It is the medical term for excessive menstrual bleeding.

Metrorrhagia (ஒழுங்கற்ற மாதவிலக்கு)	-	Refers to menstrual bleeding that is normal in amount but occurs of irregular intervals.
Menopause (மாதவிடாய் முடிவு)	-	In human beings, menstrual cycles ceases around 50 years of age and known as menopause.
Fertilization (கருத்தரித்தல்)	-	It is the process during which a haploid male gamete (sperm) unites with a haploid female gamete (oocyte) to form a single cell (ZYGOTE). Is called fertilization.
Placenta Previa (நஞ்சுக்கொடி முந்தி அமைதல்)	-	Placenta attach to the lower uterine segment.
Ectopic Pregnancy (இடம்மாறிய கர்ப்பம்)	-	If the implantation occur outside the uterus it is called as Ectopic pregnancy.
Nidation or Nesting (பதிய)	-	The implantation of the fertilized ovum of embedding is known as "Nidation or Nesting.
Implantation (கருபதித்தல்)	-	Is the process by which the blastocyst penetrates the superficial (compact) layer of the endometrium of the uterus.
Zygote (கருமுட்டை)	-	Is genetically unique. a diploid cell (46 chromosomes) resulting from the fusion of two haploid gametes; a fertilized ovum.
Placenta (நஞ்சுக்கொடி)	-	The chorionic villi and uterine tissue together form a structural and functional organic structure between developing embryo and tissues of the mother called as placenta.
Blastomere (சிறுகருமுட்டை செல்)	-	The smaller embryonic cells are called blastomere.
Antenatal Care (கர்பகால கவனிப்பு)	-	It refers to the care that is given to an expected mother from time of conception is confirmed until the beginning of labor.
Aminiotic fluid (கருப்பையில் உள்ள திரவம்)	-	It is a fluid in the uterus surrounding the fetus.
Lochia (ஈன்றபின் இறுதி குருதி)	-	Vaginal discharge after delivery.
Gravidity (தாய்மை நிலை)	-	Number of times the women gets her pregnancy.
Parity (குழந்தை ஈன்ற நிலை)	-	Number of times given birth.
Abortion (கருக்கலைப்பு)	-	Loss of fetus before its viability.
Abstinence (தவிர்ப்பு)	-	It means no sexual activity.

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EVALUATION

KLDWF

I Choose the correct answer:

1. What is the medical term for menstrual bleeding?
   a. Metrorrhagia b. menorrhagia
   c. Amenorrhoea d. Menopause
2. What is embryonic period?
   a. 0 – 2 weeks b. 3 – 8 weeks
   c. 9 – 12 weeks d. 1 – 3 weeks
3. Blastocyst completely buried in the uterine line is known as _____
   a. Morula b. Insemination
   c. Implantation d. Nesting
4. Which week of embryonic period of four chambered heart develops?
   a. 4th week b. 8th week
   c. 7th week d.5th week
5. What is the amount of amniotic fluid near birth?
   a. 300-800 ml b.500-1000 ml
   c. 1500-2000 ml d. 600-800 ml
6. What is menopause?
   a. absence of menstruation
   b. women ceases to be fertile
   c. Menstrual cramps and pain with menstruation
   d. Excessive menstrual bleeding
7. Morula moves in to the uterus and transforms into_____
   a. blastocyst b. trophoblast
   c. blastomere d. zygote
8. Placenta attach to the lower uterine segment is known as _____
   a. Placenta previa b. trophoblast
   c. Blasto cyst d. zygote
9. How many blood vessels are present in the umblical cord?
   a. 2 b. 1 c. 3 d. 4
10. What is called as second generation IUD?
    a. coils b. copper T
    c. spiral d. loops
11. Name the permanent method of male sterilization?
    a. Tubectomy b. Vasectomy
    c. Laproscopy d. Laprotomy
12. How do we call the fine silk like hair of the embryo?
    a. Lanugo b. Tubectomy
    c. Meconium d. Vernix
13. First foetal movement which is felt by the mother is called as _____
    a. Lanugo b. Meconium
    c. Quickening d. Vernix
14. By which month the mother feels the first movement of foetus?
    a. 6th month b. 5th month
    c. 8th month d. 4th month
15. Name the vaccination which is given during pregnancy?
    a. DPT b. TT
    c. ATS d. OPV

II. Write short answer for the following questions:

1. Define fertilization
2. What is zygote?
3. Define pre-embryonic period
4. What is nesting?
5. What is meant by abortion?
6. Describe the antenatal period
7. What is morula?
8. Define Gravida
9. What is parity?
10. What is Postnatal Period?

III Write short notes for the following questions

1. Explain the process of implantation
2. What are the placental functions?
3. List the investigations done at first antenatal visit?

4. Write the goals of antenatal care
5. List out the temporary family planning methods
6. What are the functions of amniotic fluid?
7. Write about vasectomy.
8. Write about the structure of placenta.
9. Write about the shunts involved in foetal circulation.

IV Answer the following questions in detail

1. Write in detail about antenatal care.
2. Given an essay about family planning methods.
3. Explain the foetal development between 3 – 8 weeks.
4. Explain the foetal development between 0-8wks
5. Write about the permanent family planning method in female
6. Write about the permanent family planning method in Male
7. Describe BUBBLE-HE
8. What are the functions of amniotic fluid?
9. Describe about the umbilical cord
10. What are components of health education in antenatal period?

REFERENCES

1. Miles C Benjamin "Text book of obstetric and gynaecology" 2nd edition page no :249-254.
2. Dutta Dc "Textbook of obstetric and gynaecology" 3rd edition page no 120-122.
3. World Health Organization. Maternal mortality in 2000: estimates developed by UNICEF and UNFPA. Geneva: World Health Organization. 2007;4:16. (http://www.who.int/whosis/mme_2005.pdf, accessed on 28 February 2008).
4. Family welfare statistics in India—2006. New Delhi: Ministry of Health and Family Welfare, Government of India; 2007. (http://mohfw.nic.in/dofw%20website/FWSII%20-%202006%5CBOOK.htm, accessed on 10 March 2008).
5. Report of the Health Survey and Development Committee, Government of India. New Delhi: Manager of Publications; 1946. p. 9.
6. Report of the Health Survey and Planning Committee, Government of India. New Delhi: Manager of Publications; 1961. p. 176..
7. Visaria PM. The sex ratio of the population of India. Census of India 1961. New Delhi: Office of the Registrar General of India; 1969. pp. 53–67. (Monograph no. 10).

WEB LINKS

- https://www.mdpi.com
- https://www.nchi.nim.n:h.gov
- https://www.msdmanuals.com
- https://www.researchgate.net

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Unit 5



CHILD HEALTH NURSING

LEARNING OBJECTIVES

At the end of this chapter, the students will be able to

- to learn about the growth and development of a child.
- to identify the major child hood problems.
- to orient about the health programs related to child health.
- to learn the normal characteristic of newborn
- to learn nursing care to a healthy neonate
- to understand the methods and importance of breast feeding
- to know about additional feeds.
- to orient the immunization schedule.

ABKCE

திருக்குறள்:

மக்கள் மெய்தீண்டல் உடற்கின்பம் மற்றுஅவர்
சொற்கேட்டல் இன்பம் செவிக்கு.

விளக்கம்:

மக்கள் உடம்பைத் தொடுதல் உடம்பிற்கு இன்பம் தருவதாகும்.
அம்மக்களின் மழலைச் சொற்களைக் கேட்டல் செவிக்கு இன்பம் தருவதாகும்.

EXPLANATION:

The touch of children gives pleasure to the body, and the hearing of their words, pleasure to the ear.

5.1 INTRODUCTION

Child Health Nursing is aimed to provide the highest possible state of health to each child. It includes preventing diseases or injuries, helping children to meet their health needs, to achieve and maintain adequate health and development. The role of the paediatric nurse depends on her education, experience, job structure and professional demands. The child care depends on the understanding of the parent about the growth and development of the child.

5.2 GROWTH AND DEVELOPMENT

Growth is an increase in the size of the whole body or any of its part. It can be measured in inches, centimetres, pounds or kilograms. Development is functional maturation. It is a progressive increase in skills and capacity of function. Each child has its own rate of physical, social, emotional and spiritual growth and development. All children grow through the normal sequence of development.

5.2.1 Factors influencing Growth and Development

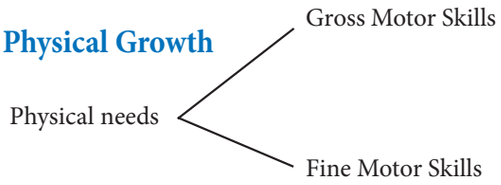
1. **Heredity:** The characteristics are transmitted through genes that are responsible for size, shape of the body and also the family illness.
2. **Race:** Similar physical characteristics are seen in people belonging to the same race.
3. **Sex:** A male baby is larger than female
4. **Intra uterine development:** Maternal and nutritional deficiencies, drugs and infections during pregnancy can have effect on the growing foetus.
5. **Illness and injury:** Illness may reduce the weight and minimise the child's process.
6. **Nutrition:** Quality and quantity of food consumed by the child have effect on his/her body building and resistance.
7. **Environment:** Sunshine, air, socio economic factors also affect children's development.
8. **Ordinal position in the family:** Younger children learn from older, which may be lacked by the first child.
9. **Emotions:** Lack of love, security, and parent child attachment can affect the personality. The disturbed children are always slow in development.
10. **Intelligence:** It influences motor development, Psycho social development and learning ability.
11. **Exercise:** Stimulates physical and muscular activity.
12. **Hormones:** Plays an important role in growth and development. E.g. deficiency of growth hormone causes dwarfism and over production leads to gigantism.

5.2.2 Growth Periods

1. New born – From birth to four weeks.
2. Infant – from birth to one year.
3. Toddler – from one year to three years.
4. Preschooler – from three years to six years.
5. Schoolage – from six to twelve years.

6. Adolescent – from thirteen to nineteen years.

Physical Growth



Gross Motor Skills:- Movement of the whole body. (E.g. Holding a spoon)

Fine Motor Skills:- Takes more learning to get the correct movement. (Eg. Head control)

5.2.3 Infant (1-12 months) : The infancy period is one of the rapid motor cognitive and social development period

Physical growth:- During infant period the birth weight doubles at 6 months and triples at 1 year. Total height increases by 50% at 1 year. Head and chest circumference are equal at 1 year.

Pulse rate is 130 – 140/mt.

Respiration is 36-40 /mt.

Blood pressure is 64/41 – 95/58 mmHg.

Dentition

Central incisors – 6-8 months.

Lateral incisors – 8-11 months

5.2.4 Mile stone development

1 month – Recognizes mother's voice

2 months – Social smile

3 months – Head control

4 months – Giggle and laugh

5 months – Turn backs to abdomen

6 months – Sitting with support

7 months – Sitting without support

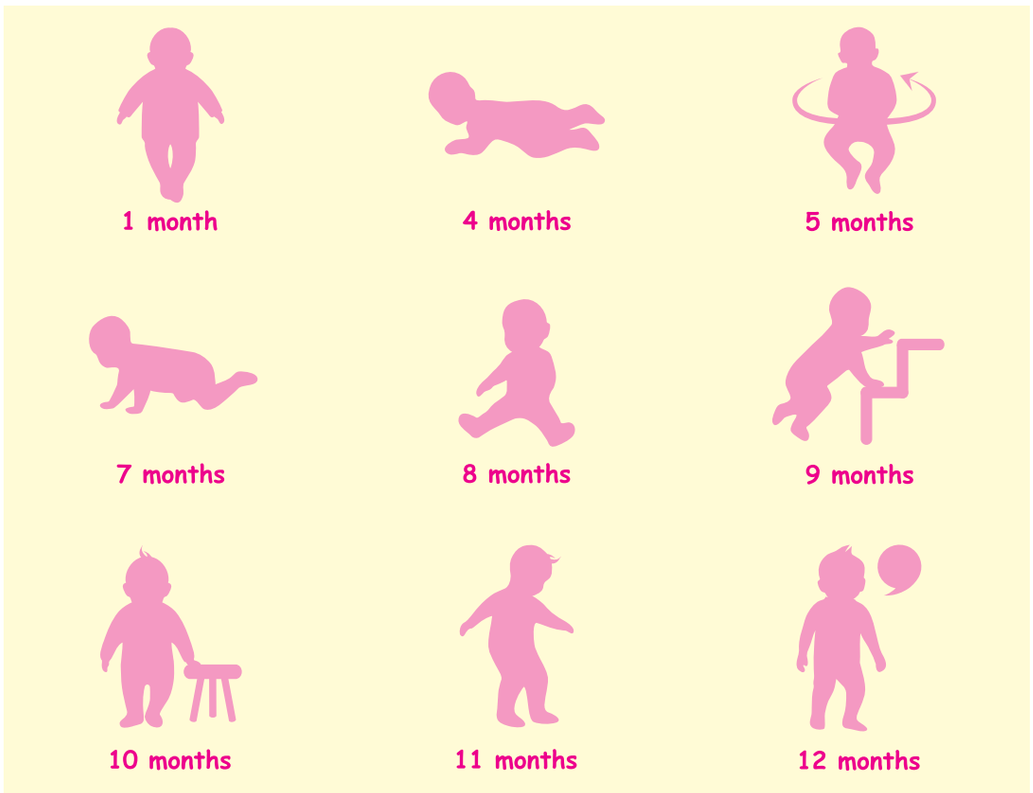
8 months – Crawling

9 months – Standing with support

10 months – Stands without support

11 months – Walking with support

12 months – Walks without support



5.2.5 Toddler: (1-3 years)

Toddler period is characterised by intense activity and discovery. It is a time of marked physical and personality development.

Age	Physical	Development			
		Gross	Fine	language	Psycho social
1-3 yrs	Molor eruption. Temp 97.8 F – 98.4 F Pulse 110-130 /mts Res. 20-40 /mts BP – 91/56 mmHg Chest circumferences exceeds head circumference Average weight gain 2-2.7 kg/years Height increases about 10-12.5cm years.	Climbs up down stairs. Use both feet for jumping Pedals tricycle. Dresses and undresses self.	Drinks from cup. Holds crayons with fingers. Builds and balances to block tower.	Identifies parts when named. Enjoys stories. Asks "why" Repeats phrases and words aimlessly.	Begins to imitate parents. Possessive in nature. Knows own sex attains toilet training.

5.2.6 Preschooler: (3–6 years)

The children between 3 and 6 years of age are known as preschooler. Children in the preschool years grow relatively slow. They become taller and thinner without gaining much weight. They look more like an adult because of skeletal maturation.

Age	Physical growth	Development			
		Gross motor	Fine motor	language	Psycho social
3-6 yrs	Weight 12.5 – 20 kg Height 100 -115 cm Pulse 90-105/mt Respiration 22-30/mt Blood pressure 100/60 mm Hg	Walks in tiptoes. Climbs tree and ladders. Imitates dance steps. Catches a ball smoothly with one hand	Draw a simple face. Cuts around pictures with scissors. Copies letters. Uses 4 word sentences.	Names primary colours Understands directions (under, back, front) Counts 1 to 10 Vocabulary 1200 words	Egocentric fears the dark Dreams and nightmares Jealousy of siblings. Engages in co-operative play.

5.2.7 School aged child (6-12 years)

This is the time of gradual growth and development with more event progress in both physical and emotional aspects.

Age	Physical growth	Development			
		Gross motor	Fine motor	language	Psycho social
6-12 yrs	Weight 20-35 kgs Height 110-140 cm Pulse 90/mt Respiration 20/mt BP 100 /60 mmHg	Performs tricks on bicycle. Throws a ball skill fully. Enjoys all physical activities.	Learns cursive writing Draws person with 18-20 parts Co- ordination continues to improve.	Begins to uses shorter and more compact sentences. Follows suggestion better than requests. Oral vocabulary 7200 words Use parts of speech correctly.	Easy to get along with others Gets short bursts of anger. Hero worship continues.

5.2.8 Adolescent: (13-19 years)

Adolescent is a period of transition from child hood to adulthood. It is time of rapid physical, cognitive, social and emotional maturing. This period is viewed as beginning with the gradual appearance of secondary sex characteristics (11-12 yrs) and ending with cessation of body growth at 18 – 20yrs.

Age	Physical growth		Development			
	Female	Male	Gross motor	Fine motor	language	Psycho social
13-19 yrs	Weight 40 -60 kgs Height 140-166 cms Pulse 66/mt Respiration 16-18/mt BP 112/66 mm Hg	Weight 35-60 kgs Height 140-170 cms Pulse 66 – 70 /mt Respiration 16-18/mt Bp 114 /68/ mm Hg	Comparable to adult level	Comparable to adult level	Comparable to adult level	Egocentrism diminishes Hetro sexual relationship Few close friends Separation from parents.

For girls

Beginning of puberty 8-13 years

- First pubertal change – breast development.
- Pubic hair development.
- Under arm hair development.
- Menstrual period 10 -16.5 years of age.

For boys

- Enlargement of scrotum and testes.
- Pubic hair development.
- Under arm hair development.
- Crack and breaky voice.

5.3 NEW BORN CHARACTERISTICS

Measurements

1. **Length :** The normal range of height ranges from 47.5 cms to 53.75cms.
2. **Weight:** The normal full term infant weighs between 2700 gms and 3850 gms.
3. **Head circumference :** Usually 33cms – 37cms
4. **Chest circumference :** The chest circumference is about 30-33cms
5. **Skin :** The skin is pink or red. In the black newborn reddish black.

   The skin may be covered with vernix caseosa, a cheese like greasy yellowish white substance.

   Lanugos is a very thin, soft distribution of fine hair over the body. Most evident on the shoulders, extremities, forehead and temporal.

6. **Ear:** New born's ear cartilages are well formed.
7. **Female genitalia:** Labio majora are fully formed and the clitoris is not prominent.

   Male genitalia: Scrotum is well developed pendulous and testes are well down in the scrotal sac.

8. **Apgar Score:-** The APGAR score was formulated by Dr. VIRGINIA APGAR in the 1950 as a way of assessing the baby's condition at birth and the need for resuscitation. Five inter related variables assessed at 1,5 and 10 minutes.

Total score – 10

No depression – 7-10

Mild 4-7

Severe 1-4

Sign	0	1	2
Appearance	Blue, pale	Body pink Limbs blue	All pink
Pulse (heart rate)	Absent	<100	>100
Grimace (response to stimuli)	None	Grimace	cry
Activity (muscle tone)	Limp	Some flexion of limbs	Active movements
Respiratory effort	None	Slow irregular	Good strong cry



The scores are added and the total score is documented. Babies scoring above seven rarely need resuscitation. The APGAR score which is undertaken to determine how well the baby is adjusting from intrauterine to extra uterine life.

9. **Vital Signs:**

Axiliary temperature 36.5° C – 37.6° C

Heart rate 120 – 140/minute

Respiration 40-60 /minute

10. **Grasp reflex :**

Mature newborn's grasp is strong.

5.4 NURSING CARE OF HEALTHY NEONATES

The first week of life is the most critical period in the life of an infant. The expert obstetric care is scarce and the home environment conditions in which baby is born are usually unsatisfactory.

Objectives

1. To establish and maintain cardiopulmonary functions.
2. To maintain body temperature.
3. To avoid infections.
4. For satisfactory feeding regime.
5. For early detection and treatment of congenital and acquired disorders.

What reflexes should be present in an infant?

1. Rooting reflex – The reflex begins when the corner of the baby's mouth is touched.
2. Sucking reflex – Helps the baby become ready to suck.
3. Moro reflex – It is often called as startle reflex.
4. Tonic neck reflex – Also known as fencing reflex.
5. Grasp reflex – When an object is placed in an infant's hand and the palm of the child is stroked. The fingers will close reflexively.
6. Stepping reflex – when the soles of their feet touch a flat surface, they will attempt to walk by placing one foot infront of another.

5.4.1 Nursing care of healthy new born baby includes

I Immediate care

II Routine care

I. Immediate Care

Immediate basic care of neonates at birth includes maintenance of temperature, establishment of airway, initiation of breathing and maintenance of circulation.

1. Clearing the Airway

Airways should be cleaned of mucus and other secretions by gentle suction

Resuscitation may require more active measures such as suction, application of oxygen mask, integration and assisted respiration.

2. Apgar Score

It is an useful quantitative assessment of neonates condition at birth, especially for the respiratory, circulatory and neurological status.

II. Daily routine Care of Neonates

- Warmth
- Care of umbilical cord
- Care of the eyes
- Care of the skin
- Breast feeding
- Baby bath
- Clothing
- General care
- Weight Recording
- Immunization

1. Warmth

Warmth is provided by keeping the body dry and wrapping with adequate clothing. It can be placed in skin to skin contact with mother to maintain temperature. (Auxillary temp 36.5^0 C – 37.6^0C)

2. Care of Umbilical Cord

The umbilical cord is cut about 2-3 inches from the naval with aseptic precautions during delivery and tied with sterile cotton thread or disposable plastic clip. The cord must be inspected for infection.

3. Care of the Eyes

- Eyes should be cleaned with sterile cotton swabs soaked is sterile water or normal saline.
- Observe the eyes for redness, sticky discharge or excessive tearing for early detection of problems and for prompt management.

4. Care of the Skin

- The baby must be cleaned off blood, mucous and meconium by gently wiping before he or she is presented to the mother.
- During hospital stay 'no bath' reduces the incidence of neonatal infections. No vigorous attempt should be made to remove the vernix caseosa.

5. Breast Feeding

- The baby should be put to the mother's breast within half an hour of birth or as soon as possible.
- No prelactal feeds to be given and colostrums feedings must be offered.
- Educate the mother about breast feeding techniques.
- Initially the feeding should be given in short interval of 1-2 hours and then every 2-3 hours. Most babies regularize their feeding pattern by the end of first week.

6. Baby Bath

- During hospital "No bath"
- Baby bath should be given with warm water in warm room
- Baby should be dried immediately from head to toe and wrapped in a dry warm towel.
- Use of olive oil or coconut oil can be allowed after 3-4 weeks of age.
- Exposure to sunlight is an important source of vitamin D and warmth.

7. Clothing

- The baby should be dressed with loose soft and cotton clothes.
- The clothes should not be too tight around the neck or abdomen.
- Clothes should be cleaned with light detergent and washed properly and sun dried.

8. General Care

- Baby should be handled with gentle approach after proper hand washing.
- No infected person should handle.
- Baby should be allowed to sleep in supine position.

9. Weight Recording

- Average daily weight gain in healthy, new born baby increases about 30g/day in the first month of life.
- It is about 20g/ day in second month and 10g/day afterwards during the first year of life.
- Most infants double their birth weight by 4-5 months.

10. Immunization

- All neonates should be immunized with BCG, 'O' dose OPV and 'hepatitis B' vaccine at birth.
- Mother should be informed about the recommended National Immunization Scheme.

5.4.2 Harmful Traditional Practices

Harmful traditional practices are forms of actions in certain communities. A large number of customs and cultural practices are found for mother and child. Harmful practices should be avoided. The examples are

- Use of cow dung or mud on umbilical cord
- Discarding colostrums and delayed breast feeding. Prelactal feeds like gold rubbed in water, honey, sugar water, distilled water and donkey's milk
- Neglecting female new born emotionally and nutritionally
- Instillation of oil into eye and ears before bath
- Using grape water or bonnison
- Giving opium and brandy
- Using feeding bottles
- Application of kajal in the new born eyes

5.4.3 Identification of Risk Infants

It means that a new born has great chances of complication because of the mother during labour or birth.

The basic criteria for identifying these babies include

- Birth weight less than 2.5 kg – preterm or small for date. Weight below 70% expected weight
- failure to gain weight during 3 successive months
- Twins, Birth order 5 and more
- Artificial feeding , Children with diarrhoea
- Congenital disorders like down's syndrome
- Apnoea or asphyxia
- Dimorphism

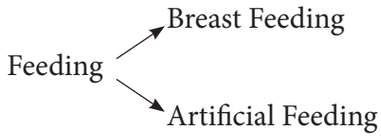
5.5 FEEDING

The growth of the infants during the first 6 months of the life is greater and faster than any other period of life. Feeding plays an important role in it.

Principles

1. To provide sufficient fluid
2. To get adequate food
3. To provide balanced composition
4. To provide easily digestible food

5.5.1 Types of Feeding



Breast feeding: The two important reasons for breast feeding is avoidance of infections and survival.



Advantages of Breast Feeding

1. Ideal composition for easy digestion with low osmatic load.
2. Protection against infection and deficiency disorders.
3. Breast milk are readily available in body temperature and sterile.
4. Requiring no preparation and costs nothing.
5. It has laxative action.
6. No danger of allergy.
7. Maintains healthy mother and child relationship.
8. Chance of conception is less during lactation.
9. Helps in the involution of the uterus.
10. Reduces the risk of breast and ovarian cancer of mother.
11. Breast feeding protects the infant from allergy and bronchial asthma. It also protects against tetany, neonatal hypoglycemia and vitamin deficiencies.
12. It is essential for the brain growth of an infant.

5.5.2 Common Problems in Breast Feeding

Even though breast milk is best to feed the baby as it offers a lot more than just nutrition. There are several challenges in breast feeding. They are

1. Due to mother
2. Due to infant

Due to Mother

1. Reluctance
2. over anxiety
3. Following operative surgery
4. Maternal illness

5. Inadequate secretion

6. Breast ailments

Due to Infant

1. Low birth weight babies

2. Preterm babies

3. Temporary illness

4. Over distension of the foetal stomach

5. Congenital malformation like cleft palate etc

5.5.3 Common positions used during breast feeding

a. Football position

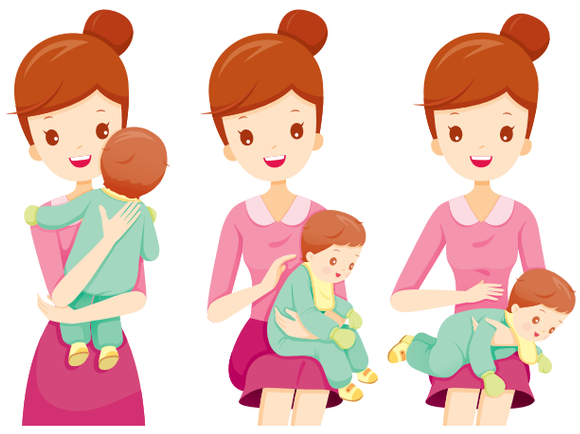
b. Cradling position

c. Lying down position

d. Across the lap position

e. Latching on position

5.5.4 Burping



All babies swallow air when they suck. They collect as a bubble in the babies stomach causing discomfort. So burping of the baby is essential to prevent aspiration of milk into trachea. Burping should be done each time after every feed. Put the baby over the mother's shoulder and give a gentle tap on the child's back, till the baby burps or for few seconds.

5.5.5 Weaning

It is the process of gradually introducing an infant to what will be its adult diet and withdrawing the supply of its mother milk.

Begin the Weaning by 6 Months

Upto six months no other foods (including water) should be given except breast milk.



Problems during Weaning

1. If breast feeding is stopped, suddenly, it can have psychological and nutritional effect on the young children.

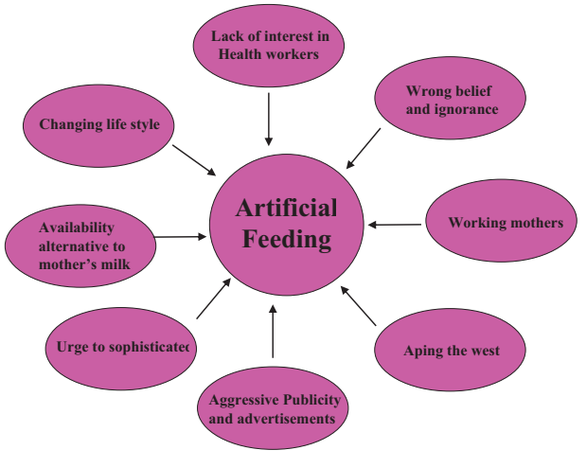
2. Solid foods can cause diarrhoea if not digested properly.

3. If weaning foods are too poor to provide adequate nutrients, the children can develop malnutrition.

5.6. ARTIFICIAL FEEDING

When the infant is feed by any preparation other than breast milk is called artificial feeding.

Factors contributing to rising incidence of artificial feeding in India



Indication

- Contraindication of breast feeding either temporary or permanent reason.
- Mother reluctant in breast feeding.
- Inadequate of breast milk as evidenced by first feeding.
- Changing life style of women or pressurized under socio economic condition.

Foods used

There is no perfect substitute for breast milk. In general boiled liquid cow's milk various dried milk preparation and to a lessen event unsweetened or sweetened condensed milk are commonly used as artificial feeds. In some countries goat's milk or buffalo milk are used.

Composition

	Sugar	Fat	Protein	Minerals	Water	Calories
Human	7	3.5	1.2	0.4	89	67
Cow	4.5	3.5	3.4	0.8	88	67

5.6.1 Storage of prepared Feeds

- Preparing a powdered feed and then storing it is strongly discouraged.
- It should be prepared as near to the time to leave as possible.
- If the feed is not used within 2 hours it should be discarded.
- If reheating a feed, warm water can be used for upto 15 minute either by placing the bottle in the water or by holding it under a running tap.
- Microwaves should not be used due to the inconsistent action of reheating.

5.6.2 Complementary Feeding

It's a gradual addition of solid foods to the infant's diet according to individual infant's capacity and gradual withdrawal of breast / artificial feeding in frequency and quality.

Principles

- Start weaning when child is free from any Gastrointestinal trouble.
- One food item is introduced at interval of 4-7 days to allow for identification of food allergies and to allow the child to get used to it.
- New foods are fed in small amounts from one teaspoon to few tablespoons.
- Food should not be mixed in bottle and feed through nipple.

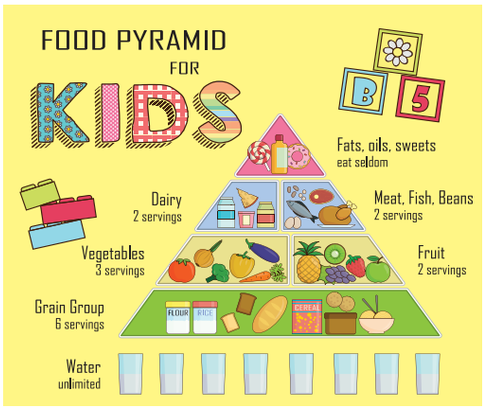
5.6.3 Dietary need

Growth requirements combined with physical activity play a role in determining a child's

nutritional needs. Nutritional needs change with different life stages. It is important to take into account the extra demands placed on the body by these changes.

	Toddler	preschool	School age
Calories (kcal)	1200/day	1500-1600/day	2000-2500/day
Protein	1gm/wt/day	1gm/wt/day	1gm/wt/day
Fluid	1100ml/day	1500 ml/day	2100 ml for boys; 1900 ml for girls
Type	Small frequent chopped food	Food in various colours and shapes	All types of food increased quantity

Food pyramid



Foods to be avoided for children

1. Fast food and junk food like chips, popcorn etc
2. Processed meats
3. Canned fruits and drinks
4. Honey
5. Dipping sauces
6. Raw milk and eggs

5.7 IMMUNIZATION

Immunization against vaccine preventable diseases is essential to reduce the child mortality, morbidity and handicapped conditions. It is mass means of protecting large number of children from various diseases.

Definition

Immunization is the process of protecting an individual from diseases through introduction of live /killed/attenuated organisms in the individual system.

5.7.1 Vaccine preventable Diseases

a) Six killer vaccine preventable diseases

- Poliomyelitis
- Tuberculosis
- Diphtheria
- Pertussis
- Tetanus
- Measles

b) Other vaccine Preventable Diseases

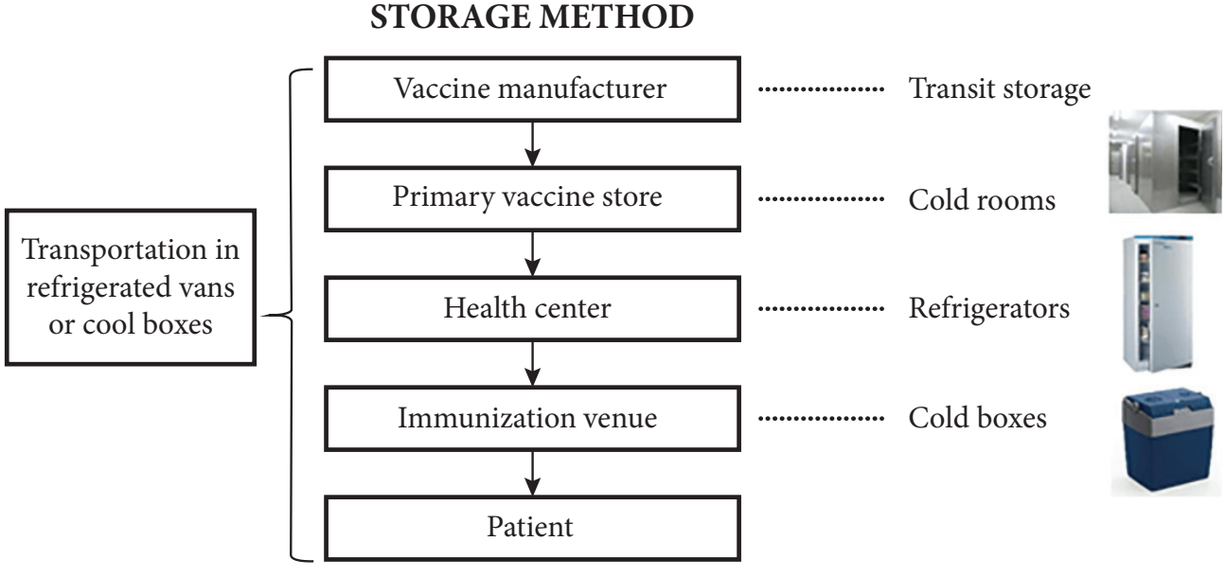
- Hepatitis B
- Rubella
- Typhoid
- Influenza
- Chickenpox
- Yellow fever
- Plague
- Rabies

5.7.2 Immunization Schedule

- Mumps
- Haemophilus influenza Type B
- Meningococcal meningitis
- Pneumococcal Pneumonia
- Rotta virus
- Diarrhoea
- Cholera
- Malaria

Immunization Schedule				
Vaccine	**When to give**	**Dose**	**Route**	**Site**
BCG (Bacilli Calmette Guerin)	At Birth	0.05 ml	Intra Dermal	Tuberculosis
Hepatitis B birth dose	At Birth	0.5 ml	Intra Muscular	Hepatitis
OPV zero dose	At Birth	2 drops	Oral	Polio
OPV 1,2&3 (Oral Polio Vaccine)	At 6, 10 & 14 Weeks	2 drops	Oral	Polio
IPV (Inactivated Polio Vaccine)	At 14 Weeks	0.5 ml	Intra Muscular	Polio
Pentavelant 1,2&3 (Diptheria, Pertussis, Tetanus, Hepatitis B & HIB)	At 6, 10 & 14 Weeks	0.5 ml	Intra Muscular	Diptheria, Pertussis, Tetanus, Hepatitis B & Haemophilia Influenza B
Measles – 1st dose	At 9 Completed Months	0.5 ml	Subcutaneous	Measles
DPT Booster – 1	16 – 24 Months	0.5 ml	Intra Muscular	Diptheria, Pertussis, Tetanus
Measles – 1st booster dose	16 – 24 Months	0.5 ml	Subcutaneous	Measles
OPV Booster	16 – 24 Months	2 drops	Oral	Polio
DPT Booster - 2	5 – 6 Years	0.5 ml	Intra Muscular	Measles
Tetanus Toxoid (TT)	10 & 16 Years	0.5 ml	Intra Muscular	Tetanus
Vitamin A can be administered to children 1 – 5 years old during bi annual rounds, in collaboration with ICDS				

5.7.3 The Cold Chain



The cold chain system is necsessary, because vaccine failure may occur due to store and transport under strict temperature controls.

Definition

The cold chain is a system of storage and transport of vaccines at low temperature from the manufacturer to the actual vaccination site.

The Cold Chain Equipment

The cold chain equipment consists of:

- Walk in cold rooms
- Deep freezers
- Ice lined refrigerator
- cold boxes
- Vaccine carriers
- Dry carriers
- Ice packs

For successful cold chain system, cold chain equipment, transportation system and motivation and training of the workers for maintenance of cold chain link are essential.





Vaccines stored

- Freezer – polio and measles.
- Cold compartment – DPT, DT, TT, diluents, typhoid and BCG.

5.8 DISORDERS OF NEWBORN

Neonatal disorders means disturbance of normal state of body organs and abnormal function of a new born.

Neonatal Disorders

Minor Major

5.8.1 Minor Disorders of the Newborn

1. **Molding:** The head may appear asymmetric in the new born of a vertex birth caused by the over riding of the cranial bones during labour and birth. Diminishes within few days after birth.
2. **Stuffy Nose:** Stuffy nose leads to mouth breathing and excessive air swallowing which leads to abdominal distension and vomiting. Cleaning the nostrils with cotton swabs socked with normal saline will reduce the problem.
3. **Thrush:** Thrush may be oral or in the napkin area including buttocks and inner thighs. Treatment is 1% G.V paint or Nystatin suspension applied with cotton swabs.
4. **Phimosis:** Pinpoint prepuce which makes the baby cry during micturition. It requires dilatation by mosquito forceps.
5. **Mangolian Spots:** Bluish black areas of pigmentation more commonly noted on the back and buttocks. They fade gradually all over months or years.
6. **Nevi :** Telengiectatic nevi are pink and easily planched. They may appear on the upper eyelids, nose, upper lip and nap of the neck. They have no clinical significance and fade my second year of life.

7. **Physiological Jaundice:** 40% of term neonates and 60% of preterm neonates develop physiological jaundice. Jaundice becomes visible on second and third day. Usually peaking between the second and fourth day and decreasing between 5th and 7th days of life. It is believed to be the result of increased bilirubin production from the break down of foetal RBCs. Treatment is not necessary, but some children may need phototherapy.

8. **Pseudo Menstruation:** Pseudo menstruation or vaginal bleeding is caused by pregnancy hormones. It resolves when maternal hormones deplete from neonates body. Reassure the parents.

9. **Vomiting:** Many newborns vomit, be alert indicate a bowel obstruction which needs attention. Vomi of blood vomit, vomiting green - bile can ting can be due to motion sickness or indigestion.

10. **Dehydration:** The water content in the body reduces resulting in dehydration. When babies suffer from health problems like cold, cough or throat infection, the intake reduces and resulting in dehydration.

11. **Diarrhoea:** The poop is normally much softer than an adult, if it suddenly gets much looser or more watery and happens more often and in large amounts it may be diarrhoea. An infection with a virus, bacteria or parasite. Babies can get dehydrated very quickly within a day or two after diarrhoea starts. Continue breast feeding or formula feeding. Small amounts of hydrating solutions should be given frequently.

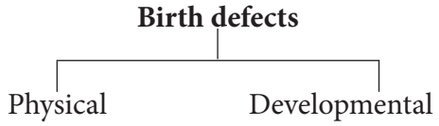
12. **Cord infection :** Infection of the umbilical cord stump is called as omphalitis. It can be caused by skin bacteria. Application of an antiseptic to umbilical cord is a best treatment.

5.8.2 Major New born Disorders

It can be divided into congenital anomalies and acquired problems.

Congenital Anomalies

It can be defined as structural or functional anomalies, for example metabolic disorders. That occur during intra uterine life and can be identified in prenatal period or birth, or some times may only be detected in infancy such as hearing defects.



Most Common Types

a. Congenital Heart Disease: An abnormality in the heart that develops before birth ex. Ventricular septal defect.

b. Down Syndrome: A genetic chromosome 21 disorder causing developmental symptoms.

c. Cleft Lip and Palate: Opening or splits in the roof of the mouth and lip.

d. Spina Bifida: Failure in the development of spinal cord.

e. Club Foot: Foot is twisted out of shape or position.

f. Phenyl Ketonuria: A birth defect that causes amino acid called phenylalanine to build up in the body.

g. Edward's Syndrome : A condition that causes severe developmental delays due to chromosome disorder. It also called as trisomy 18.

5.8.3 Childhood Accidents

Despite the best child proofing and safety efforts childhood accidents sometimes happens. The examples are

- Burns
- Poisoning
- Drowning
- Falls
- Choking, strangulation and suffocation.
- Common injuries
- Mishandling guns and cars

Management

Call an ambulance if the child shows the following after accidents.

- Unconscious
- Vomited and drowsy
- Poisoned
- Dyspnoea
- Unstopped bleeding from cut or ear
- Severe pain

5.9 HEALTH PROGRAMMES RELATED TO CHILDREN

- Maternal and child health programme (MCH)
- Weekly iron and folic acid supplementation (WIFS) Programme
- National Deworming day
- Universal Immunization Programme
- Rashtriya Bal Swasthya Karyakram (RBSK)
- Pulse Polio Immunization (PPI)
- Intensified efforts to reduce child deaths due to diarrhoea
- The Reproductive and Child health Programme (RCH)
- Integrated Child Development Services (ICDS)
- Balwadi Nutrition Programme
- Mid-day meal programme
- Pallisirar Kannoli Kappom Thittam

Since India became independent several measures have been undertaken by the Government to improve the health of the people. A brief account of these programmes which are currently in operation and related to child health are discussed below.

5.9.1 Maternal and Child Health Programme (MCH)

The term maternal and child health refers to the promotive, preventive, curative and rehabilitative health care for mothers and children. The main objective is reduction of maternal, perinatal infant and childhood mortality and morbidity.

5.9.2 Weekly Iron and Folic acid Supplementation (WIFS) Programme

Iron and folic acid supplementation of 100mg iron and 500mg folic acid to reduce the prevalence and severity of anaemia in school going adolescent girls and boys in 6th-12th government / government aided / municipal schools.

5.9.3 National Deworming Day

National deworming day is a single fixed day approach to treating intestinal worm infection in all children aged 1-19 years and is held on 10th February and 10th August each year.



5.9.4 UIP

Universal Immunization Programme (UIP) is a Vaccination Program launched by the Government of India in 1985. It became a part of child survival and safe motherhood programme in 1992. The aim of this programme is to give vaccination for 12 diseases. The twelve diseases are Tuberculosis, Diphtheria, Pertussis, Tetanus, Poliomyelitis, Measles, Hepatitis B, Diarrhoea, Japanese Encephalitis, Rubella, Pneumonia and Pneumococcal diseases.

5.9.5 Rashtriya Bal Swasthya Karyakram (RBSK)

It is a new initiative aiming at early identification and early intervention for, children from birth to 18 years to cover '4D's

- Defects at birth
- Deficiencies
- Diseases
- Delayed developments / Disability

5.9..6 Pulse Polio Immunization: (PPI)

This programme was launched in India in 1995. Children in the age group of 0-5 years administered Polio drops during national and sub national immunization rounds.

5.9.7 Intensified efforts to reduce child deaths due to diarrhoea

The main aim is to reduce child deaths due to diarrhoea. All the deaths due to diarrhoea can be prevented by treating dehydration, with the use of ORS (Oral Rehydration Solution) and administration of zinc tablets along with adequate nutritional intake by the child. ASHA worker would undertake the distribution of ORS packets to households with the supervision of safe drinking water, breast feeding, sanitation, nutrition and hand washing. (ASHA – Accredited Social Health Activist)

5.9.8 The Reproductive and Child health Programme (RCH)

This programme was launched in October 1997. The main aim of the programme is to reduce infant, child and maternal mortality rates and to reduce total fertility rate.

The package include

- Prevention and management of unwanted pregnancy.
- Provision of services to promote child survival.
- Prevention and treatment of reproductive tractt infection and diseases.

5.9.9 Integrated Child Development Services (ICDS)

It was initiated by the Government of India in the Ministry of social and women's welfare in 1975. Which provides food, preschool education and primary health care to children under 6 years of age and their mothers.

5.9.10 Balwadi Nutrition Programme

This programme was started in the year 1970 under the Ministry of Social Welfare. The aim is to provide primary education to 3-6 years children. The food supplement provides 300Kcal and 10gms of protein per children.

5.9.11 Mid-day meal programme

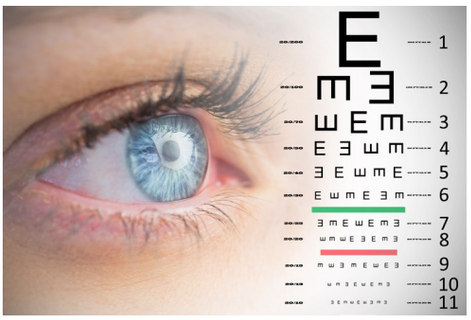
Mid-day meal programme is also known school lunch programme to noon meal programme.

This Programme has been in operation since 1961 throughout the country under Ministry of Education. The object is to attract more children for admission to schools and return them so that literacy improvements of children could be brought about.

Principles

- The meal should be a supplement and not a substitute to the home diet.
- The cost of the meal should be reasonably low.
- The menu should be frequently changed to avoid monotonous.

5.9.12 Pallisirar Kannoli Kappom Thittam:



Refractive errors (need for glasses) are the second main cause for avoidable blind and the rate of optometrists in reducing this condition

significantly. It involved many screening activities including cataract and diabetic retinopathy. School children vision screening occupies the major.

Group Activity: Screen the school children for refractive errors. Refer affected children to the Government Hospital and encourage them to wear spectacles.

CONCLUSION

Growth is an increase in the size of the whole body parts, and the development in the functional maturation. The difference stages of growth and development are explained with the measures.

First primary tooth is lost and permanent teeth begins to erupt at 6 – 7 years. Normal length of the newborn is 47.5cms to 53.75 cms and weight is 2.7 kgs to 3.8 kgs. APGAR score was formulated by Dr. Verginia Apgar in 1950. The baby should be put to the mother's breast with in half an hour of birth or as soon as possible.

All neonates should be immunized with BCG, 'O' dose of OPV, and 'hepatitis B' vaccine at birth. When the infant is feed by any preparation other than human milk is called artificial feeding. Immunization is the process of protecting an individual from a disease through introductions of live/killed/attenuated organisms in the individuals systems.

There are minor and major disorders in infants. Acquired disorders means they are not inherited or present at birth, but developing after birth. Several measures have been under takes by the central government to improve the health of the people. These are called national health programs.

A-Z GLOSSARY

Burping (ஏப்பமிடுதல்)	-	Make a baby belch after feeding typically by patting its back.
Complementary feeding (கூடுதல் உணவு)	-	contributes extra feeding.
Grimace (முகபாவனை)	-	Twisted expression on a child's face.
Immunisation (நோய்த் தடுப்பு)	-	Process of providing immunity against various diseases.
Refractory errors (ஒளிவிலகல் பிழை)	-	The lens fails to focus images on to the retina.

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EVALUATION

DFWQ5

I Choose the correct answer:

1. Six killer vaccine preventable diseases include everything of the following except

a. polio b. Tuber culosis
c. Measles d. Typhoid

2. Birth to 28 days of life in a child is called as

a. Neonate b. Infant
c. Toddler d. Adolescent

3. Mrs.X L.M.P was January 15th she delivered a male baby in September 16th the baby is a

a. Full term baby b. Pre term baby
c. Post term baby d. Normal baby

4. Up to how many months of age, exclusive breast feeding should be given

a. 1 month b. 6 months
c. 8 months d. 2 months

5. Midday meal programme was started since

a. 1961 b. 1986
c. 1950 d. 1956

6. Most of the infant double their birth weight by

a. 4 to 5 months b. 3 to 4 months
c. 6 to 8 months d. 8 to 10 months

7. The baby is said low birth weight neonate when the birth weight is

a. < 3.0 kgs b. < 2.7 kgs
c. 2.5 kgs d. < 2 kgs

8. Measles vaccine should be given at

a. 3 months b. 5 months
c. at birth d. 9 months

9. In Which month the infant crawls?

a. 4 months b. 5 months
c. 11 months d. 8 months

10. Maximum APGAR SCORE is

a. 8 b. 15 c. 11 d. 10

11. Bluish black areas of pigmentation more commonly noted on the back and buttocks of the newborn

a. Nevi b.thrush
c. Mongolian spots d. Skin rashes

12. pentavalent protects against

a. Diptheria, pertusis, tetanus, hepatitis B measles.
b. Diptheria, pertusis, tetanus, hepatitis B, polio.
c. Diptheria, pertusis, tetanus, hepatitis B haemophilus influenza type B.
d. Diptheria, pertusis, tetanus haemophilus influenza type B, polio.

13. What is the other name of Edward Syndrome?

A. Trisomy 18 B. Omphalitis
C. Phimosis D. Molding

14. Genetic chromosome 21 disorder is otherwise called as:

A. Edward Syndrome B. Down syndrome

C. Trisomy 18 D. Phimosis

15. What is the treatment for thrush?

A. Normal saline B. 1% G.V. Paint

C. Antibiotics

D. Sodium bicarbonate solution

II Write short answer for the following questions:

1. Midday meal programme
2. Write briefly on the stages of childhood.
3. Enumerate the physical changes in the toddler?
4. Write briefly about APGAR score
5. What are the objectives of neonatal care?
6. What is meant by growth and development?
7. In all Thursdays iron and folic acid tablets are distributed to all students from 6 – 12th standared. Write briefly about this programme.
8. What are the six killer vaccine preventable diseases?
9. What are the principles of complementary feeding?
10. Mention the problems of meaning?

III Write short notes for the following questions:

1. Discuss elaborately the characteristics of the normal newborn.
2. Write any five minor disorder of the newborn.
3. How do you identify risk infants?
4. Write the congenital anamalies of the new born.
5. Write the advantages of breast feeding?

IV Answer the following questions in detail:

1. National Immunization schedule.
2. Discuss elaborately the care of newborn.

REFERENCES

1. Infant and young child feeding. Book by world health organization.
2. Fundamentals of nursing south asia edition Reed Elsevier India private limited.
3. Packet book of hospital care for children book by world health organizations.
4. World book medical encyclopedia 8th edition a scot fetyer company Chicago.

WEBLINKS

- https://www amazon.com>Americon.com
- https://dictionary combridge.org
- Nhm.gov.in>child – health immunization.

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Unit 6



GERIATRIC CARE

LEARNING OBJECTIVES

At the end of this chapter, the student will be able to

- define old age
- explain the aging process
- mention the mental health problem in old age
- describe the sensory system problem in old age
- explain the common diseased conditions in old age
- list the types of elderly care services
- enumerate the common disorders of old age

ஆத்திச்சூடி:

தாய் தந்தைப் பேண்

விளக்கம்:

உன் தந்தையையும் தாயையும் அவர்களுடைய முதுமைக் காலம் வரை அன்புடன் காப்பாற்று

Explanation:

Protect your parents

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6.1 INTRODUCTION

The World Health Organisation(WHO) estimates that about 75% of deaths in people over the age of 65 in industrialized countries are from heart diseases, cancer and cerebrovascular disease. Millions of senior citizen across the globe are not getting proper healthcare they need because government and the society are not aware enough of the problem by 2026, there will be about 1200 million people aged 65 years according to un estimates. 7% of the 1.1 million Indian population is today over the age of 60.

The lifespan for both male (>65 years) and female (75 years) has raised significantly and it is estimated that by the turn of this century, numerically the highest number of old people will be in India.

Nurses and health professionals therefore have to be aware of the complexity of the care of elder people.

6.2 DEFINITION

Geriatrics : A branch of medicine that deals with the problems and disease of old age and aging peoples.

Old age : Period of life when impairment of physical and mental functions becomes increasingly manifested in comparison to the previous years of life.

6.3 AGEING PROCESS

The ageing process is the gradual, decreased ability of the body to functions and to heal itself.

As our body age, they naturally deteriorate in the late years, many essential functions begin operating at a suboptimal level.

There are three main factors that influence the body's ageing process.

First as we grow older, the number of mistake incurred by daily Cellular reproduction increases. The body actually create non-functional cells, leading to more rapid deteriorate of the body's functions with advantage age. A large percentage of our cells even through they were present are useless. These non-functional cells sometime interfere with normal cellular process.

The second part of the ageing process related to Cellular damage that cause the shortening of DNA. As time passes increased damage to healthy DNA leeds to accelerated cell death and our old bodies simply cannot generate cells fast enough to compensate for the loss. This process is most visible and obvious in our skin the older we get the thinner our skin becomes

The third part of the ageing process involves the Cellular deconregulation of our national oxidative enzymes such as superoxide dismutase and catalase and glutathione

perxoidase, making our antioxidant defence less efficient with age.

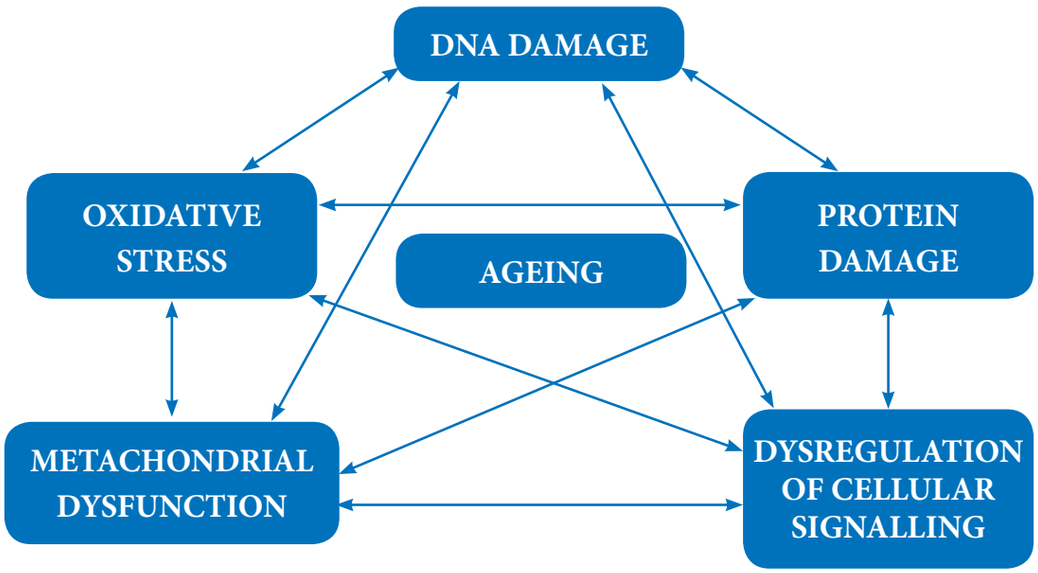
6.3.1 The Ageing Process Starts in Human Organ

From the moment of birth human beings experience continuous aging, however before the age of 25 the body can recover from temporaryconsequencence by itself, after 40 years old the body begins its real journey of ageing.

6.3.2 Common Signs and Symptoms of Ageing

- Increase susceptibility to infection.
- Greater risk of heat, stroke of hypothermia.
- Slight decrease in height as the bones of our spine get spinner and the lost some height.
- Bones break more easily.
- Joint changes ranging some minor stiffness to severe arthritis.
- Stooped posture.

6.3.3 Mechanism of Ageing



6.3.4 Biological Process of Ageing

- The genes determine the lifespan, genes may have a role to play in the ageing process.
- Wear and Tear of important organs by continues functioning .
- Accumulation of toxic materials (E.g.. cholesterol) in the vital organ like heart, brain eye and thereby damaging them.
- Loss of important genetic material during DNA repair.
- Accumulate of stress over lifetime with its resultant effects.
- Exertion of production and deficiency of important hormones e.g. growth hormone and androgen, oestrogen and thyroid hormones.

Evaluation of ageing helps to explain why survival, reproductive success, and functioning of almost all living organism decline at old age.

6.4 SENSORY SYSTEM

6.4.1 Sensory Problems

- Decreased visual perception
- Decreased elasticity of the ear drum
- Decreased sense of smell
- Decreased taste perception
- Decreased touch sensation

People interact with the world through the sense, sensory losses associated with old age affect all sensory organs. Nearly half of older man and one third of older women report difficulty hearing without aHearing Aid 16% of old men and 19% of older women report difficulty seeing even with the corrective lenses.

6.4.2 Vision



- Decrease peripheral vision.
- Decrease night vision.
- Decrease capacity to distinguish colour.
- Reduced lubrication resulting in dry, itchy eyes.

Management

- Approach people directly not from the side.
- Proper lighting can make a big difference.
- Assist with choosing clothes if needed
- Use of natural tear products.

6.4.3 Hearing



- Auditory changes begin to be noticed at about 40 years of age.
- Environmental factors such as exposure to noise, medications and infections as well as genetics may contribute to hearing loss.
- Hearing loss may cause older people to respond inappropriately.
- Older people often cannot following conversation because tones of high frequency consonants (F, S, TH, CH, SH, B, T, P) all sound alike.

Management

- Reduce extra noise when trying to have a conversation.
- Place yourself so the person can see you and fairly close – increased volume not always helpful.

- Make sure you have the persons attention before speaking.
- Have doctor check for and remove wax if needed.
- Arrange for hearing assessment and provide support to use a hearing aid if needed.

6.4.4 Taste and Sweet

- Four basic taste (Sweet, Sour, Salty and Bitter) are particularly dulled in older people.
- Changes in the sense of smell are related to cell loss in the nasal passage and in the olfactory bulb in the brain.
- Environmental factors such as long term exposure to toxins (Dust, Pollen and Smoke) contribute to the cellular damage.

Management

- May enjoy smaller attractive meals help to smell food preparation.
- Serve the food in attractive ways.

6.4.5 Skin

- Age related changes the thickness of epidermis decreases along with loss of moisture making the skin dry and rough.
- The melanocyte number decline which reduces protection against Sun rays and leads to appearance of small hypopigmentedspots.
- In the dermis the fibroblast number and the production of extracellular matrix decreases causing wrinkling of the skin.
- Scalp are turns grey due to loss of melanin.
- Growth of nails slows down.



Management

- Use of moisturizers are bath oils can make bath tub slippery.
- As a care provider keep nails short
- Pat gently when helping to dry after bathing.
- Bottom of feet may be core pay attention to foot dear.
- May feel cooler than others but be more at risk of sun stroke.
- Use sun screen hats long sleeves.
- Be careful with such things as hot water bottles.

6.5 COMMON DISEASE CONDITIONS

The most common problems in the elderly are

1. Cardiovascular problem
   e.g..coronary artery diseases (Angina, acute coronary syndrome, myocardial infarction) hypertension.



2. Respiratory problems
   e.g..COPD, pneumonias, pulmonary tuberculosis and cancer.
3. Diseases of skin
   e.g..Pruritus, skin cancer, bed sores.
4. Diseases of musculoskeletal system
   e.g. Arthritis, osteoporosis, immobility, frequent Falls
5. Neurological
   e.g. CVA (Stroke of cerebrovascular accidents) partinsonism, alzheimeis disease
6. Genitourinary
   e.g. Urinary incontinence, prostate enlargement
7. GI tract
   e.g. constipation, cancer stomach
8. Eye and Ear problem
   e.g Cataract, retinal detachment, deafness.
9. Hematological
   e.g. Anaemia

6.6 TYPES OF ELDERLY CARE OF SERVICES

- Health promotion
- Preventive services
- Rehabilitative services
- Home based care
- Old age pension scheme

6.6.1 Health Promotion

Geriatric clinics are available in PHC, community health centres, and district level to provide care.

Objectives

- Health education related to healthy aging.
- Domiciliary visit to home bound / bed ridden elderly persons.
- Arrange for suitable calipers and supportive devices (walking sticks, callipers, infared lamp, shoulder wheel, pulley walkers)
- Linkage with other support groups and day Care Centre.
- 30 bedded geriatric ward for in patient care and dedicated beds for the elderly patients in the carious specialities
- Laboratory investigation required for elderly with a special sample collection centre in the OPD block. Tertiary health care to the cases referred from medical colleges, district hospitals and below.

6.6.2 Preventive Services

- Primary prevention : refers to prevention of disease (e.g., immunization, chemoprophylaxis)
- Secondary prevention: is the early detection of disease before it becomes symptomatic (e.g. mammography to detect early breast cancer)
- Tertiary prevention: refers to activities to optimize health once disease is already detected.

Primary Prevention

Definition

Primary Prevention is concerned with preventing the onset of disease it aims to reduce the incidence of disease.

a. Councelling, life style modification

- Diet
- Physical activity
- Safety and injury prevention
- Smoking cessation
- Dental care

b. Immunizations

Secondary Prevention

Definition: Secondary prevention aims to reduce the impact of a disease or injury that has already occurred. Regular screening is required to detect diseases in its earliest stage.

- Hypertension : check blood pressure at least annually
- Obesity and malnutrition : measures weight and height at least annually
- Visual deficits: Routine screening with a snellen chart annually
- Hearing impairment: it is recommended to periodically questioning older adults about their hearing abilities annually.
- Dyslipidemia : Patients with prior MI or angina should be screened for lipid abnormalities annually.

Tertiary Prevention

Definition: Tertiary prevention refers to interventions designed to arrest the progress of an established disease and to control its complications.



6.6.3 Rehabilitative Services

Definition: Rehabilitation is a treatment designed to facilitate the process of recovery from injury, illness or disease to normal condition as possible.

1. Eating a healthy diet

- Especially rich in minerals and vitamins so as to provide necessary protection to the bones and from other host of illness too
- Includes also adequate water consumption

Four Simple Rules For Elderly Diet

- Divide the daily food intake into 3 – 4 small meals.
- Should eat foods like fruits, vegetables, which needs some chewing
- Advice them to take foods containing fibres like course cereals and vegetables
- Avoid fatty foods.

2. Regular yoga or Exercise Regime

To follow a disciplined schedule of favourably yoga practices with or without mild exercises.

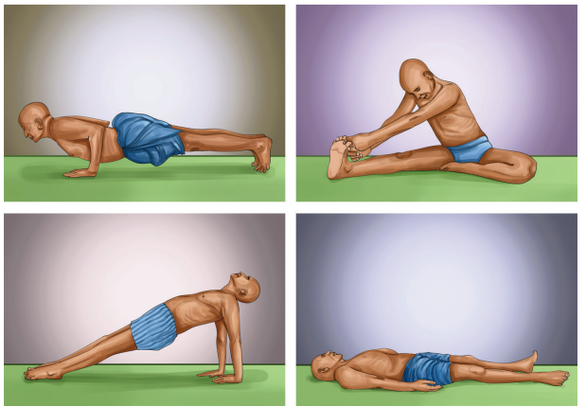
How senior citizen should do Yoga

- They should perform yoga under the guidance of yoga expert
- The instructor should be aware of the health concerns and ability level

- Reduce the length of time
- Encourage them and praise their effort
- Do not perform a lot of complicated poses

Best Yoga Asanas for Elderly

- Shavasana
- Uttanapadasana
- Naukasana
- Pawanmuktasana
- Ardhashalbhasana
- Shalbhasana
- Bhujanasana
- Makarasana
- AnulomVilom Pranayama
- Bhramri Pranayama



Advantages of Yoga for Elderly

* Yoga helps to reduce positive pressure and increase negative pressure
* Yoga reduces urinary acidity and uropepsin
* Reduction of high blood pressure, heart rate and coronary problems

3. Active Life Style

- It includes indulging in favourite part time of hobbies apart from the exercises.
- Prevents stagnation (Tamas) from accumulating causing further degeneration and depression.
- Should be motivated to do those activities. Which was always yearned to do while they were younger.

4. Take occasional alternative Therapies

- Massage
- Hydrotherapy
- Acupuncture
- Chromotherapy
- Diet therapy
- Ayurvedic rejuvenation therapies
- Physiotherapy
- Occupational therapy

5. Avoid harmful habits

- Smoking
- Strict dieting
- Alcohol
- High caffeine consumption

6.6.4 Home Based Care



- A home health nurse can assist in the care of the aged by helping the family to provide safe housing. Good diet, happy surrounding and some kind of recreation. This will help the old aged to overcome infection, mental stain and frustration, bed sore.

6.6.5 Old Age Pension for the General Public

Indira Gandhi National Old Age Pension Scheme.(IGNOAPS)

- Started on19th Nov 2007.

- All BPL (below poverty line) families
- All pension of 65 years or above
- Central assistance at the rate of Rs. 200 per month per beneficiary Status have been urged to give matching accounts.

Annapurna

Free food grains (wheat or rice) upto 10 kg per month are provided to older persons 65 years or above who are other wise eligible for oldage pension under the national old age pension scheme.

Insurance Schemes

Rashtriyaswasthyabrmayojana

- It was from 1st April, 2008.
- Ministry of labour and employment, gross
- To provide health insurance coverage for BPL families.

Varistha Mediclaim Policy

- Covers hospitalization and domiciliary hospitalization expenses.
- Coronary artery surgery, cancer, renal failure, stroke, multiple sclerosis and major organ transplants. Paralysis and blindness are covered at extra premilem.

Improving Quality Of Life

- Cultural programme
- Old age club
- Meals on wheel service
- Home help
- Old age home (Vruddhashrama)

CONCLUSION

The ageing process is a profound and life – changing experience. The body slowly begins to weaken, resistance to disease is decreased and recovery time in prolonged. Acute and chronic medical conditions become more common and life – disrupting condition such as incontinence and falls can severely affect independence and quality of life. Many people age 65 or older self – report some sort of disability. These may be minor or they may be significant requiring the older person to need skilled assistance. The ageing process is experienced differently by each of us. But age – related changes are inevitable. Apart from this the types of elderly care services and common disorders of elderly has been included.

A-Z GLOSSARY

Geriatrics (*முதியோர்கள் பற்றிய மருத்துவத் துறை*)	-	A branch of medicine that deals with the problem of diseases of old age and aging people.
Old age (*முதுமை*)	-	Period of life when impairment of physical and mental functions become increasingly manifested in comparison to the previous years of life.
Primary Prevention (*முதன்மை தடுப்பு*)	-	Refers to prevention of diseases.

EVALUATION

NT378

I Choose the correct answer:

1. Cellular damage and DNA shortage occurs in the which part of old age?
   A. First part B. Second Part
   C. Third Part D. Fourth Part
2. What is the reason for hypo pigmentation is the skin?
   A. Increased Melanocyte
   B. Decreased Melanocyte
   C. Sunlight D. Infra-red light
3. Name the condition caused by decreased melanin production?
   A. Hypopigmentation
   B. Hyperpigmentation
   C. Diabetics D. Wrinkling of the skin
4. Decrease production of extracellular matrix in the skin causes _____
   A. Hypopigmentation
   B. Wrinkling of the skin
   C. Hyperpigmentation D. Diabetics
5. What is the main aim of Primary Prevention?
   A. Early detection B. Immunization
   C. Nutrition D. Optimize health

II. Short Answer

1. Define - Ageing
2. What is Primary Prevention?
3. What are the rules for elderly diet?
4. What are the advantages of Yoga for elderly?
5. Explain the alternative therapies of elderly?
6. How do you improve the quality of elderly life?
7. Write about the elderly care services?

III. Short Notes

1. Explain the process of Ageing.
2. What are the skin changes that occur in oldage
3. Write down the sensory problems in old-age.
4. What are the objectives of health promotional
5. Explain the preventive services of elderly.

REFERENCES

1) Linda S Williams,Paula D Hopper, Medical Surgical Nursing, II edition, F.A Davis publication Pp 209-224
2) SN Chuagh ,Medical Surgical Nursing, I edition, APC Publication, Pp 1336-1362
3) Suzanne C Smelter, Brenda G, Medical Surgical Nursing, 12 th edition, Pp 200-224
4) Potter Perry Stockert, Fundamentals of Nursing, second edition, pp 256-350.

WEBLINKS

- https://www.mdpi.com
- https://www.nchi.nim.n:h.gov
- https://www.msdmanuals.com
- https://www.researchgate.net

www.tnschoolbooks.in

Unit 7



PSYCHIATRIC NURSING

LEARNING OBJECTIVES

At the end of this chapter, the student will be able to

- define health, Mental health, Psychiatric and Psychiatric Nursing
- able to differentiate mentally healthy and mentally ill person
- understand the principles of psychiatric nursing
- know childhood behavioral problems
- understand the oldage problems

BVUKN

திருக்குறள்:

மனநலம் மன்னுயிர்க் காக்கும் இனநலம்

எல்லாப் புகழும் தரும்

விளக்கம்:

நிலைபெற்று வரும் உயிர்களுக்கு மனநலம் சிறந்த செல்வம் தரும். இனநலமோ எல்லாப் புகழையும் தரும்.

EXPLANATION:

Although they may have great goodness of mind, yet good society will tend to strengthen it .

7.1 INTRODUCTION

As you start to study psychiatric – mental health nursing, you may be excited and even anxious. The field of mental health often seems a little unfamiliar. The mind is about mental processes, thought and consciousness, the body is about the physical aspects of the brain – neurons and how the brain structured. Mental health includes our emotional, psychological and social well-being, it affects how we think, feel and act. It also helps to determine how we handle stress and make choices. Mental health is very important at every stages of life, from childhood, adolescence and adulthood.

7.2 TERMINOLOGIES

Mental Health: Mental health is a state of balance between the individual and the surrounding world, a state of harmony between himself, with others and their environment

Mental illness: Mental illness is a collective term that refers to all the different types of mental conditions, including those that effect "your mood your thinking and your behaviour".

Psychiatry: Psychiatry is a branch of medicine that deals with the diagnosis, treatment and prevention of mental illness.

Psychiatric Nursing: Psychiatric nursing deals with the promotion of mental Health prevention of mental illness, care and rehabilitation of mentally ill individuals both in hospital and community.

The word Psychiatry is derived from the Greek word "Psyche" means soul or mind "iatros" means healer.

7.3 PRINCIPLES OF PSYCHIATRIC NURSING

- Accept the patients as exactly as they are
- Use self-understanding as a therapeutic tool.
- Focuses on the strengths, not on weaknesses of the client
- Views the client's behavior non judgmentally
- Establish and maintain therapeutic nurse client relationship
- Ensure clients security
- Change the client's behavior by emotional experience
- Avoid approaches which will increase the client's anxiety
- Avoid physical and verbal forces as much as possible
- Maintain the basic principles of nursing while following any procedure
- Nursing care centered on client as a person
- Explain routine and procedures at the client level of understanding

7.4 MISCONCEPTION ABOUT MENTAL ILLNESS

- Mental illness is caused by supernatural power
- It is the result of curse by evil spirit
- Mentally in people are violent

- Mental illness is something to be ashamed of
- Mental illness cannot be cured
- Marriage can cure mental illness
- Only adults and older adults experience mental illnesses.

7.5 DIFFERENCE BETWEEN MENTAL HEALTH AND MENTAL ILLNESS

Mental Health	Mental Illness
Accepts self to others	Feelings of inadequacy, Poor, Self-concept
Ability to cope and tolerate stress	Inability to cope
Ability to form close and lasting relationship	Inability to establish meaningful relationship
Uses sound judgment to make decision	Displays poor judgment
Accepts responsibility	Irresponsibility
Optimistic (All is going well)	Pessimistic (The feeling of things badly)
Recognizes limitations	Does not recognize limitations
Functions effectively and independent	Exhibits dependency
Able to perceive	Unable to perceive reality

7.6 MENTAL STATUS EXAMINATION

Mental status examination includes general appearance behaviour, speech pattern, mood delusion, changes in prescription like hallucination and illusion. And also assessment of higher mental functions of consciousness, alteration concentration, memory, orientation, intelligence and insight about illness.

7.7 CHILDREN AND MENTAL HEALTH

7.7.1 Mental Retardation

Mental retardation is a condition of both clinical and social importance. It is characterized by limitations in performance that result from significant impairments in measured intelligence and adaptive behaviour.

Mental retardation is defined as:

* Significantly sub average general intellectual functioning (IQ below 70)
* Significantly deficit or impairment in adaptive functioning
* Which manifests during the period of development (before 18 years of age)

Types

- Mild mental retardation (IQ 50 - 70) 85% of the total mental retardation
- Moderate MR –(IQ 35 - 49) 12% of the total MR. Most of them can talk and learn
- Severe MR(IQ 20 - 34) 7% of the total MR. Only few of them learn to care for themselves completely

Responsibilities of home health nurse in care of the mentally retarded

Primary prevention

* Good antenatal check – up
* Improving socio – economic status
* Education
* Facilitating research to identify the genetic counselling cause

Secondary level

* Early detection of defects and correction
* Prevention of child abuse and sexual abuse

Tertiary prevention

* Treatment of physical and psychological problems
* Behaviour modification
* Physiotherapy to treat the rehabilitation disability

Effects of MR on the family

* Distress, Depression, guilty feeling
* Over indulgence
* Social problems
* Marital disharmony
* Dissatisfaction about medical and social services

7.7.2 Behavioural problems

Children abandoned by their families present severe social and health problems.

Definition

Behavioural problem is characterised by a significant deviation from the socially accepted normal behaviour.

Etiology

- Faulty parental attitude.
- Inadequate family environment
- Mentally and physically sick or handicapped children
- Influence of social relationship
- Influence of mass media

Common Behavioural Problems

a) Feeding problems:

Food refusal

Over eating

Pica

Anorexia nervosa

b) Habit disorders

Lack of physical activity

Thumb sucking

Nail biting

Enuresis - involuntary urination.

Encopresis - involuntary passage of faeces.

Internet addict

c) Sleep problems

Somnambulism - sleep walking.

Night terrors

Nightmares

Insomnia - Inability to fall asleep.

d) Adjustment problems

Disobedience

Misconduct

Temper tantrum

e) Anti social problems

Delinquency

Kleptomania - Uncontrollable desire to steel.

Drug abuse

Alcohol abuse
Sexual abuse
Teen pregnancy
Smoking

Management

- Warm and understanding family environment communication between family members should be direct.
- Deal with emotional disturbances at the earliest.
- Behavioural therapy.
- Positive reinforcement
- Relaxation therapy
- Referral to child guidance clinic
- Drug therapy.

7.7.3 Dyslexia



Dyslexia means difficulty in reading or learning to read accompanied by difficulty in writing and spelling correctly.

'Dys' means difficulty

'lexia' means words

Causes

- Congenital
- Acquired brain damage

(Birth trauma use of medication like phenobarbitone)

Signs and Symptoms

- Difficulties with –
  - Concentration
  - Perception
  - Memory
  - Verbal skills
  - Abstract Reasoning
  - Hand eye co ordination
- Lazy
- Rebellious
- Isolation
- Discouragement
- Low – self esteem

Dealing with dyslexia

- Professional testing is necessary for the accurate diagnosis of dyslexia
- There are children who need to be identified early and taught in way they can understand and learn which is not of the normal teaching style
- Since language is a problem, these children are to be extempted
- A dyslexia must have to one training to first develop basic skills. This allows the student to stay focused

Techniques of handling of dyslexia child

Parent:

- Help him with his or her homework
- Help him with his or her reading
- To focus his or her attention
- To take right book to school
- By giving precise clear instruction
- By not punishing him or her for his or her childishness delay in completing his work
- By instructing him or her with more do's than don'ts

Teachers:

- Giving less written class work and home work
- Testing them orally
- Giving marks for content without reducing marks for grammatical and spelling errors
- Marking less red lines in the note book
- Giving extended time to finish tests
- Reading the question paper during the class
- Not punishing the child for messy work and poor handwriting
- Emphasising on quality work rather than quantity

Management

- Remedial education
- Medical approach
- Psychological approach

7.8 WOMEN'S MENTAL HEALTH

Women go through a range of emotions throughout their life .This can be due to the changes in hormones at every phase in their life. One must be able to identify these and identify which needs medical attention. Nurses may be able to identify these concerns, when they interact with them.

- Some women may seek attention for depression , anxiety , sleeplessness and may approach a hospital / clinic . The nurses should be polite , understanding to their needs , and listen to them patiently . They must not be judged , should not ignore these symptoms . The physician in charge should be intimated about these symptoms .

7.8.1 Post Partum Disorders

Definition:

Post-partum disorders , an array of conditions which is frequently seen with new mothers .

This usually arises after delivery and can last up to 6 weeks.

Causes: Emotional and hormonal changes owing to birth

Types: It can range from post-partum blues to depression to psychosis.

Symptoms:

PP Blues – Mood swings, sadness, irritability, trouble sleeping, reduced appetite .

PP Depression: – frequent crying, anxiety, difficulty bonding with baby,

intense anger and irritability, Depressed, excessive crying, withdrawing from friends and family .

PP Pyschosis – Confusion, obsessive thoughts, sleep disturbances, hallucinations, delusions, often suicidal .Needs therapy.

Treatment:

PP Blues : transient self-limiting.

PP Depression : Needs medical attention.

PP **Pyschosis** : Needs therapy .

Role of Nurses in PPD:

- To identify the signs in women and alert the physician.
- To provide moral support in treatment of the patients .

7.9 MENTAL HEALTH OF GERIATRIC

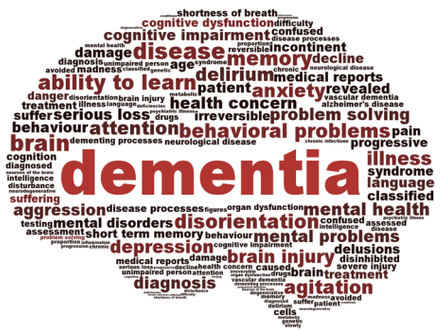
Changes in cognitive ability, excessive forget fullness and moodswings are not a part of normal aging. Changes in mental status may be related to many factors such alteration in diet and fluid and electrolyte balance. Therefore health professionals must recognize, assess, refer, collaborate, treat and support older adults exhibit noticeable changes in intellect of affect.

7.9.1 Some Of The Common Problems

- Depression
- Acute confusional state (Delirium)
- Anxiety disorders
- Cognitive impairment and dementia
- Late life delusional disorder
- Alcoholism
- Personality disorder
- Obsessive compulsive disorder
- Drug and substance abuse.
- Sleep and rest pattern
- Coping abilities

7.9.2 Dementia

Dementia and acute confusional state usually are the result of organic diseases characterised by impairment of intellectual functions. E.g.. aphasia, aphaxia



Clinical Manifestations

- Language impairment
- Apraxia (difficulty in performing skilled tasks)
- Agnosia (inability to recognise objects)
- Impaired executive function (poor performance, poor judgement and planning)

Diagnosis

- History collection
- Clinical examination including mental function

- CSF examination
- CT scan

Treatment

- Home health aid to assist in personal hygiene home cares to assist in house work transportation
- Support groups such as the alzhemeirs associations are often of value to the family
- Legal council should be recommended to help the patient and family

7.9.3 Delirium

- Delirium called acute confusional state and progressive to disorientation.
- Delirium due to hyponatraemia, hyperosmolality, hypercapria



Clinical Manifestations

- Disturbance in memory,
- Thought disorder
- Emotional changes
- Disturbance of perception.

TREATMENT

Supportive treatment ECT (Electroconvulsive Therapy)

Anopsychotics

7.10 SPECIFIC PROBLEMS IN MENTAL HOSPITALS

- Escape from Mental hospital
- Death
- Pregnancy
- Unknown Patient
- Mentally ill offender (Mentally ill criminals)

7.11 HUMAN RIGHTS OF MENTALLY ILL

Psychiatry patients currently have the following rights;

- Right to communicate with people outside the hospital through, telephone and personal visits
- Rights to keep clothing and personal effects with them in the hospitals
- Right to religious freedom
- Right to be employed if possible
- Right to manage and dispose of property
- Right to execute wills
- Right to make purchases
- Right to education
- Right to independent psychiatric examination
- Right to privacy
- Right to informed consent / Right to treatment
- Right to refuse treatment

CONCLUSION

In this chapter we learnt about the importance of mental health in nursing. So that, the students will be able to understand the responsibilities in giving care to the mentally ill person. Childhood behavioral problems and mental retardation also discussed. Common oldage problems like dementia and delirium also explained. In future this content will be very useful for nursing students to deal with the patients in the hospital atmosphere with mental disabilities.

A-Z GLOSSARY

Delirium	-	called acute confusional state and progresses to disorientation.
Dementia	-	Impairment of intellectual functions
Dyslexia	-	Difficulty in reading
Post-partum depression	-	A type of depression that happens after having a baby
IQ	-	Intelligent quotient – Measures individual intelligence

EVALUATION

I Choose the correct answer:

1. Which is a state of balance between the individual and the surrounding world?
   A. Mental Health B. Mental illness
   C. Psychiatry
   D. Psychiatric Nursing
2. Give an example for warning signs of mental illness.
   A. Self Respect
   B. Emotional Maturity
   C. Change in personality
   D. Good relationship
3. What is meant by optimistic?
   A. Person with positive mind
   B. Person with Negative mind
   C. Ability to take decision
   D. Unable to take decision
4. What is meant by a pessimistic?
   A. Person with positive mind
   B. Person with Negative mind
   C. Ability to take decision
   D. Unable to take decision
5. Somnambulism means
   A. Walking in sleep B. Fear in sleep
   C. Bad dream in sleep D. Sleeplessness
6. Insomnia Means
   A. Walking in sleep B. Fear in sleep
   C. Bad dream in sleep D. Sleeplessness

II. Write brief answers for the following questions

1. What is meant by psychiatric nursing?
2. What is meant by mental illness?
3. Mention any three about the misconception of mental illness?

4. What is meant by Drug abuse?
5. What are the managements of Drug abuse?
6. What is meant by Behavioral disorder?
7. Define – Dyslexia
8. What is Dementia?
9. Write the causes for delirium?
10. Write the symptoms of post-partum disorder.

III. Write short notes for the following questions.

1. Write the warning signs of mental illness.
2. Write the difference between mental health and mental illness.
3. Write the etiology of childhood behavioral problems.
4. Explain about Dementia
5. Explain about Delirium.

IV. Write in details .

1. Write in detail about the principles of psychiatric Nursing.
2. Write in detail about the handling of dyslexia child.

REFERENCES

1) Vijaykumar. S. Challenges before the elderly An Indian scenario New Delhi. MD publication: 1995.
2) American Psychiatric Association: Diagnostic and statistical manual of mental disorders 5th edition. American psychiatric Association, 2013

WEBLINKS

- https://www.cmsschicago.org
- https://wwwPortea.com>eldercare
- https://www.msdmanuals.com>en-in

Unit 8



DISASTER MANAGEMENT

LEARNING OBJECTIVES

At the end of this chapter, the student should be able to

- define disaster
- list out the types of disaster
- explain the phases of disaster management
- enumerate the natural calamities.
- describe about disaster nursing
- discuss the role of nurses in disaster preparedness
- brief legal implication in disaster management.

திருக்குறள்:

வெள்ளத் தனைய இடும்பை அறிவுடையான்
உள்ளத்தின் உள்ளக் கெடும்.

விளக்கம்:

வெள்ளம் போல் அளவற்றதாய் வரும் துன்பமும், அறிவுடையவன் தன் உள்ளத்தினால் அத் துன்பத்தின் இயல்பை நினைத்த அளவில் கெடும்.

EXPLANATION:

A flood of troubles will be overcome by the (courageous) thought which the minds of the wise will entertain, even in sorrow.

8.1 INTRODUCTION

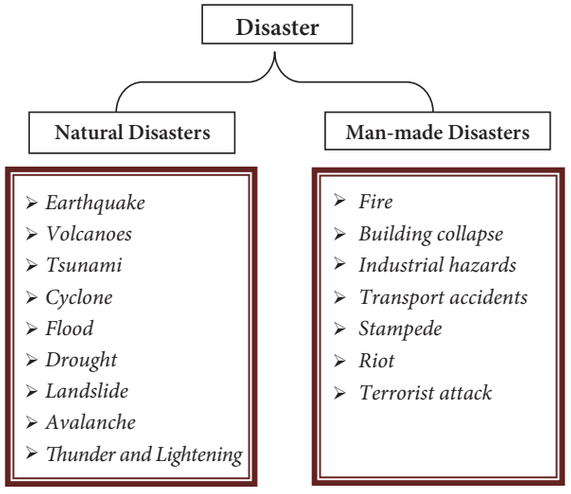
Disaster is any occurrence that causes ecology disruption, loss of human life, and deterioration of health services on a scale sufficient to warrant an extraordinary response from outside the community area.

Disaster occurs suddenly and unexpectedly, disrupting the normal life and infrastructure of social services including health care system.

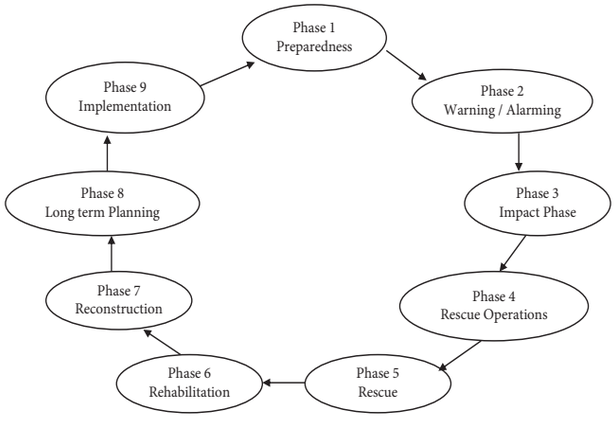
8.1.1 Definition

A disaster is a serious disruption of the function of a community or a society involving widespread human, material, economic or environmental loss and impacts, which exceeds the ability of the affected community or society to cope using its own resources.

Types of Disasters



8.2 PHASES OF DISASTER MANAGEMENT



8.3 NATRURAL CALAMITIES

8.3.1 Flood

When excess of water overflows, it submerges land and destroys everything that get in its way. This is called flood. Flood usually caused when the volume of water with in a lake, river, or other body of water exceeds the total capacity of the body. Sometimes level rise and causes it overflow its channel.



During Flood

- Turn off the electricity to reduce the risk of electrocution.
- Protect people and property (as soon as the flood begins, take the vulnerable group, children, the old, sick and the disabled to an upper floor)
- Whenever possible, move personal belonging upstairs or go to raised shelters provided for use in floods.
- Beware of water contamination if the taste, colour or smell of the water is suspicious. It is vital to use some means of purification.
- Evacuate denser zones as ordered by the local authorities.

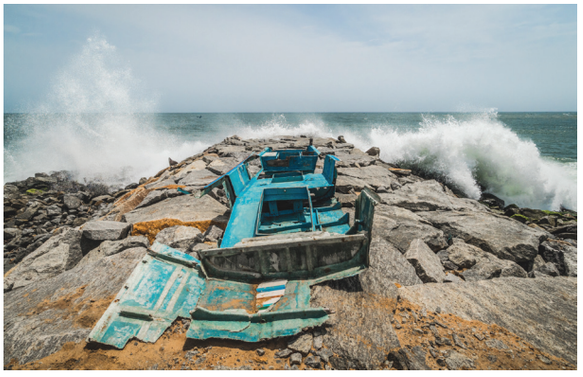
After a flood

When a flood is over, it is important, people do not return home until that told by local authorities, who will have ensured that buildings have not been undermined by water.

From then on it is essential to;

- Wait until the water is declared safe before drinking.
- Clean and disinfect any room that has been flooded.
- Sterilize or wash with boiling water all dishes and kitchen utensils.
- Get rid of any food that has been in or near the water including canned foods and any food kept in refrigerators and freezers.
- Get rid of all consumables (drinks, medicines, cosmetics, etc.,)

8.3.2 Earthquakes



Earthquake is one of those type of natural disaster that strike without an early warning signal. An earthquake is the result of the sudden break within the uppercrest of the earth, which may also break the surface and lead to the vibration of the ground.

During an Earthquake

- Keep people calm – do not get panic.
- People who are indoors should stay there but move to the central part of the building.
- Keep away from the stairs, which might collapse suddenly.
- People who are outside should be away from buildings and collapsing walls and away from electric cables.
- Anyone in a vehicle should park it, away from bridges and buildings.

After an Earthquake

- Check if you or anyone else is hurt. Use first-aid for cuts and bruises.
- Keep the streets clear for emergency services.

- Switch off all appliances like the refrigerator, Television or Radio
- Turn off the gas (LPG).
- Wear shoes to protect your feet from debris.
- A battery-operated radio will help you to get important messages.
- Be prepared for more shocks.

8.3.3 Fire Accident

A fire is defined as undesirable event which emits heat, smoke and or flame, which has the potential to cause damage either mechanical or manmade.

Some of the causes are:

1. Cooking equipment
2. Heating
3. Smoking in bedrooms
4. Candles
5. Curious Children
6. Faulty wiring
7. Flammable liquids
8. Ignorance, carelessness, faulty handling, indifference and recklessness of people

Effects of Fire Accidents

- Destroying houses, wildlife habitat and timber
- Polluting the air
- Permanently damages the human or animal's respiratory system and cause death

Precautions

- Keep all fires and heaters well guarded. Especially open fires.
- Keep open fires away from furniture's and curtains
- Do not smoke in the bedroom
- Never leave a pan unattended when deep frying because many fire starts in the kitchen
- If there are children around keep matches and lighters out of reach
- Fit approved smoke detectors and smoke alarm on each floor
- Plan an escape route
- If you suspect a gas leak, open the windows and turn off the supply

During

- React as soon as you hear the smoke alarm
- Safely exit through doors
- Protect yourself from smoke inhalation
- Stop, drop and roll if your clothes catch fire
- Call for help
- Use fire extinguishers to control the fire
- Don't stay and search for pets and belongings
- Never use an elevator to exit a building during the fire

After

- Cool off as soon as possible with water for first and second degree burns
- Don't break the blisters. Don't try to remove the adhere clothes from the burnt area
- Visit the nearby hospital

8.3.4 Clouds of Toxic Flames

During an Emergency

- Do not use the telephone, leave lines free for rescue services
- Listen to the messages given by radio and other media
- Carry out the instructions transmitted by radio or loudspeaker
- Close doors and windows
- Stop up air intakes
- Seal any cracks or gaps around windows and doors with adhesive tape
- Organize a reserve of water
- Turn off ventilators and air conditioners

After an Emergency

- Comply with the authorities' instructions and do not let go out until there is no longer any risk
- Carry out necessary decontamination

8.4 DISASTER NURSING

It is the adaptation of professional nursing knowledge, skills and attitude in recognising and meeting the nursing and medical needs of disaster victims.

8.4.1 Basic Principles in Planning for Disaster Nursing

N – Nursing plan should be integrated and coordinated

U – Update physical and psychological preparedness

R – Responsible for organising, teaching and supervision

S – Stimulate community participation

E – Exercise competence

8.4.2 START- Simple Triage Rabid treatment

- Those who are beyond help
- The injured who can be helped by
- The injured whose transport can be
- Those with injuries who ned helps less urgently

Priority	Colour of the tag	Condition
First (Immediate)	Red	Life threatened. have a high probability of survival
Second (Intermediate)	Yellow	Seriously injured Can delay treatment and transport for 2 hours
Third (waiting)	Green	Walking wounded Can delay transport 3 hours
Low priority	Black	Expectant, died victims, severely injured 100%

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8.5 PREPAREDNESS AT HOSPITAL LEVEL

Hospital preparedness is very important to reduce the impact of disaster to human health and to save human life and disability.

1. A defined mechanism to alert medical, nursing units and other staff to an external or internal disaster.
2. The disaster cupboard – every hospital should have arrangement for at least 50 victims at any time excluding routine emergency cases.
3. Policy for disaster management – there should be a policy for disaster management in every hospital.
   - ➢ Extra staff (medical and nursing) should be posted to emergency from other areas.
   - ➢ Extra trolley men should be posted at the gate to transfer the casualty to emergency.
   - ➢ Disaster cupboard should be kept open and needed equipment should be checked.
   - ➢ Information should be sent to all concerned authorities.
4. Disaster preparedness team members of the team should come from all ranks of the facilities personnel and the disaster preparedness programme must identify each possible disaster and explain how to recognize it, when if shall actually become a threat and who is to do what, where and how.
5. It is important that each hospital have a simple, organized well defined disaster plan.

Problems to be handled

Transportation of victims to hospital

- Provision of prompt medical care
- Advice on prevention of outbreak of epidemics.

Disaster committees

A hospital should have a disaster committee under the chairmanship of medical superintendent.

Control Centre / room

Every hospital should identify a room as control room during a disaster situation.

Activating the plan

On receipt of the information from an authentic source, the duty medical officer in accidental emergency would activate the plan.

Reception Centre

Every hospital should identify a place of reception centre for a disaster situation.

First aid and sorting

Every hospital should have a plan for first aid and sorting the causalities in disaster.

Additional bed space

In addition to bed strength, hospital should have identified extra space to accommodate the causalities.

Linen stories

Identified or marked a room for lines store for disaster situation.

Emergency Blood Bank

Efforts should be made for blood for all the available groups to be stacked.

Staff

Medical staff in addition to members to regulate clinical units the faculty members of para-medical

and pre-clinical would be asked to render help.

Nursing staff – a pool of nursing staff would be created by the nursing superintendent.

Information Service

Medical superintendent would be functioning as information Officer. All information to press and govt. must be issued by him only.

8.6 LEGAL IMPLICATION

Ethical and Legal Aspects of Disaster Response. Incorporation of ethical principles and legal standards into all phases of the disaster cycle is fundamental to effective and fair disaster response, but the complex information landscape makes meeting this goal challenging

8.6.1 Acts and Laws

The **Disaster Management Act,** 2005, was passed by the Rajya Sabha on 28 November, and by the Lok Sabha on 12 December 2005. It received the assent of The President of India on 9 January 2006. The Disaster Management Act, 2005 has 79 sections in set of 11 chapters. The Act extends to the whole of India. The Act provides for the effective management of disasters and for matters related with it.

The act provides formation of the following to combat disaster:

- National Disaster Management Authority
- State Disaster Management Authority
- District Disaster Management Authority

8.6.2 National Policy on Disaster Management (NPDM), 2009

Came into force October 22, 2009. The policy aims to have a safe and disaster resilient India. It provides for developing a proactive, holistic, multi-disaster facet and technology driven strategy through a culture of

- Preparedness
- Prevention
- Mitigation
- Response

CONCLUSION

Disaster is a serious disruption of the function of a community or a society involving widespread human, material and economical loss. There are various natural calamities like flood, earthquake, fire accident, cloud of toxic flames and Disaster Management can be defined as the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disasters. Disaster nursing is the professional knowledge, skill and attitude in meeting the nursing medical needs of disaster victims. Epidemiological surveillance comprised vaccination of disaster victim, nutrition supplies after disaster, provide basic sanitation and vector control. Rehabilitation measures included relief, reconstruction, readiness after the disaster devastation. Disaster management ensure disaster prevention, risk and vulnerability reduction, as a means of reducing the impact of disasters on society.

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GLOSSARY

Earthquake (நிலநடுக்கம்)	-	An earthquake is the result of the sudden break within the upper crest of the earth, which may also break the surface and lead to the vibration of the ground.
Disaster Nursing (பேரிடர் செவிலியம்)	-	It is the adaptation of professional nursing knowledge, skills and attitude in recognizing and meeting the nursing and medical needs of disaster victims.
Relief (நிவாரணம்)	-	It is the measure taken immediately after the calamity, lasting from the first 24 hours to about two to three months and catering to immediate shelter, food, water and medical assistance.
Reconstruction (மறுசீரமைப்பு)	-	It is a period of approximately two years, aimed at rebuilding the basic physical infrastructure and shelter to enable people to begin afresh.
Rehabilitation (மறுவாழ்வு)	-	It is the long-term inputs of reinstating lost livelihoods, introducing new economic opportunities and improving land and water management processes.
Readiness (தயார்நிலை)	-	It is a proactive measure to enhance preparedness in identified vulnerable regions by introducing mechanisms and methods of construction that mitigate impacts of future disasters.

A-Z

EVALUATION

ZNU7R

I Choose the correct answer

1. Which is the last phase of disaster management?
   a. Implementation b. Preparation
   c. Warning d. Impact Phase
2. Mention the condition of black tag in simple triage rapid management
   a. Life threatened b.seriously injured
   c. walking wounded d. Died Victims
3. When the disaster management act received the assent of president of India?
   a. 9th January 2006
   b. 9th February 2006
   c. 9th January 2005
   d. 22nd October 2009
4. When national policy on disaster management came in to force?
   a. 9th January 2006

b. 9th February 2006
c. 9th January 2005
d. 22nd October 2009

II. Write short answer for the following questions:

1. What is disaster?
2. What is natural disaster?
3. What is manmade disaster?
4. What are the phases of disaster management?
5. What is Flood?
6. Define Disaster management.
7. What is mean by earthquake?
8. What are all the management to be taken for fire accident?
9. What is expansion for START?
10. Mention phases of rehabilitation in disaster management.

III Write short notes for the following questions

1. Write the causes and the effects of fire accidents?
2. What are the measures to be followed during earthquake?
3. What are the measures to be followed during fire accident?
4. Explain about simple triage rapid management?
5. Write the basic principles in planning for disaster nursing.
6. Write the disaster preparedness at hospital level.

REFERENCES

1. Park J.E, 2005, "Preventive and social medicine" 18 edition Jabalpur, Bhanot publishers.
2. Alexander David 2002; Principles of emergency planning and management, Terra publishing.
3. Haddow, George et al; Introduction to emergency management, butterworth publications.

WEBLINKS

- https://en.wikibooks.org/
- https://en.wikipedia.org
- https://ndma.gov.in
- https://www.cambridge.org/

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Unit 9



ADMINISTRATION OF MEDICINE

LEARNING OBJECTIVES

At the end of this chapter, the students will be able to

- define the terminologies used in pharmacology
- gain basic knowledge regarding drugs, forms and prescription of medication
- understand the effects of drugs on body
- extrapolates the rights for administration of drugs
- identify the ethical and legal aspects involved in administration of medicines

D2SZW

திருக்குறள்:

உற்றவன் தீர்ப்பான் மருந்துழைச் செல்வானென்று
அப்பால் நாற்கூற்றே மருந்து.

விளக்கம்:

நோயுற்றவன், நோய் தீர்க்கும் மருத்துவன், மருந்து, மருந்தை அங்கிருந்து கொடுப்பவன் என்று மருத்துவ முறை நான்குவகைப் பாகுபாடு உடையது.

Explanation:

For patient, leech, and remedies, and him who waits by patient's side, The art of medicine must fourfold code of laws provide.

9.1 INTRODUCTION

Drug administration is the major responsibility of the nurses. To handle the drugs, nurses should have the basic knowledge of action, adverse effects, indication and contraindication of commonly used drugs and nursing responsibilities while administering the drug.

9.2 DEFINITIONS

Pharmacology is the study of the interaction of chemicals with living systems. The term pharmacology is obtained from the Greek word "pharmakon" which means as drug and "logos" means the study of science.

Drugs are chemicals that act on living systems at the chemical (molecular) level. The term drug is derived from the French word "drogue" which means "dry herb".

Medical pharmacology is the study of drugs used for the diagnosis, prevention, and treatment of disease.

Toxicology is the study of the untoward effects of chemical agents on living systems. It is usually considered an area of pharmacology.

9.3 SOURCES OF DRUGS

Drugs are obtained from various sources like plants, animals, microbial, mineral, synthetic and semi synthetic after repeated extraction and purification.

Plant Sources

Most of the drugs are obtained from the plant sources.

E.g. Morphine extracted from the plant OPIUM through the principle of ALKALOID.

Opium Alkaloid Extraction



Animal Sources

Animal Sources

Animal	Part	Drug	Use
Cow	Pancreas	Insulin	Antidiabetic hormaone
Fish	Sperms	Protamine sulphate	Antidote of heparin
Pig	Intestine	Heparin	Anticoagulants
Ox	Lungs	Heparin	Anticoagulants

Microbial Source: *Example:* **Penicillin**

Mineral Source: *Example:* **Aluminium Hydroxide**.

Synthetic Source: *Example:* **Analgesics**

Semi Synthetic Source: *Example:* **Atropine**

9.4 DRUG FORMS

We take medications to diagnose, treat, or prevent illness. They come in lots of different forms and we take them in many different ways. You may take a drug yourself, or a healthcare provider may give it to you.

Drugs can be dangerous, though, even when they're meant to improve our health. Taking them correctly and understanding the right way to administer them can reduce the risks. A dosage form of a drug is a product designed for administration to the body in the diagnosis or treatment of disease. The most important dosage forms of drug are as follows



SL. NO.	FORMS	DESCRIPTION
1	Tablet	Tablets coated with gelatin that gets dissolved in stomach
2	Capsule	Powder or gel form of drug encased in a hard or soft outer casing that gets dissolved in a stomach
3	Liniments	Mixture of drugs with oil, soap, water , alcohol that is applied on the skin
4	Ointment	Semisolid preparation of a drug in petrolium form
5	Paste	Semisolid form of a drug , thick and stiff than the ointment, that is applied to and observed by the skin
6	Patch(transdermal)	Drugs encased in a manufactured material that allows continuous drug absorption through the skin at a steady manner
7	Plaster	Solid preparation used as a counter irritant or as an adhesive externally
8	Suppository	A several drugs mixed in a firm base such as glycerinated gelatin and shaped for insertion into the body cavity.
9	Syrup	Drugs dissolved in a solution containing water and sugar
10	Lotion	Drugs in liquid suspension intended for external use

9.5 PRESCRIPTION OF MEDICATION

The prescription is a written order by a physician to the pharmacist to prepare, dispense specific medication for a specific patient. A specific pattern should be followed in writing prescriptions in order to safe guard the patient.

The following points should be remembered in writing a prescription.

1. The writing should be legible. The name of the drugs to be in capital letters
2. Indelible ink should be used for writing
3. Abbreviations should be avoided.
4. Generic names of the drug should be written below the brand names
5. In writing quantities, decimals should be avoided
6. Less than 1gm should be written as milligrams. Eg. 200mg and not 0.2g
7. Blank spaces should be avoided between direction and the signature of the doctor.

9.5.1 Parts of a Prescription

Date, address of the prescriber- preferably, the orders should be in the letter pad., name, age ,sex of the patient, IP or OP number, superscription(Rx) drug name and strength, directions to the patient and signature of the prescriber.

9.6 CLASSIFICATION OF DRUGS BASED ON THEIR ACTION

Sl. No	Classification	Action
1	Analgesics	Drugs used to relieve pain. E.g. diclofenac
2	Anaesthetics	Drugs which cause loss of sensation. E.g. Nitrous oxide
3	Antipyretics	Drugs which reduce fever. E.g. dolo
4	Antidotes	Substances used to counteract the effect of poison. E.g. charcoal
5	Antacids	Substances which counteracts acidity or neutralizes acid. E.g. gelucil
6	Antiemetics	Drugs that prevent or relieve nausea and vomiting. E.g. emeset
7	Anti coagulant	Drugs used to prevent or inhibit coagulation. E.g. heparin
8	Anti histamine	Drugs used to treat allergies. E.g. avil
9	Diuretics	Drugs which increases the secretion of urine. E.g. lasix
10	Emetics	Drugs which produce vomiting. E.g. apomorphine
11	Hypnotics	Drugs which induce sleep. E.g. diazepam

12	Expectorants	Drugs which increases the expulsion of the bronchial mucus secretion. E.g. mucinex
13	Sedatives	Drugs which exerts a smoothening or tranquilizing effect. They may be general or local. E.g. benzodiazepine
14	Narcotics	Drugs which produce sleep and relieve pain. E.g. morphine
15	Antibiotics	Drugs that have the ability to destroy the growth of microorganisms. E.g. penicilin
16	Vasodilators	Drugs which dilate the blood vessels. E.g. nitroglycerine
17	Vasoconstrictors	Drugs that cause constriction of blood vessels. E.g. amphetamines
18	Hypoglycemic	Drugs that lower the blood glucose level. E.g. insulin
19	Mydriatics	Drugs that dilate the pupils of the eyes. E.g. cyclogyl
20	Myotics	Drugs that contract the pupils of the eye. E.g. pilocarpine

9.7 ADVERSE DRUG EFFECTS

Side effects: They are the unwanted but often unavoidable consequences of administered drug. E.g., aspirin produces gastric ulcer.

Toxic effects: They are due to over dosage or prolonged use. e.g., paracetamol causes hepatotoxicity..

Teratogenicity: It refers to the capacity of a drug to cause foetal abnormalities when administered to a pregnant mother. E.g., Tetracycline

Idiosyncrasy: It is a genetically determined abnormal reaction to a drug in an unusual manner. E.g., barbiturates.

Drug dependence: Drugs capable of altering mood and feelings on repeated use of such drugs. E.g., morphine

Iatrogenic disease: This a physician induced or drug induced disease. E.g., peptic ulcer by salicylates.

Drug allergy: It is an immunologically mediated unpredictable reactions which are not related to the therapeutic effects.

Carcinogenicity and Mutagenicity: It is the capacity of a drug to cause cancer. e.g., anabolic steroids.

9.8 STORING OF MEDICINE AND SAFETY MEASURES

1. Most medications should be stored in a dry place away from heat and humidity.
2. If the medication needs to be protected from light, it should be stored in a container that keeps out light.
3. If the medication needs to be refrigerated, and you do not have a fridge available, use a cooler with an ice pack.
4. Keep track of the expiry dates of the medications by asking the pharmacy team to put this information on your medication vial.

5. Don't store multiple medications in the same vial, as this makes it hard to keep tracing of which medications are which, which doses have been taken, and what are the expiry dates.
6. Put all medicine up and away, out of children's reach and sight.
7. Close your medicine caps tightly after every use.
8. Choose child-resistant caps for medicine bottles. If pill boxes or non-child resistant caps are the only option, it's even more important to store these containers up high and out of sight when caring for kids.

9.9 ROUTES OF ADMINISTRATION

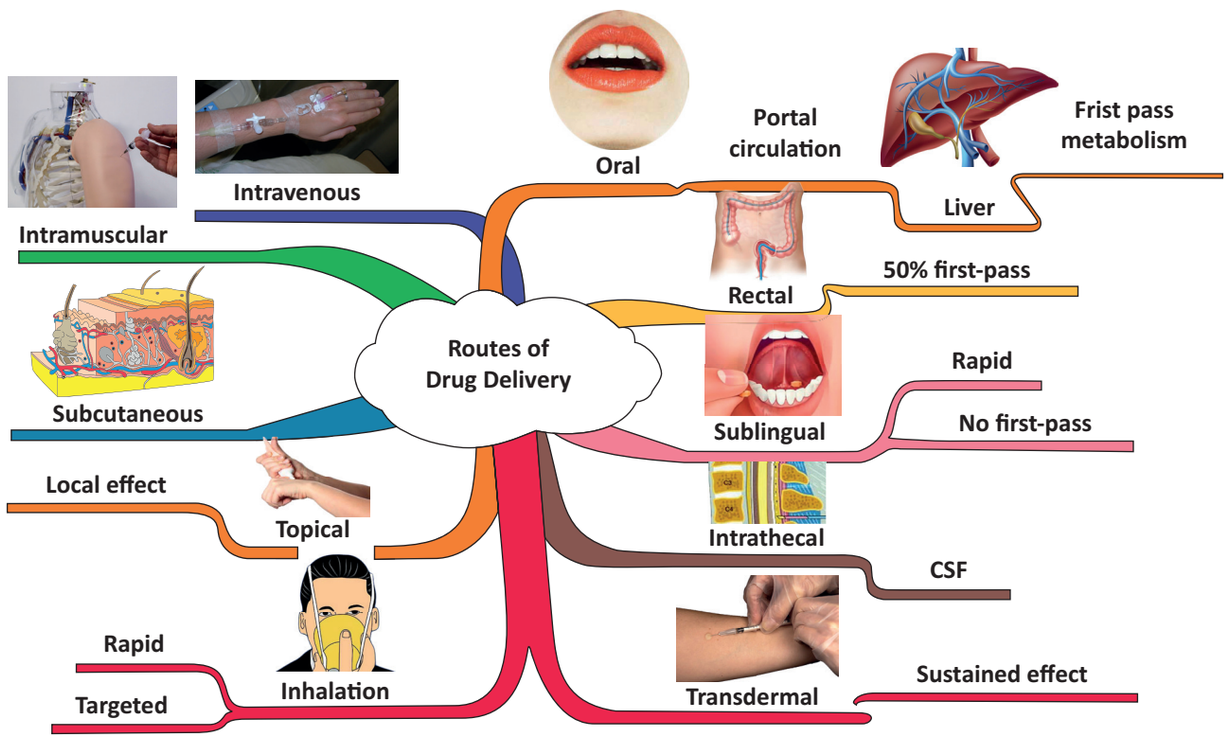
A route of administration is the path by which a drug, fluid, poison or other substance is brought into contact with the body. For instance, some drugs are destroyed by stomach acid if they are taken by mouth. So, they may have to be given by injection. The principle method of giving drugs is by mouth, and the doses which are not otherwise specified are assumed to be oral doses.

The route used to give a drug depends on three main factors:

- The part of the body being treated
- The way the drug works within the body
- The formula of the drug

Doctors, nurses, and other healthcare providers are trained, how to administer medication safely. Administration of medication requires thorough understanding of the drug including,

- how it moves through the body
- when it needs to be administered
- possible side effects and dangerous reactions
- proper storage, handling, and disposal



Sl. No.	Route	Explanation
1	Buccal	Held inside the cheek
2	Enteral	Delivered directly into the stomach or intestine
3	Inhalable	Breathed in through a tube or mask
4	Infused	Injected into a vein with an IV line and slowly dripped in over time
5	Intramuscular	Injected into muscle with a syringe
6	Intrathecal	Injected into your spine
7	Intravenous	Injected into a vein or into an IV line
8	Nasal	Given into the nose by spray or pump
9	Ophthalmic	Given into the eye by drops, gel, or ointment
10	Oral	Swallowed by mouth as a tablet, capsule, lozenge, or liquid
11	Otic	Given by drops into the ear
12	Rectal	Inserted into the rectum
13	Subcutaneous	Injected just under the skin
14	Sublingual	Held under the tongue
15	Topical	Applied to the skin
16	Transdermal	Given through a patch placed on the skin

9.10 RIGHTS OF DRUG ADMINISTRATION

It is the responsibility of the nurse to understand the basic concept of safe, therapeutic and rational use of drugs. Healthcare providers are trained in all of these issues. In fact, many healthcare providers keep in mind the "Eight rights" when they administer drugs. But the recent advancements says depending upon the institutional policies these may vary in number.

- ❖ Right drug
- ❖ Right patient
- ❖ Right route
- ❖ Right dose

- Right frequency/time
- Right response
- Right reason
- Right documentation



- Always check patient's identification tag
- Ask patient to state their name and birth date.
- Compare medication order to identification tag and patient's stated name and birth date.
- Verify patient's allergies with chart and with patient.
- Perform a triple check of the medication's label
  - When retrieving the medication.
  - When preparing the medication.
  - Before administering medication to patient.
- Always check the medication label with the physician's orders.
- Never administer medication prepared by another person
- Never administer medication that is not labeled
- Check label for medication concentration.
- Compare prepared dose with medication order.
- Triple all medication calculations.
- Check all medication calculations with another nurse.
- Verify that dosage is within appropriate dose range for patient and medication.
- Verify schedule of medication with order.
  - Date
  - Time
  - Specified period of time
- Check last dose of medication given to patient.
- Administer medication within 30 minutes of schedule.
- Verify medication route with medication order before administering.
- Medication may only be administered via route specified in order
- Inform patient of medication being administered.
- Inform patient of desired effects of medication.
- Inform patient of side effects of medication.
- Ask patient if they have any known allergies to medication
- The legally responsible party (patient, parent, family member, guardian, etc.) for patient's care has the right to refuse any medication.
- Inform responsible party of consequences of refusing medication.
- Verify that responsible party understands all of these consequences.
- Notify physician that ordered medication and document notification.
- Document refusal of medication and that responsible party understands consequences.

- Properly assess patient and tests to determine if medication is safe and appropriate.
- If deemed unsafe or inappropriate, notify ordering physician and document notification.
- Document that medication was not administered and the reason that dose was skipped.
- After medication has been administered
- Assess patient for any adverse side effects.
- Assess patient for effectiveness of medication.
- Compare patient's prior status with post medication status.
- Document patient's response to medication.
- Never document before administration of medicine.

Do's and Don'ts

- Do not give out dated or expired medication
- Do not give medication beyond stop date
- Do not administer medication that have changed colour or consistency
- Administer medication that are taken only from properly labeled or prescribed container

COMMON CONVERSION FACTORS	
1 ounce (oz)	30 millilitre (ml)
1 teaspoon (tsp)	5 millilitre (ml)
1 tablespoon (T or tbs)	15 millilitre (ml)
2 tablespoons (T or tbs)	1 Ounce
1 millilitre (ml)	15 drops (gtt)

COMMON ABBREVATION	
P.O.	*BY MOUTH; ORALLY*
P.R.	*RECTALLY*
P.R.N.	*AS NEEDED (FOR)*
P.V.	*VAGINALLY*
Q12; Q. 12 H.; Q12°	*EVERY 12 HOURS*
Q.D.	*EVERY DAY*
Q.H.S.	*EVERY DAY AT BEDTIME*
Q.I.D.	*4 TIMES A DAY*
RX	*PRESCRIPTION*
SL; S.L.	*SUBLINGUALLY; UNDER THE TONGUE*
T.I.D.	*3 TIMES A DAY*
BD	*2 TIMES A DAY*
OD	*ONCE A DAY*

9.11 DRUG LAWS

1. The pharmacy act 1948
2. Dangerous drug act 1930
3. Drug and cosmetic act 1940
4. Medicinal and toilet preparation act 1956
5. Poisons act 1919

CONCLUSION

Considering the needs of the nursing students, the subject matter is prescribed very briefly to understand the essence of pharmacology and know their responsibilities while practicing as a nurse at all settings. Drugs may be prescribed to promote healing, cure disease control or slow progression of disease, prevent disease, decrease risk of complications, increase comfort level, reduce excessive activity in the body. Therefore it's the duty of the nurses to flourish with adequate knowledge, skill and attitude among the health care professionals to make our profession in flying colours.

A-Z GLOSSARY

Pharmacology (மருந்தியல்)	-	The branch of medicine concerned with the uses, effects, and modes of action of drugs.
Principle (கொள்கை)	-	A fundamental truth that serves as the foundation for a system of belief or behaviour or for a chain of reasoning.
Contraindication (தேவைப்படாதவர்கள்)	-	A particular technique or drug should not be used in that case
Opioids (அபின்)	-	A compound resembling opium in addictive properties or physiological effects.
Toxicology (நச்சியல்)	-	The branch of science concerned with the nature, effects, and detection of poisons.
Sources (ஆதாரங்கள்)	-	A place, person, or thing from which something originates or can be obtained.
Antihistamines (ஒவ்வாமை முறி)	-	A drug or other compound that inhibits the physiological effects of histamine, used especially in the treatment of allergies.
Antipsychotic (மனநோய் எதிர்ப்பு)	-	A drug used to treat psychotic disorders.
Analgesics (வலி நிவாரணி)	-	Painkilling drug, pain reliever, palliative.
Pharmacopoeia (மருந்தின் குணங்கள்)	-	An official publication containing a list of medicinal drugs with their effects and directions for their use. A stock of medicinal drugs.

EVALUATION

I. Choose the correct answer:

1. The study of dose, distribution, metabolism and excretion of drugs in the body is known as
   a. Dose effective body
   b. Pharmacodynamics
   c. Pharmacotherapy
   d. Pharmacokinetics
2. Morphine is extracted from the plant opium through the principle of
   a. alkaloid b. alkaline
   c. crystalloid d. acidic
3. The pharmacy act was formulated in the year
   a. 1943 c. 1945
   b. 1948 d. 1949
4. A type of iatrogenic disease
   a. peptic ulcer c. cancer
   b. heart attack d. head ache
5. T.I.D stands for
   a. 2 times a day c. 3 times a day
   b. one time a day d. all the above
6. Analgesics are used to
   a. relieve pain c. relieve tension
   b. both a & b d. none of the above
7. The following is the drug prepared from animals except
   a. Tab. Para c. Tab. Taxim
   b. Inj. Insulin d. all the above
8. To administer a drug 4 time a day, the abbreviation to be used
   a. Q.I.D c. OD
   b. TDS d. BD
9. One pint is equal to
   a. 350 ml c. 500ml
   b. 510ml d. 450ml
10. The abbreviation PO stands for
    a. by rectal c. by vaginal
    b. by intrathecal d. none of the above
11. Semisolid preparation of a drug in petroleum form is called as _____
    a. Ointment b. Liniments
    c. Tablet d. Capsule
12. What is mydriatrics?
    a. Drug that dilate the pupil of the eyes
    b. Drugs that contract the pupil of the eyes
    c. Drugs the dilate the blood vessels
    d. Drugs there contract the blood vessels
13. Give an example for antibiotics:
    a. Diclofenoc b. Avil
    c. Lasix d. Penicillin
14. 1 teaspoon = _____ ml
    a. 5 ml b. 10 ml
    c. 15 ml d. 20 ml
15. Match the following

1. The pharmacy act	a. 1919
2. Dangerous drug act	b. 1940
3. Drug and cosmetic act	c. 1930
4. Poisons act	d. 1948

II. Write brief answer for the following questions

1. What is meant by medicinal Pharmacology?
2. What is meant by Toxicology?
3. Define Prescription

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4. What is meant by antibiotics, Give an example.
5. Write the parts of a prescription?
6. Write the eight rights of drug administration.
7. What is meant by toxic effect?
8. Write about suppository?

III. Write short answer for the following questions

1. Write about the sources of Drugs.
2. Explain the effects or drug on body
3. What are the points should remember while writing a prescription?
4. Write the action for the following.
   a. Antidotes b. Diuretics
   c. Expectorants d. Sedatives
   e. Myotics
5. List down the routes of administration of drugs.

IV. Answer the following questions in detail:

1. Classification of drugs.
2. Explain the routes of administration of drugs.
3. Describe the rights of administration of drugs.

REFERENCES

1. ADR Drug Today Elfin Drugs Pvt Ltd 1st.
2. Dewit Susan, C. Fundamental Concepts & Skills For Nursing Elsevier 3rd.
3. PadmajaUdaykumar, (2008). Pharmacology for Nurses. (2nded.) Newdelhi: CBS Publishers & Distributors Pvt. Ltd.4.
4. Potter P A, et al., (2013). Potter & Perry's Fundamentals of Nursing (1st ed.) Newdelhi: Elsevier Publication.
5. Shanbhag, T.V., et al., (2011). Pharmacology for Nurses. Newdelhi: Elsevier.
6. Shiram Bhat M.(2008)., Concise Text Book of Pharmacology for Nurses. (2nd ed) Bangalore EMMESS Medical Publishers.

WEBLINKS

- http://www.interesjournals.org/ER
- http://www.study.com/
- http://www.jmcinc.net
- http://www.slideshare.net
- www.pdr.net

Unit 10



COMMUNICATION SKILLS



LEARNING OBJECTIVES

At the end of this chapter, the students will be able to

- define Communication
- process of Communication
- why Communication is important in nursing?
- types of Communication
- list out the Barriers of Communication
- Tips for effective communication

W3RHS

திருக்குறள்:

சொல்லுக சொல்லைப் பிறிதோர்சொல் அச்சொல்லை
வெல்லுஞ்சொல் இன்மை அறிந்து.

விளக்கம்:

வேறோரு சொல் அந்தச் சொல்லை வெல்லும் சொல்லாக இல்லாதிருந்தால் அறிந்த பிறகே சொல்லக்கருதியதைச் சொல்லவேண்டும்.

Explanation:

"The words used should be carefully selected so that no other words can effectively replace them." Which means, there should not be any ambiguity in the words used.

10.1 INTRODUCTION

Communication is the exchange of information, thoughts and emotions among people using speech or other means. Therapeutic practice involves the oral communication of public health officials and nurses on the one hand and the patient or his relatives on the other. It is a two way process.

Communication is a vital element in Nursing in all areas of activity and in all its interventions such as prevention, treatment, therapy, rehabilitation, education and health promotion.

10.2 DEFINITION

Communication can be defined as a transaction and message creation. The entire process occurs in a context consisting of physical space, cultural and social values and psychological conditions

A process by which information is exchanged between individuals through a common system of symbols, signs, or behaviour also exchange of information

Communication is a skill that you can learn. It's like riding a bicycle or typing. It you're willing to work at it, you can rapidly improve the quality of every part of your life.

- Brian Tracy

Communication is the art of being understood.

- Peter Ustinov

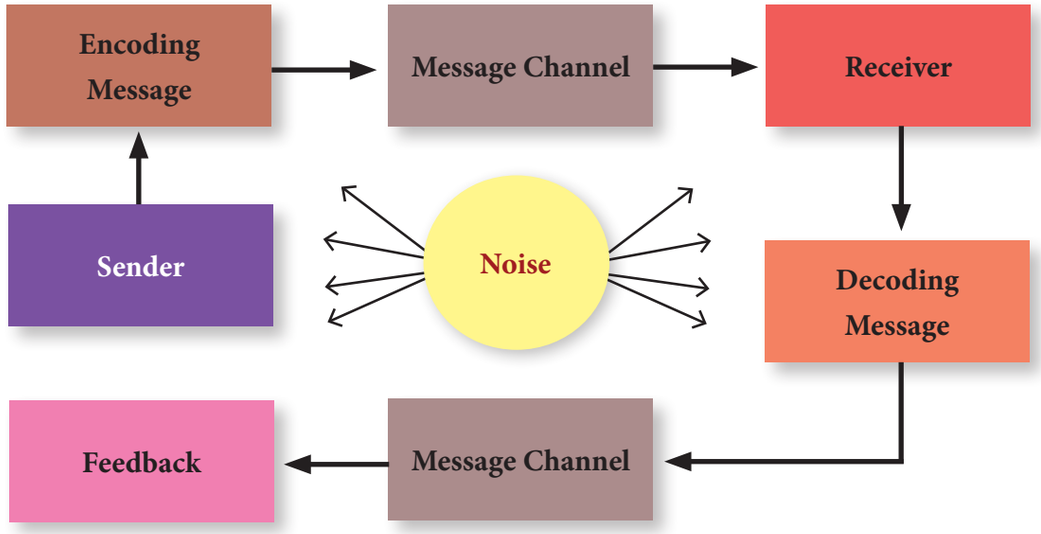
10.3 COMMUNICATION PROCESS

Communication is a process of exchanging information, ideas, thoughts, and emotions through speech, signals, writing, and behaviour.

Model of the communication process:

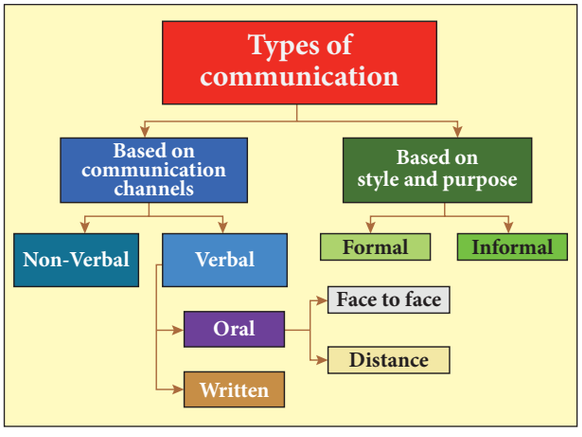
1. A sender encodes information
2. The sender selects a channel of communication by which to send the message
3. The receiver receives the message
4. The receiver decodes the message
5. The receiver may provide feedback to the sender

THE COMMUNICATION PROCESS



10.4 TYPES OF COMMUNICATION

People communicate with each other in a number of ways that depend upon the message and its context in which it is being sent. Choice of communication channel and your style of communicating also effects communication. So, there are variety of types of communication.



10.4.1 Verbal Communication

Communication is done by word of mouth and a piece of writing. Usually people bring their own attitude, perception, emotions and thoughts about the topic and hence creates barrier in delivering the right meaning.

Verbal Communication is further divided into

1. **Oral Communication**
2. **Written Communication**

1. Oral Communication

In oral communication, colloquial words are used. It includes face-to-face conversations, speech, telephonic conversation, video, radio, television, voice over internet. In oral communication, communication is influenced by pitch, volume, speed and clarity of speaking.

Oral Communication



Advantages of Oral communication

It brings quick feedback. In a face-to-face conversation, by reading facial expression and body language one can know it is understand.

Disadvantage of oral communication

In face-to-face communication, user is unable to deeply think about the message delivered.

2. Written Communication

In written communication, written signs or symbols are used to communicate. A written message may be printed or hand written. In written communication message can be transmitted via email, letter, report, memo etc.

Written Communication



Advantages of written communication
Messages can be edited and revised many times before it is actually sent. A written message enables receiver to fully understand it and send appropriate feedback.

Disadvantages of written communication
Unlike oral communication, written communication doesn't bring instant feedback.

10.4.2 Non-Verbal Communication

Non-verbal communication is the sending or receiving of wordless messages. We can say that communication other than oral and written, such as appearance of the speaker, clothing, hairstyle, use of cosmetics Surrounding: gestures, body language, posture, tone of voice or facial expressions, is called nonverbal communication. Non-verbal communication is all about the body language of the speaker.



10.5 BARRIERS OF COMMUNICATION

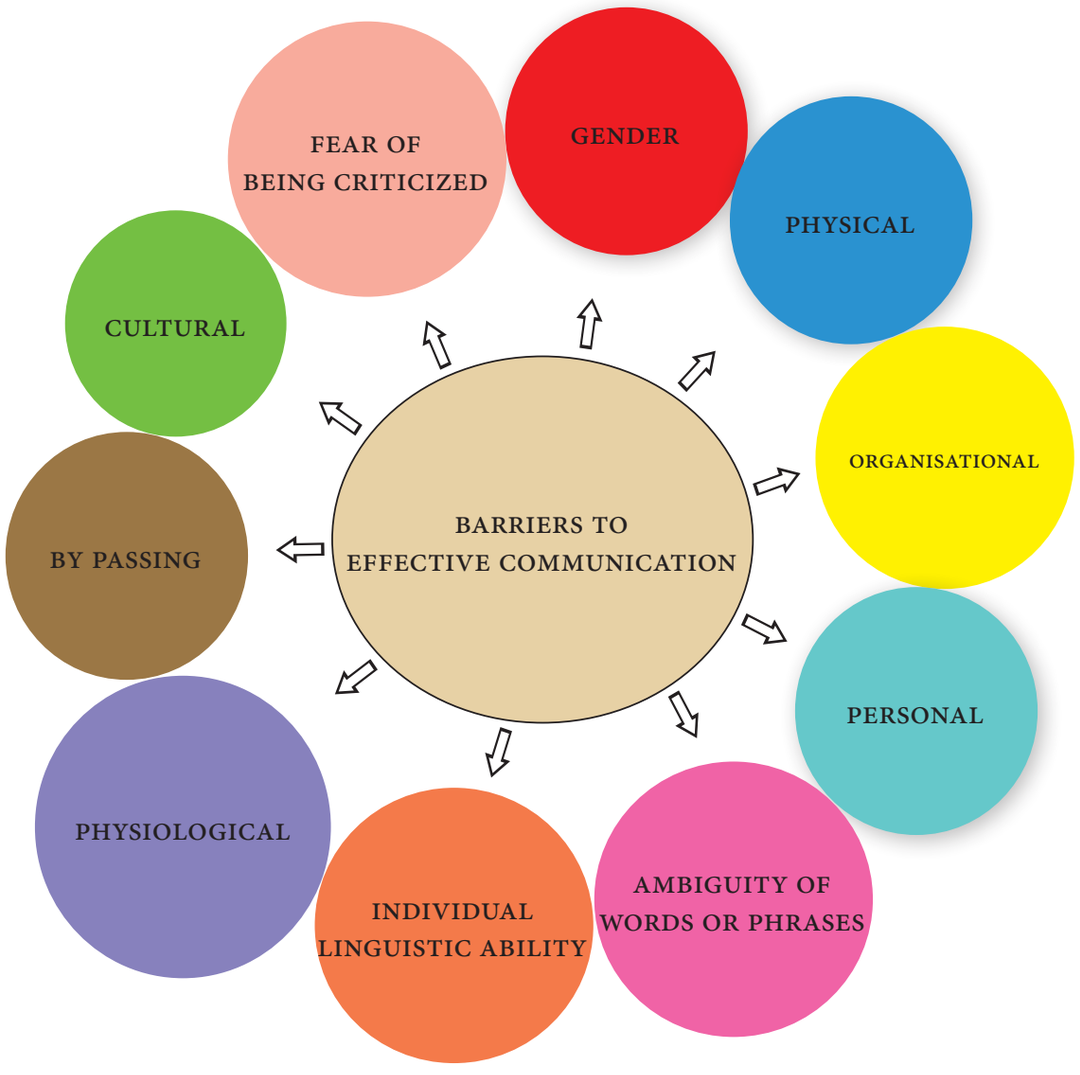
Barriers to effective communication can retard or distort the message or intention of the message being conveyed. This may result in failure of the communication process or cause an effect that is undesirable.



Types of Barriers

- **Physical Barriers:** Physical Barriers are often due to the nature of the environment like noise, invisibility, etc.
- **Organisational Barriers:** It refers to the problem with the structures or systems in the place in an organization. E.g., a lack of supervision or training or policy.
- **Personal Barriers:** It is due to psychological problems of individuals. E.g., lack of motivation or dissatisfaction in work.
- **Ambiguity of words/Phrases:** Words sounding the same but having different meaning can convey a different meaning altogether. Hence the communicator must ensure that the receiver receives the same meaning.
- **Individual linguistic ability:** The use of jargon, difficult or inappropriate words in communication can prevent the recipients from understanding the message.
- **Physiological Barriers:** These may result from individual's personal discomfort, caused by ill health, poor eyesight or hearing difficulties.

- **Bypassing:** This happens when the communicators (sender and the receiver) do not attach the same symbolic meanings to their words.
- **Cultural Barriers:** Strong beliefs, customs, attitudes, religious, sentiments, illiteracy may influence communication.
- **Fear of being criticized:** This is a major factor that prevents good communication.
- **Gender Barriers:** Most communicators show a difference in thought, often have a set of agenda. This is noticeable among the different genders.



10.6 SKILLS OF EFFECTIVE COMMUNICATION

- Express your feelings
- Present yourself well
- Give and receive compliments
- Learn to say "no" when it's necessary
- To solve problems effectively
- Effective communication is a key to getting along with others.

10.7 SOME TIPS FOR EFFECTIVE COMMUNICATION



1. Learn to express yourself

Help others to get to know you better, so they will know what to expect from you. They will also help you to get knowledge because they will give information about themselves.

2. Learn good listening skills

Careful listening avoids misunderstanding. Give your undivided attention to the patient/speaker. If you need more information ask questions. Be informative by trying to say something positive even if you don't like it.

3. Learn to be assertive

Express what you have to say with frankness without being aggressive. To be assertive means not to say 'Yes' when you want to say 'No'.

10.8 WHY COMMUNICATION IS IMPORTANT IN NURSING

Communication in nursing is essential in patient safety, health and well-being, because nurses are at the centre of patient care, it is their responsibility to facilitate dialog. As nurses assume more complex roles and care for all age group and different culture people, they will need to strengthen their communication skills.

1. Helps to understand and to exchange ideas to the patient, relatives, doctors and other health care team members.
2. Generate trust between nurse and patients.
3. Reduces the interpersonal tensions and improves interpersonal relationship.
4. Helps to modify the nurses behaviour
5. Helps to influence others behaviour
6. Prevent disorder in the ward
7. Provides effective leadership

CONCLUSION

Communication is a powerful therapeutic tool and an essential nursing skill that influences others and achieves positive health outcomes. Communication is an exchange of a facts, ideas, views, opinions, emotions, informations etc. The basic elements of communication are the referent the sender,the message, the channels, the receiver, the feedback and the environment Nurses use interpersonal, intrapersonal, public and mass interaction to achieve positive change and health goals.

Effective communication helps us to anticipate problems, decisions, co-ordinate workflow, develop relationship and promote services. Barriers of communication may result in failure of the communication process or cause an effect that is undesirable. Communication refers to verbal and non verbal behaviour within a social context. It includes all symbols and clues to give and receive meaning.

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GLOSSARY

Communication (தகவல் தொடர்பு)	-	It means of sending or receiving information.
Verbal Communication (வாய்மொழி தகவல் தொடர்பு)	-	Relating to (or) in the form of words.
Non-Verbal Communication (சொற்களற்ற சைகை வழி தகவல் தொடர்பு)	-	Communication in a form other than written or spoken words, such as gestures, facial expressions or body language.
Intra personal (தனிப்பட்ட)	-	A communicators internal use of language or thought.
Barriers (தடைகள்)	-	A fence or other obstacle that prevents movement or acess.
Empathy Skills (பரிபூரண திறமைகள்)	-	It is understanding someones thoughts and emotions.
Body Language (உடல்மொழி தகவல் தொடர்பு)	-	The conscious and unconscious movements and postures by which attitudes and feelings are communicated.
Completeness (முழுமையான)	-	The state or condition of having all necessary or appropriate parts.
Conciseness (உணர்வு)	-	Effective words is concise, with no unnecessary words while communicating.

EVALUATION

ARY74

I. Choose the correct answer:

1. Communication is the art of being understood, said by _____
   a. Rollo May b. Brian Tracy
   c. Peter Ustinov d. Comdae
2. In _____ communication user is unable to deeply think about the message delivered.
   a. Memo b. Oral
   c. Email d. Report
3. _____ Communication doesn't bring instant feed back
   a. Email b. Conversation
   c. Report d. Letter
4. Major factor that prevents good communication is _____
   a. Fear of being criticized
   b. Individual
   c. Lack of supervision
   d. Lack of education

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5. _____ happens when the sender and the receiver do not use the same symbols
   a. Bypassing
   b. Fear of being criticized
   c. Personal discomfort
   d. Dissatisfaction of work

II. Write short answer for the following questions:

1. Define Communication.
2. Explain the communication process in diagram.
3. What are the advantages and disadvantages of oral communication
4. What are the simple tips for effective communication?
5. What is meant by communication barrier?

III. Write short notes for the following questions:

1. What are the importance of communication in nursing?
2. What are the types of communication?
3. Write about the guidelines for effective communication.

IV. Answer the following questions in detail:

1. What is communication barrier? Write in detail about the types of communication barrier.

REFERENCES

1. Handerson Virgiia & Gladys., Principles and practise of nursing, 6th edition, Macmillian publications, New York, 1978.
2. Park J.E & park, Text Book of preventive and social medicine, Jabalpur, BB publishers, 1989.
3. Potter & Perry's Fundamendals of Nursing – South Asian editions.

WEBLINKS

- https://open.lib.umn.edu/organizationalbehavior/chapter/8-4-different-types-of-communication-and-channels/
- https://www.habitsforwellbeing.com/9-effective-communication-skills/
- https://www.google.com/search?ei=z53BW6_CH4a9QOtmbmoBA&q=barriers+of++communication&oq=barriers+of++communication

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Unit 11



GUIDANCE AND COUNSELLING

LEARNING OBJECTIVES

At the end of this chapter, the students will be able to

- define guidance.
- explain the purpose of guidance.
- explain types of guidance.
- describe the importance of guidance in schools.
- enlist the functions of guidance.
- list the roles of the advisor in guidance.
- define counselling.
- enumerate the objectives of counselling.
- explain the scope for counselling.
- discuss the various types of counselling.
- explain the steps in the counselling process.
- enlist the attributes of a counselor.

ZHJD9

திருக்குறள்:

அகன்அமர்ந்து ஈதலின் நன்றே முகனமர்ந்து
இன்சொலன் ஆகப் பெறின்.

விளக்கம்:

முகம் மலர்ந்து இன்சொல் உடையவனாக இருக்கப்பெற்றால், மனம் மகிழ்ந்து பொருள் கொடுக்கும் ஈகையைவிட நல்லதாகும்

EXPLANATION:

Sweet speech, with a cheerful countenance is better than a gift made with a joyous mind.

INTRODUCTION

In today's fast moving world, each and everyone needs help. From a small child to the elderly, the need for help is inevitable in every phase of life. For example, when children finish their schooling, they need help in choosing what course they have to study, after which they need help in choosing their career pathway, adults need help in choosing a good job, a suitable life partner, then in reaching the children, getting them a suitable life partner, then managing the difficulties of life and it goes on till the end of life. Every human being needs help from each other to go on in life as we are a social being.

11.1 GUIDANCE

Guidance means to "direct", "to point out", and "to show the path".



Guidance is providing some help or assistance to an individual by another expert individual.

Define Guidance

"Guidance is the assistance provided to individuals to be able to choose, prepare and assume a position and making progress in his/her chosen position" (Frank Parson, 1951).

Purpose of Guidance

- To bring confidence in selecting appropriate course of action for adjustment in various walks of life.
- Helping in a balanced development.
- To help to determine the courses most appropriate to their needs and abilities.
- To plan the future in the individual's line of interest, abilities and social needs.

11.1.1 Types of Guidance

1. Personal

- ❖ It is needed to develop all personal and social qualities that would enable the individuals in solving personal problems and seeking better adjustments.
- ❖ It is meant for deciding what habits, attitudes and values we should develop.
- ❖ It is concerned with the total person.
- ❖ This guidance points out the strengths and weaknesses of every individual or child.

2. Vocational

- ❖ Relating to choosing and adjusting in an occupation or employment.
- ❖ Process of assisting the individual to choose an occupation, prepare for it, enter it and progress on it.

3. Educational

- ❖ Is a process of assisting the individual student to reach optimum educational development. It is a sort of guidance that is only rendered to the student community of any age.
- ❖ Helps the students to make right choices, as well as make adjustments in relation to schools, curriculum, courses and school life which contributes to the all-round development.

11.1.2 Purposes of Guidance Service in Schools

- Helps to make a satisfactory transition from home to the school.
- In diagnosing the difficulties in the learning of basic skills.
- To help in avoiding potential dropouts in schools.
- To help in understanding the purpose and meaning of life.
- To plan for further education.

11.1.3 Enlist the Functions of Guidance

- Encouraging and supporting
- Informing
- Advising
- Assessing
- Liaising and representing
- Monitoring and coaching
- Providing feedback
- Counselling

11.1.4 Roles of the Advisor in Guidance



"You just have to have the guidance to lead you in the direction until you can do it yourself."

- Tina Yothers

11.2 COUNSELLING





Define Counselling

Counselling is a personal and dynamic relationship between two individuals-an older, more experienced and wiser (counselor) and a younger, less wise (counselee). The latter has a problem for which he seeks the help of the former. They two work together so that the problem may be more clearly defined and the counselee may be helped to a self-determined solution. (Wren)

11.2.1 Objectives of Counselling

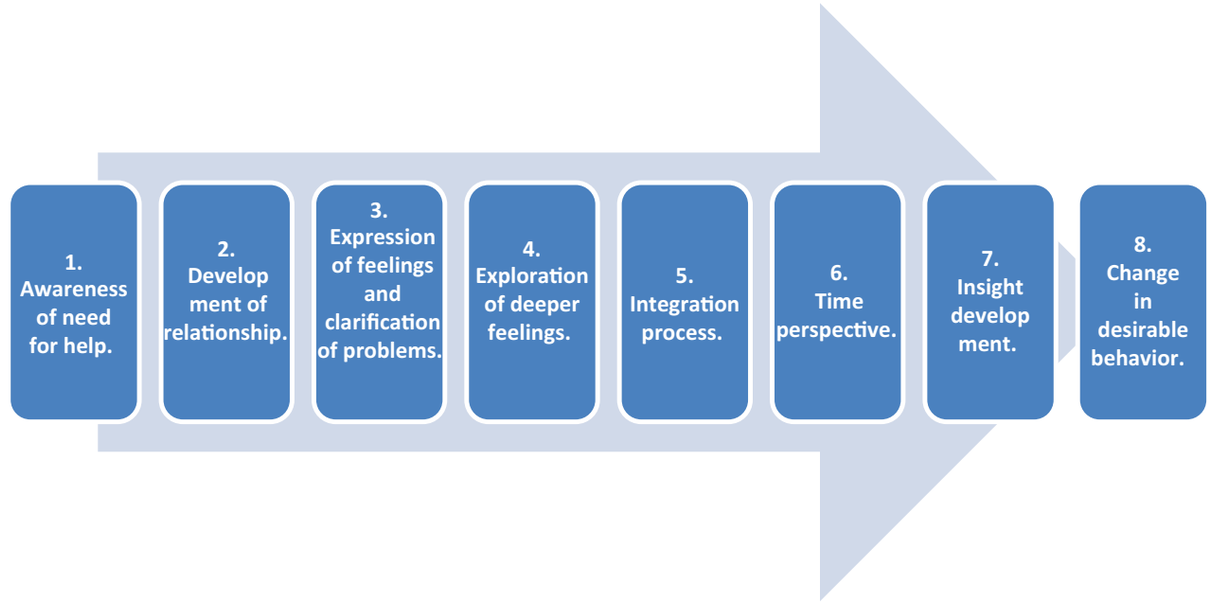
1. Achievement of positive mental health.
2. Resolutions of problems.
3. Improving personal effectiveness.
4. Maximizing change of behavior.
5. Decision making as a goal of nursing.
6. Modification of behavior as a goal.

11.2.2 Types of Counselling

Counselling has a lot of scope in this complex world. The scope covers the various services: (Technical and Vocational Training Corporation, 2016.)

S.No.	Services	Explanation
1.	Religious counselling	• It is done through religious activities such as retreats, lectures, or religious book studies.
2.	Preventive counselling	• It is used to prevent occurrence of social, psychological, and health problems through awareness program.
3.	Educational counselling	• It is done for assisting students in studies and development of their talents and capabilities.
4.	Vocational and educational counselling	• Educating students about the various types of vocation and university education, types of jobs, and conditions of employment.
5.	Social and ethical counselling	• Is helpful in identifying suitable environment for students to acquire skills and expertise to interact with others in accordance with the institution and spiritual or ethical values.
6.	Student counselling	• It is one for helping students with personal and behavioral problems, and it also includes employment and career counselling.

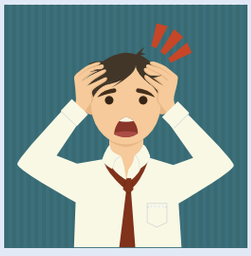
11.2.3 Explain the steps in the Counselling Process



11.2.4 Enlist the attributes of a Counselor

1. Empathy
2. Understanding
3. Respect
4. Positive acceptance
5. Commitment to values
6. Personal skills
7. Personal knowledge
8. Personal development

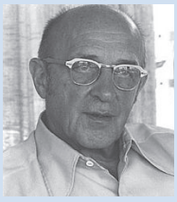
11.2.5 Needs of Counselling

S.No.	Issues	Explanation	Characters.
1.	**Child abuse/harassment** 	Child abuse is when a parent or caregiver, whether through action or failing to act, causes injury, death, emotional harm or risk of serious harm to a child.	Forms of child maltreatment, including neglect, physical abuse, sexual abuse, exploitation and emotional abuse.
2.	**Truancy** 	Truancy means running away from home, school or hostel.	Unhealthy friendship or relationships.
3.	**Anger management** 	Anger or wrath is an intense negative emotion. Emotions have to be controlled and energies directed towards positive ways.	Anger towards family, friends and relatives.
4.	**Stress management** 	Stress is your body's way of responding to any kind of demand or threat.	Examination fear, inability to get admission in desired colleges, job stress, peer pressure, extreme anxiety, leading to suicide, hurting others, and psychiatric illnesses.

S.No.	Issues	Explanation	Characters.
5	**Memory and concentration** 	Problems in academic due to lack of memory and concentration.	Watching TV, playing computer games, and unhealthy friendship.
6.	**Depression and self-harm** 	Adolescent find it difficult to balance between independence and dependence, which can lead to depression.	Depression, suicide, physical and sexual abuse, drug abuse, alcoholism, loss of family members, single parent, poor parent child relationships.
7.	**Love affairs** 	Attraction towards opposite sex that is a natural phenomenon.	Lack of interest in studies, bunking classes, running away from home or hostel, and chances of getting infected by sexually transmitted diseases.
8.	**Substance abuse** 	Substance abuse, also known as drug abuse, is a patterned use of a drug in which the user consumes the substance in amounts or with methods which are harmful to themselves or others, and is a form of substance related disorder.	Habit formation, failure in examinations, accidents, violence, and unplanned unsafe sex.
9	**Gambling** 	Gambling is the betting of money or something of value on an event with an uncertain outcome with the primary intent of winning money or material goods.	Loneliness, stress, depression and other problems,

S.No.	Issues	Explanation	Characters.
10	**Domestic violence** 	Domestic violence is one person against another in a domestic setting such as a home.	Family problems and behaviors problems among children.

Carl Rogers, (1902 – 1987), an American psychologist, emphasized on the person-to-person relationship between the therapist and the client.



CONCLUSION

Guidance is a psychological field that deals with assisting clients in their need to choose the right course of action, while Counselling is a psychological field that deals with research and applied work to provide training and supervision. While both are being used inorganizations and by individuals, Counselling has a broader reach, while guidance is usually being used in schools to guide students towards proper actions. Counselling encompasses several other fields of psychology, while guidance tends to be more specific.

GLOSSARY

Retreats (*புத்துணர்சி முகாம்*)	-	Time spend away from one's normal life for the purpose of reconnecting usually in prayer with God.
Professional (*தொழிலர் தொகுதி மனப்பான்மை*)	-	Exhibiting a courteous, conscientious, and generally businesslike manner in the workplace.
Perspective (*தோற்றம்*)	-	The capacity to view things in their true relations or relative importance.
Introverted (*உள் தோற்றம்*)	-	Possessing a reserved or shy nature.
Extroverted (*வெளித் தோற்றம்*)	-	possessing or arising from an outgoing and social nature.face.
Socio-psychological (*சமூக மனநிலை*)	-	Relating to, or involving a combination of social and psychological factors.

Confidential (நம்பிக்கைக்குரிய)	-	Secret or private.
Ethical (ஒழுங்குநெறி)	-	Involving or expressing moral approval or disapproval.
Depression (மனச்சோர்வு)	-	A state of feeling sad.
Insight (உள்ளுணர்வு)	-	The power or act of seeing into a situation.
Concreting (திட நிலை)	-	Naming a real thing or class of things.
Attributes (பண்பு)	-	A quality, character, or characteristic ascribed to someone or something
Bunking (விடுபடுதல்)	-	A hurried departure or escape from class.
Habit formation (பழக்க நிலை)	-	The process by which new behaviors become automatic.

EVALUATION

FBKPR

I. Choose the correct answer:

1. The word guidance means:
   a. To talk to. b. To direct.
   c. To observe. d. To listen.
2. Guidance is a process of helping young people to:
   a. Learn to complete their studies.
   b. Communicate well with others.
   c. To adjust to self, to others and to circumstances.
   d. To walk away from situation.
3. The purpose of guidance is to:
   a. Helping in a balanced development.
   b. Talk to others.
   c. Help to communicate to friends.
   d. Separate from group.
4. Taanika, a 22 yr old girl, has completed her Engineering studies and has got 3 good jobs in reputed companies which are equally good. Which guidance should be taken
   a. Personal. b. Vocational.
   c. Educational. d. None of the above.
5. Counselling for helping students with personal and behavioral problems, and it also includes employment and career counselling. Which scope of counselling is it classified under?
   a. Preventive counselling.
   b. Student counselling.
   c. Religious counselling.
   d. Genetic counselling.
6. What is the first step in counselling process?
   a. Development of relationship
   b. Insight development
   c. Integration process
   d Awareness of need for help
7. Change in desirable behaviour is the 8th

step in counselling process?

a. 1st September b. 4th September

c. 6th September d. 8th September

8. Who emphasized the person to person relationship between the therapist and the client?

a. Carl Rogers b. Siddiqui

c. Rollo May d. Brian Tracy

II. Write short answer for the following questions:

1. Define – Guidance.
2. Write the purposes of guidance.
3. Define – Counselling.
4. List down the characteristics of counsellor.
5. Write about the scope of guidance services in schools.

III. Write short notes for the following questions:

1. Write about the types of guidance.
2. What are the types of counselling?
3. Explain the steps in counselling process.
4. What are the functions of guidance?
5. What are the objectives of counselling?.

IV. Answer the following questions in detail:

1. Write an essay about the needs for counselling..

REFERENCES

1. Siddiqui, M. H. (2013) Guidance and counselling. New Delhi: APH Publishing Corporation.
2. Sharma, S. K., & Sharma, R., (2012) Communication and educational technology in nursing. New Delhi: Elsevier Health Sciences.
3. Gordon, V. N., Habley, W. R. & Grites, T. J. (Eds) (2008) Academic Advising: A comprehensive hand book: (2nd edition). Jossey-Bass.

WEBLINKS

- American Counselling Association. (2016). Consensus definition of counselling. Retrieved from http://www.counselling.org/knowledge-cemtre/20-20-a-vision-for-the-future-of-counselling/consensus-definiton-of-counselling.
- British Association for Counselling and Psychotherapy. (2013). Definition of counselling and psychotherapy. Retrieved from www.bacp.co.uk.
- The Free Dictionary. (2016a) Guidance. Retrieved from www.thefreedictionary.com/guidance.
- The Free Dictionary. (2016b) Crisis. Retrieved from www.thefreedictionary.com/crises.
- www.unesdoc.unesco.org/images/0012/001257/125740e.pdf.

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NURSING MODEL QUESTION PAPER

Choose the Correct Answer

15 × 1 = 15

1. Mention the example for monosaccharide.
   A. Glucose B. Lactose
   C. Glycogen D. Sucrose

2. What is meant be xeropthalmia?
   A. Dry scaly skin
   B. Dry eye
   C. Softening of cornmea
   D. Inability to see in dim light

3. Identify the symptom of cholera.
   A. Swollen lymph nodes
   B. High blood pressure
   C. Rice water stool
   D. Rapid weight loss

4. For which disease 'DOTs' treatment is recommended?
   A. Tuberculosis B. CopD
   C. Myocardial Infarction D. Aids

5. The following conditions are the complications of acute myocardial infarction, except one
   A. Pulmonary embolism
   B. Heart Failure
   C. Angina pectoris
   D. Myxedea coma

6. What is the other name for silicosis?
   A. Potter's rot B. Bitots spot
   C. Scurry D. Pellagra

7. First fetal movement felt by the mother at _____ weeks.
   A. 3rd weeks B. 6 weeks
   C. 17 – 20 weeks D. 32 weeks

8. How many lobes are present in the maternal surface of the placenta?.
   A. 15 - 20 lobes B. 10 – 15 lobes
   C. 20 – 25 lobes D. 5 – 10 lobes

9. What is the maximum apgar score?.
   A. 8 B. 15
   C. 11 D. 10

10. Reduced number of melqnocytes causes ____
    A. Hypo pigmented spots
    B. Hyper pigmented spots
    C. Wrinkles
    D. Dry skin

11. Which is the first phase of disaster management?
    A. Preparedness B. Impact phase
    C. Rescue D. Rehabilitation

12. T.I.D. stands for _____
    A. 2 times a day B. 3 times a day
    C. 4 times a day D. Once a day

13. Mention the sixth step of counselling process.
    A. Integration process
    B. Time perspective
    C. Insight development
    D. Change in desirable behaviour

14. Form acute confusional state and progressive to disorientation is called as _____
    A. Depression B. Delirium
    C. Dementia D. Dyslexia

15. Which month the infant starts crawling?.
    A. 8 months B. 4 months
    C. 12 months D. 3 months

II – Answer any 10 questions in brief Q. No. 28 is compulsory 10 × 3=30

16. What is food adulteration?
17. Write the functions of potassium.
18. Define – Infection
19. What is meant by diabetes mellitus?
20. Define – Dementia.
21. What is polyhydramnios?
22. What are the objectives of neonatal care?
23. What is Geriatrics?
24. Write the types of disaster with examples
25. What is medical pharmacology?
26. Draw the diagram of communication process.
27. Write any 4 purposes of guidance.
28. Calculate the EDD for the given LMP = 10.01.2022.

III – Write short notes for any 5 questions. Q. No. 35 is compulsory 5 × 5=25

29. What are the benefits of cooking?
30. Explain the classification of tuberculosis.
31. Write the types of anaemia
32. What is mental retardation? And write the types
33. What are the functions of amniotic fluid?
34. Explain about congenital anomalies.
35. Prescription – Explain.

IV – Answer the following questions in detail. 10 × 2=25

36. (a) Write in detail about 'Acute myocardial infarction'
    (or)
    (b) Write in detail about fat soluble vitamins
37. a) Explain in detail about National immunization schedule
    (or)
    b) Write in detail about the routes of administration of drugs.

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NURSING

PRACTICAL

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9	HOME CARE MANAGEMENT	210-213	November
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Practical 1

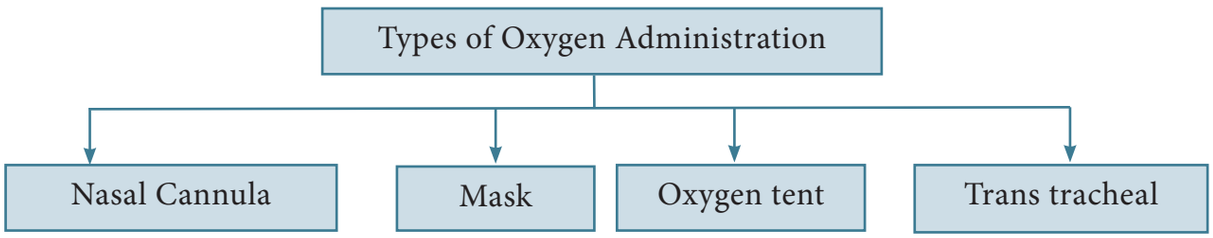


OXYGEN ADMINISTRATION

LEARNING OBJECTIVE

- To enumerate the types of oxygen administration
- To describe the purposes of oxygen administration
- To acquire the skills of administrating oxygen to patients.

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT



TOOLS AND EQUIPMENTS REQUIRED

Active Title	Sl. No.	Name of the Tools	Range	Quantity
Oxygen Administration	1.	Oxygen cylinder with stand	Weight : 15 kg Height : 91 cms Capacity : 10 Litres	1
	2.	Nasal Cannula	Length : 2 metres	1
	3.	Xylocaine Jelly %2	Weight : 30 gms	1
	4.	Normal Salaine solution %0.9	100 ml	1 bottle
	5.	Cotton Buds	-	As per needed
	6.	Kidney Tray	small	

Definition

Oxygen therapy is the administration of oxygen to patients those who are suffering with respiratory dysfunction and low level of O_2 in blood.



Indications for oxygen Administration:

- Cyanosis (bluish colour of the skin, nail beds and mucus membranes)
- Breathlessness or labored breathing
- An environment low in oxygen content. e.g. High altitudes
- Anaemia
- Diseases or conditions in the oxygen across the capillary membrane
- Shock and circulatory failure
- Haemorrhage and asphyxia
- Critically ill patients

Methods of oxygen administration:

The manner in which oxygen is administered depends upon the condition of the patient.

Oxygen can be delivered

1. Nasal cannula



2. Oxygen by mask

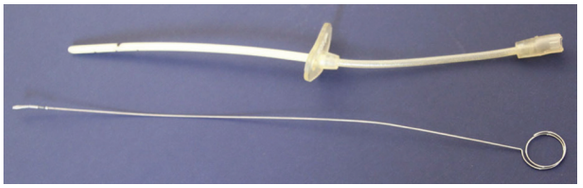


3. Oxygen ten



4. Trans tracheal oxygen.

Hazards of oxygen inhalation:



- Infection
- Combustion (Fire)

- ❖ Dryness of the mucus membranes of the respiratory tract
- ❖ Oxygen toxicity
- ❖ Atlectasis
- ❖ Retro lental fibro plasia
- ❖ Asphyxia

Procedure:

1. Wash hands.
2. Measure the length of the catheter from the tip of the nose to ear lobe. Mark the length with ink.
3. Check the cylinder for the working condition. Open the main valve in an anti clock wise direction. Look for the pressure reading on the gauge. Adjust the flow of oxygen to 2-4 Litres/min for adults.
4. When the wheel valve is opened the oxygen will start bubbling through the water in the humidifier.
5. Lubricate the tip of the catheter sparingly with water soluble jelly and check the flow by immersing it in water.
6. Introduce catheter slowly into one of the nostrils of the previously marked distance. Never use force.
7. Check the position of the catheter in the oropharynx at the level of the uvula.
8. It can be checked by asking the patient to open his mouth widely.
9. Depressing the tongue with tongue depressor and use the flash light to see the throat
10. Fix the catheter over the forehead or at the cheek of the patient with adhesive tapes
11. Save the connecting tube to the bed clothes or patient gown with safety pin

After care of the patient and articles:

- ❖ Keep the patient warmth and comfortable
- ❖ Assess the vital signs frequently
- ❖ Record the procedure with date and time in the nurses record

Costing Sheet

Sl. No.	Name of the components required (Raw Materials)	Range	Quantity	Cost (Approax.) Rs.	Valaue in the near by store (Rs.)
1.	Oxygen Cylinder stand	Wt : 15 kgs Ht : 91 cms Capacity : 10 Ltrs.	1	4800/-	
2.	Nasal Cannula	Length : 2 mtrs	1	400/-	450/-
3.	Xylocaine Jelly %2	Wt : 30 gms	1	120/-	140/-

4.	Normal salaine 0.9 %	100 ml	1	35/-	40/-
5.	Cotton Buds	-	10	10/-	10/-
6.	Kidney Tray	small	1	50	50

CONCLUSION

Hence the administration of oxygen through nasal cannula have been studied and demonstrated successfully.

Video Suggestions

S.no	Title	Link
1	Administration of Oxygen	https://youtu.be/Nc2zl2SeQNo

Simple Assessments

- Define Oxygen therapy?
- 2. Write the hazards of oxygen inhalation.
- 3. Draw the structure of oxygen cylinder and label the parts.

Student project	Student should visit the nearest hospital and write the observation report about the storage and distribution of oxygen to the patient unit.
Guest lecture suggestion	Nursing staff from Intensive care Unit
Field Visit	Hospital visit : ICU

Practical
2

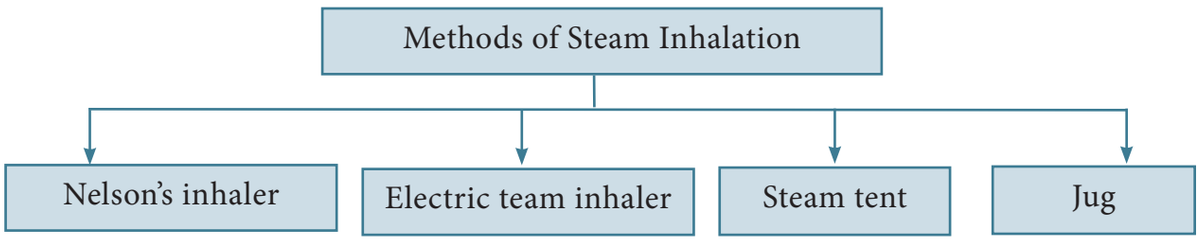


STEAM INHALATION

LEARNING OBJECTIVE

- To explain the structure of Nelson inhaler.
- To demonstrate steam inhalation by nelson inhaler.

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT



TOOLS AND EQUIPMENTS REQUIRED

Active Title	Sl. No.	Name of the Tools	Range	Quantity
Steam Inhalation	1.	Nelson inhaler with mouth piece	-	1
	2.	Basin	Large	1
	3.	Towel	L : 100 cm H : 50 cm	1
	4.	Face Towel	17 x 30"	1
	5.	Bath Towel	28 x 54"	1
	6.	Tr. Benzoin	15 ml (Bottle)	1
	7.	Measurement glass	1	1
	8.	Gauze piece	1 pack	4
	9.	Cotton Swabs	Small	5

	10.	Kidney Tray	Small	1
	11.	Backrest	24 x 19 x 21 “	1
	12.	Cardiac Table	30 x 16”	1

Definition:

Breathing warm and moist air produced by a vaporizer is called steam and moist inhalation.

Purpose:

1. To relieve the symptoms of cold and sinusitis caused by inflammation and congestion of mucous membrane
2. To loosen mucus secretion and bring out from the respiratory tract
3. To provide heat and moisture to prevent dryness of mucous membranes of lung
4. To aid in absorption of oxygen.

Drugs used:

- Tincture benzoin 5ml per 500ml of boiling water
- Eucalyptus 2ml per 500ml of boiling water
- Camper few crystals per 500ml of boiling water

Methods of steam inhalation:

- Jug Method



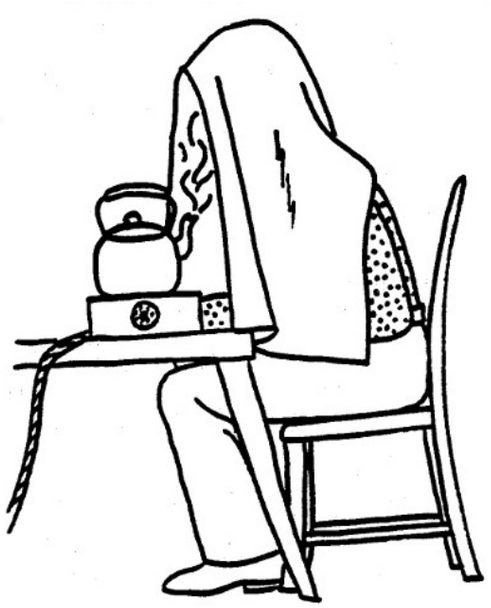
- Nelson’s inhaler



- Electric steam inhaler



- Steam tent



Procedure:

1. Prepare the patient and get his co-operation Protect him from cold air. Make him comfortably seated on the bed and table in front
2. Warm the inhaler with a little hot water and pour the water out
3. Pour the boiled water below the air inlet
4. Add the drug ordered
5. Cork the inhaler
6. Turn the mouthpiece away from the air inlet.
7. Wrap the inhaler with flannel or a towel and place it in a small tray or basin.
8. Take it to the bedside together with a towel and gauze piece
9. Wrap the piece of gauze around the mouthpiece of the inhaler
10. Place the inhaler infront of the patient and ask him to keep his mouth in the mouth piece and breathe in to receive the steam and breath out removing his lips from the mouthpiece
11. Continue the treatment for 15 to 20 minutes
12. Wipe the patient's face and keep him warm and in the same room for atleast an hour
13. Wash the mouthpiece and boil it. Wash the inhaler and replace all the articles
14. Record the procedure and effect on the patient

After care of patient and articles:

- ❖ Remove the back rest and cardiac table
- ❖ Adjust position of patient in bed. Make him comfortable
- ❖ Instruct him to remain in bed for 1 to 2 hours to prevent draught
- ❖ Record the procedure on the nurse's record with date and time

Costing Sheet

Sl. No.	Name of the components required (Raw Materials)	Range	Quantity	Cost (Approx.) Rs.	Value in the near by store (Rs.)
1.	Nelson inhaler (mouth Piece)	-	1	280	350
2.	Basin	Large	1	300	350
3.	Face towel	17 x 30"	1	100	120
4.	Bath towel	28 x 34"	1	200	250
5.	Tr.Benzion 15ml	15ml	1 bottle	66	75
6.	Measurement glass	15 –5 .2ml	1	20	25

7.	Gauze piece	7.5 x 7.5	1 pack	45	50
8.	Cotton swabs	50 gms	1 pack	20	25
9.	Kidney tray	Small	1	50	60
10.	Backrest	24x19x21”	1	1700	2000
11.	Cardiac Table	30x16”	1	3600	3900

Conclusion :

Hence after class demonstration, steam inhalation with Nelson inhaler done properly.

Video Suggestions

S.no	Title	Link
1	Steam Inhalation	https://youtu.be/YcmJQ3H-DGk

Simple Assessments

- Define steam inhalation
- Write the purposes of steam inhalation
- Draw the structure of Nelson inhaler

Student project	Ask the student to practice steam inhalation at home a person suffering with sinusitis and write the report.
Guest lecture suggestion	Nursing staff from medical ward – Near by hospital
Field Visit	Hospital visit – Inpatient department.

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Practical 3



HOT APPLICATION

LEARNING OBJECTIVE

- To explain the structure of Hot water bag.
- To demonstrate Hot application with hot water Bag.

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT

CLASSIFICATION OF HOT APPLICATIONS

LOCAL

Dry heat

- Hot water bottles
- Chemical heating bottles
- Infrared rays
- Ultraviolet rays
- Short wave diathermy
- Heating lamps
- Electric cradles
- Electric heating pads

Moist heat

- Warm soaks (Local bats)
- Hot fomentations (Compresses)
- Poultices (cataplasm)
- Stupes (medical fomentations)
- Paraffin baths
- Sitz bath
- Aquathermia pad

GENERAL

Dry heat

- Sun bath
- Electric cradles
- Blanket bed

Moist heat

- Steam baths
- Hot packs
- Whirlpool bath (Full immersion bath)

TOOLS AND EQUIPMENTS REQUIRED

Active Title	Sl. No.	Name of the Tools	Range	Quantity
Hot application	1.	Hot water Bag	15 x 7.5cm	1
	2.	Flannel cover	16 x 8 cm	2
	3.	Jug	1 Litre	1
	4.	Towel	100 x 50 cm	1
	5.	Lotion thermometer	-	1
	6.	Vaseline	100 ml	1
	7.	Boiled water	As needed	-
	8.	Cold water	As needed	-

Definition:

Hot application defines as stimulation of the skin and underlying tissues with heat for the purpose of decreasing pain, muscle spasms, or inflammation.

Purpose:

- To relieve pain and congestion
- To promote suppuration
- To provide warmth and comfort
- To promote healing
- To decrease muscle tone and to soften the exudates
- To relieve retention of urine



Indications:

- Local congestion
- Muscle spasm
- Fatigue
- Pain

Contra Indications:

- Heat is not used in malignancies, because heat increases, the metabolism of both the normal and abnormal cells
- Heat is not used for client with impaired kidney, heart and lung functions
- Heat should not be applied to actually inflamed areas. E.g: Acute tooth abscess. the heat may cause them to rupture the surrounding tissues
- Heat should not be applied on the clients with paralysis, weakness and debilitated clients, because they have impaired perceptions and they may not be responding to hot application resulting in burns

- ❖ Heat should not be applied, when there is oedema, associated with venous or lymphatic disease
- ❖ Heat should not be applied on clients with metabolic disorders. It may increase the hazards of tissues damage
- ❖ Heat should not be applied on clients with high temperature
- ❖ Heat should not be applied to very young and very old people because of the risk of tissue burns

Procedure:

1. Wash hands to prevent cross infection
2. Fill the hot water bag with boiled water half or one - third. Place the hot water bag over a flat surface like table and expel all the air by forcing the water up to the neck of the bag
3. Cork it tightly, dry the outside of the bag and check it for leakage by turning the bag upside down
4. Put on the cover and take it to the bedside
5. Apply to the area as ordered with the towel or sheet
6. Keep the bag for 20-30 minutes intermittently

After care of the patient and articles:

- ❖ Remove the hot water bag after completion of the treatment
- ❖ Observe the area for any redness
- ❖ Provide comfortable position to the patient
- ❖ Take all equipments to utility room
- ❖ Empty the hot water bag and hang it upside down to dry it.
- ❖ Record the procedure with date, time, effect of application and complication due to procedure etc in nurses record

Costing Sheet

Sl. No.	Name of the components required (Raw Materials)	Range	Quantity	Cost (Approx.) Rs.	Value in the near by store (Rs.)
1.	Hot Water Bag	-	1	200	225
2.	Flannel cover	Large	1	150	175
3.	Steel Jug	17 x 30”	2	400	450
4.	Towel	28 x 34”	1	100	125
5.	Lotion Thermometer	15ml	1	200	220

CONCLUSION

Hence after classroom demonstration, Hot application with hot water bag done properly

Video Suggestions

S.no	Title	Link
1	Hot application	https://youtu.be/JnYLx3EdFU4

Simple Assessments

- Define hot application.
- Write the purposes of hot application.
- Mention the contra indication for hot application.

Student project	Ask the student to practice hot application at home for a person suffering with knee joint pain and write the result.
Guest lecture suggestion	Nursing staff from medical ward – near by hospital
Field Visit	Hospital visit – Inpatient medical department.

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Practical 4



COLD APPLICATION

LEARNING OBJECTIVE

- To demonstrate cold application with ice cap.

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT

CLASSIFICATION OF COLD APPLICATIONS

LOCAL

- **Dry cold**
  - Ice bag
  - Ice collar
  - Ice pack (poultice)
  - Ice cradle
  - Chemical cold packs
- **Moist cold**
  - Ice to suck
  - Cold compress
  - Evaporating lotion

GENERAL

- **Dry cold**
  - Hypothermia
- **Moist cold**
  - Cold sponging
  - Cold bath
  - Cold packs

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TOOLS AND EQUIPMENTS REQUIRED

Active Title	Sl. No.	Name of the Tools	Range	Quantity
Cold Application	1.	Ice cap	15 x 7.5cm	1
	2.	Cover	16 x 8 cm	1
	3.	Salt	100 gms	As needed
	4.	Tea spoon	-	1
	5.	Dusting cloth	50 x 15 cm	1
	6.	Towel	100 x 50 cm	1
	7.	Rubber mack intosh	100 x 90 cm	1
	8.	Bowl	Small	1
	9.	Ice cubes	-	As needed

Definition:

Cold application is defined as stimulation of the skin and underlying tissues with cold for the purpose of decreasing pain, muscle spasms, or inflammation.

Purpose :

- To reduce pain and body temperature
- To anaesthetize an area
- To control hemorrhage
- To control the growth of bacteria
- To prevent gangrene
- To prevent edema
- To reduce inflammation

Local cold application

Ice cap (Dry cold)



Indications

- Fever
- Bleeding
- Allergy
- To reduce edema

Procedure:

1. Explain the procedure to the patient
2. Fill the ice bag with water, put in the stopper turn the bag, upside down to check for any leakage
3. Fill the bag half to two – third with crushed ice
4. Sprinkle salt (NaCl)
5. Keep the bag on a flat surface and squeeze out the air, presence of air will interfere with the thermal conductivity
6. Screw the cap tightly
7. Wipe outside of the bag and put on the cover
8. Apply the ice bag over the area.
9. Clean the area with a bath towel
10. Make client comfortable

After care of the patient and articles:

- Clean the equipment and replace it in the proper place
- Discard the crushed ice cubes
- Wash hands
- Document the care with date, time, site and duration of the application

Costing Sheet

Sl. No.	Name of the components required (Raw Materials)	Range	Quantity	Cost (Approax.) Rs.	Valaue in the near by store (Rs.)
1.	Hot Water Bag	15 x 7.5cm	1	200	225
2.	Flannel cover	16 x 8 cm	1	150	175
3.	Steel Jug	100 gms	-	20	25
4.	Towel	100x50 cm	1	20	22
5.	Lotion Thermometer	-	1	100	125
6.	Rubber mackintosh	100 x 90 cm	1	100	125
7.	Bowl	Small	1	40	50

CONCLUSION

Hence after classroom demonstration Cold application with ice cap done properly.

Video Suggestions

S.no	Title	Link
1	Cold application	https://youtu.be/qOqTAezhj10

Simple Assessments

- Define cold application.
- Write the purposes of cold application

Student project	To do cold application & Cold compress at home for a person suffereing with fever. And write a report.
Guest lecture suggestion	Nursing Staff from medical ward – Near by Hospital
Field Visit	Hospital visit – Inpatient medical department.

Practical 5

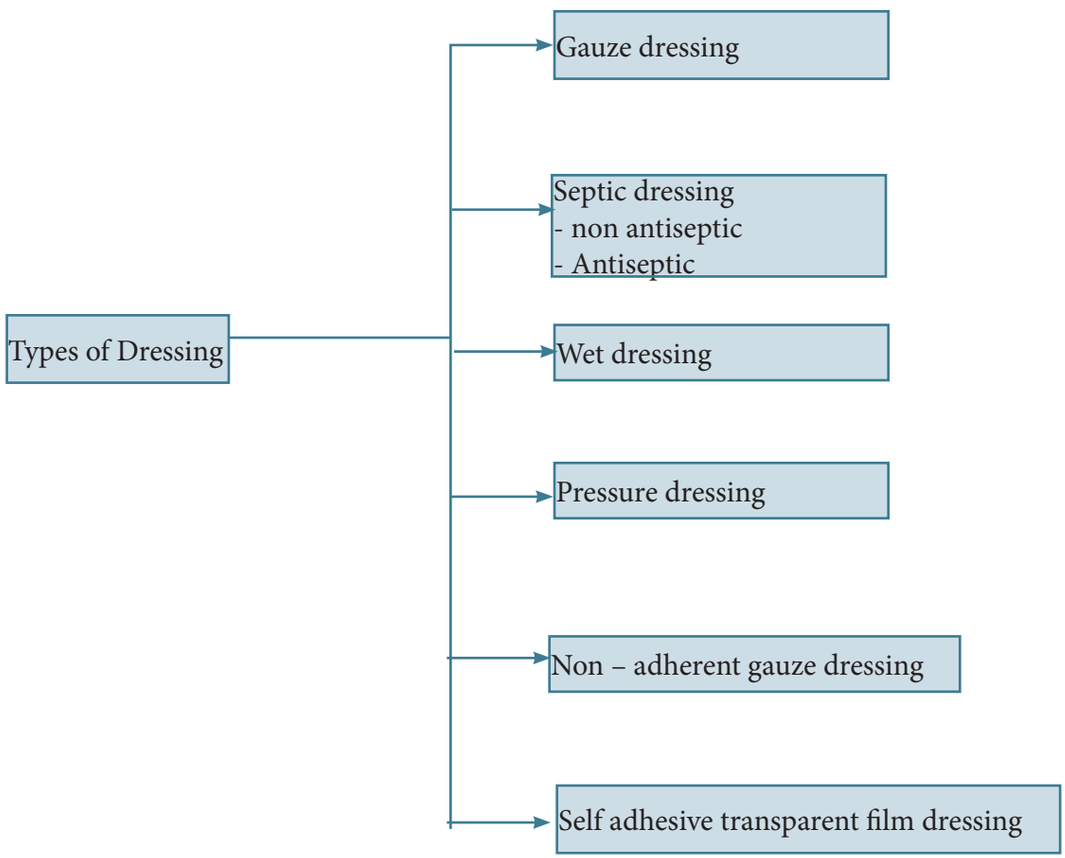


MINOR WOUND DRESSING

LEARNING OBJECTIVE

- To describe the types of dressing
- To explain the purposes of dressing
- To demonstrate minor wound dressing

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT



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TOOLS AND EQUIPMENTS REQUIRED

Sterile Tray				
Dressing	Sl. No.	Name of the components required	Range	Quantity
	Rs.	Value in the near by store (Rs.)		
	1.	Artery forceps	6”	1
	2.	Dissecting Forceps	5”	2
	3.	Scissor	6”	1
	4.	Sinus Forceps	6”	1
	5.	Steel Bowl	Small	1
	6.	Gloves	7,“6.5 ,“6”	1
	7.	Mask	9.5 x 17 cm	1
	8.	Gown	L. 136 – 130cm	1
	9.	Cotton Balls	-	10
	10.	Gauze Pieces	10 cm	10
	11.	Cotton pad	10 x 10 cms	2

Unsterile Tray				
Dressing	Sl. No.	Name of the components required	Range	Quantity
	Rs.	Valaue in the near by store (Rs.)		
	1.	Betadine solution	100ml	1 bottle
	2.	Betadine ointment	-	1 tube
	3.	Vaseline gause	10 cm	1 pack (20)
	4.	Ribbon gause	5 m x 7.5 cm	1 roll
	5.	Swan sticks	-	5
	6.	Chetle forceps	10”	1
	7.	Bandage	5cm x 3 cm	1
	8.	Binders	10cm x 3 cm	1
	9.	Adhesive plaster	2.5 cm x 5 m	1
	10.	Scissor	6”	1
	11.	Bowl	Large	1
	12.	Kidney tray	Small	1
	13.	Mackintosh	90cm x 1 m	1
	14.	Towel	100 x 50 cm	1

Definition:

Wound is a cut or break in the continuity of the skin. Cotton or gauze pieces are used to clean the wound. The dressing of the wound with dressing materials is called wound dressing.

Types of dressing



- Gauze dressing
- Non antiseptic dressings
- Antiseptic dressings
- Wet dressings
- Pressure dressings
- Non-adherent gauze dressing
- Self adhesive transparent film

Purposes:

1. Protect the wounds from contamination with micro-organism
2. Promote healing by absorbing drainage and debriding a wound
3. Support the wound site as a splint
4. Prevents the client from visualizing the wound
5. Promotes thermal insulation to the wound surface
6. Maintenances of high humidity between the wound and dressing
7. Provides mental and physical comfort for the patient

Procedure:



1. Wear face mask
2. Wash hands thoroughly
3. Wear the gown and gloves
4. Open the sterile tray spread the sterile towel around the wound
5. Use a clean forcep and remove the dressing and discard it in the paper bag
6. Disinfect the forcep in the bowl of lotion
7. Note the type and the amount of drainage present
8. Ask the assistant to pour small amount of cleaning solution into the bowl
9. Clean the wound from the centre to the periphery and discard the used swabs after each stroke
10. Disinfect the used forceps in the bowl of lotion
11. Apply medications if ordered
12. Secure the dressing with bandages or adhesive tapes

After care of the patient:

1. Help the patient to dress up and to take a comfortable position in the bed. Change the bed garments if soiled with drainage
2. Replace the bed linens after dressing
3. Remove the mackintosh and towel
4. Replace all other articles in the proper place. Send the soiled linen to the laundry for washing
5. Wash hands
6. Record the procedure on the nurses record with date and time. Recording includes the condition of the wound and amount of drainage, condition of the sutures etc on the nurses record. Report to the surgeon any abnormalities found.

Costing Sheet

Sl. No.	Name of the components required	Range	Quantity	Cost (Approx. Rs.)	Value in the near by store (Rs.)
Rs.	Value in the near by store (Rs.)				
1.	Artery forceps	6”	1	175	200
2.	Dissecting Forceps	5”	2	300	350
3.	Scissor	6”	1	200	225
4.	Sinus Forceps	6”	1	175	200
5.	Steel Bowl	Small	1	50	60
6.	Gloves	7,“6.5 ,“6”	1	70	85
7.	Mask	9.5 x 17 cm	1	5	10
8.	Gown	L. – 130 136cm	1	80	100
9.	Cotton Balls	-	10	10	10
10.	Gauze Pieces	10 cm	10	40	50
11.	Cotton pad	10 x 10 cms	2	35	50
12.	Betadine solution	100ml	1 bottle	-	-
13.	Betadine ointment	-	1 tube	-	-
14.	Vaseline gause	10 cm	1 pack (20)	185	200

15.	Ribbon gause	5 m x 7.5 cm	1 roll	199	250
16.	Swan sticks	-	5	20	25
17.	Chetle forceps	10”	1	403	450
18.	Bandage	5cm x 3 cm	1	60	75
19.	Binders	10cm x 3 cm	1	75	90
20.	Adhesive plaster	2.5 cm x 5 m	1	90	100
21.	Scissor	6”	1	200	225
22.	Bowl	Large	1	100	120
23.	Kidney tray	Small	1	50	70
24.	Mackintosh	90cm x 1 m	1	100	120
25.	Towel	100 x 50 cm	1	100	125

CONCLUSION

Minor wound dressing demonstrations and students practised with themselves successfully.

Video Suggestions

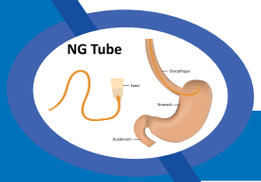
S.no	Title	Link
1	Dressing	https://youtu.be/MqnLb3qhWQk

Simple Assessments

- Define wound dressing
- Enlist the types of dressing
- Write the purposes of dressing

Student project	Practice minor wound dressing in the classroom
Guest lecture suggestion	Nursing staff from surgical unit : - Near by Hospital
Field Visit	Hospital visit – Inpatient surgical department.

Practical 6

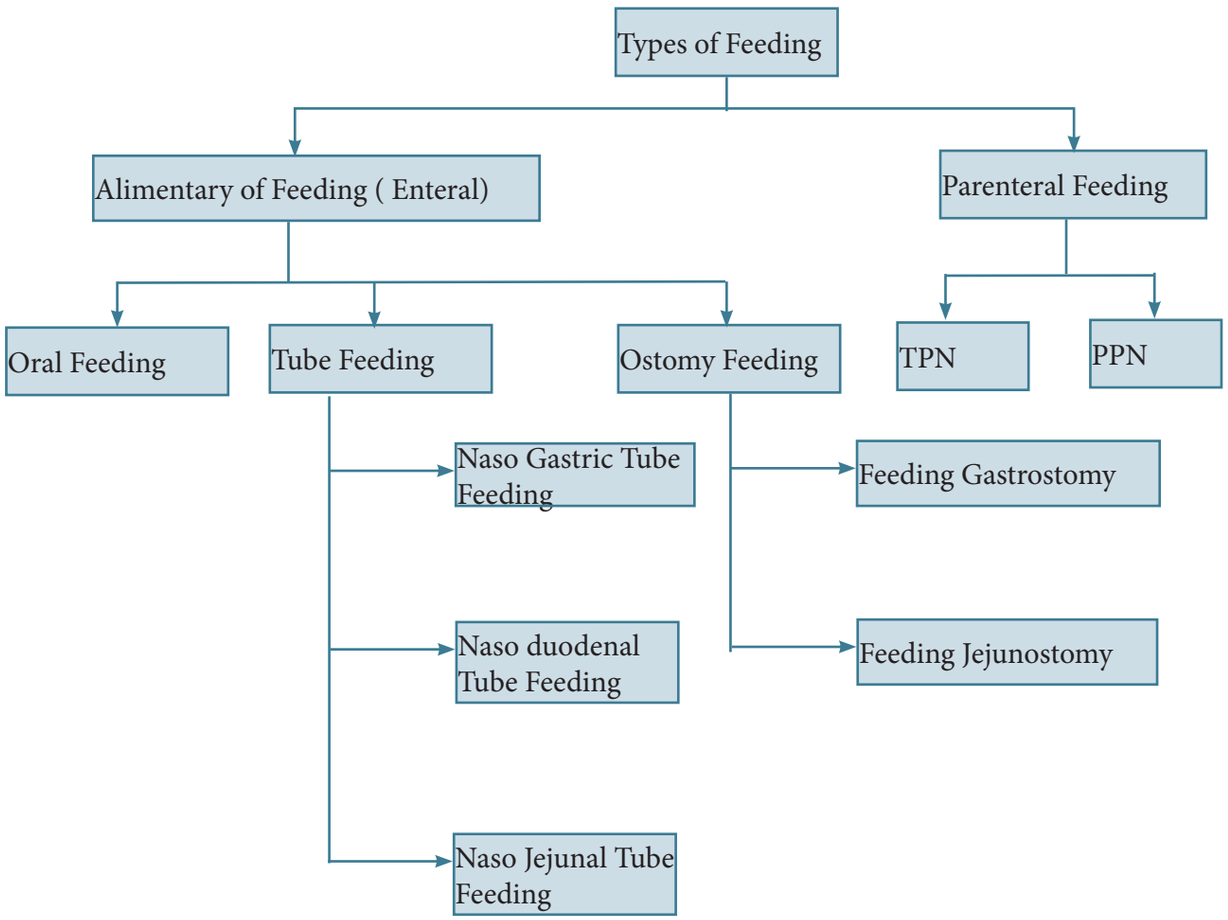


NASOGASTRIC TUBE FEEDING

LEARNING OBJECTIVE

- To explain the types of feeding
- To describe the purposes of Naso gastric tube feeding
- To acquire the skills of Naso gastric tube insertion and feeding

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT

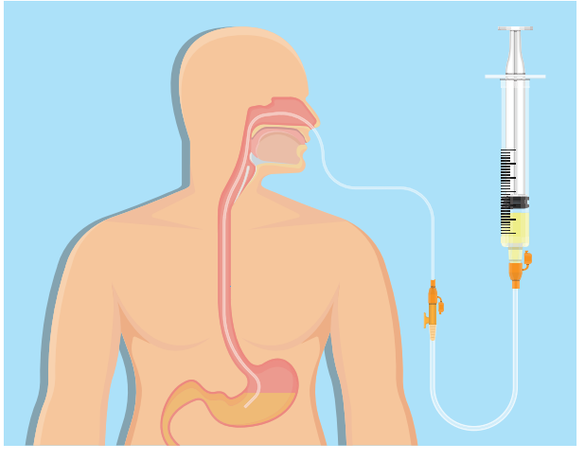


TOOLS AND EQUIPMENTS REQUIRED

Nasa Gastric Tube Feeding	S. No.	Name of the Components requiry (raw materials)	Range	Quantity
	1.	Naso –Gastric tube	16-14Fr	1
	2.	Syringe	20ml or 50ml	1
	3.	Xylocaine Jelly	30 gms	1
	4.	Stethoscope	-	1
	5.	Adhesive tape	0.5 inch	1
	6.	Kidney Tray	Small	1
	7.	Tongue Depressor	Small	1
	8.	Bowl	Small	1
	9.	Artery Forcep	6”	1
	10.	Towel	199 x 50 cm	1
	11.	Gauzepieces	10 cm	1) 10 pack)
	12.	Flash light	-	1
	13.	Water	-	As needed

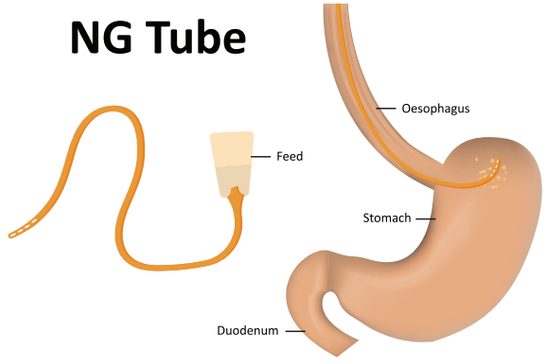
Definition:

Naso-gastric tube or Ryle's Tube insertion of the plastic tube through the nose via the oesophagus into the stomach for administration of liquid foods is called Ryle's tube Feeding.



Purposes:

- Patient who refuses to eat incase of mental conditions like psychosis
- If patient has cleft palate, swelling in the throat and those who cannot swallow
- Oral infection or oral surgery
- Unconscious patient
- Pre-mature baby



Procedure:

1. Wash hands
2. Explain the procedure to the patient, if patient is conscious
3. Provide privacy to the patient
4. Place the mackintosh and towel across the chest
5. Measure the length of the Ryle's tube from tip of the nose to ear lobe to xiphoid process (sternum) and mark with tape
6. Lubricate the Ryle's tube and insert through any nostril posteriorly to the throat
7. Encourage the patient to swallow by giving small sips of water if patient is conscious. For unconscious patient, nurse has to insert tube at the back of throat using tongue depressor
8. Keep the tip of the tube inside the bowl of water and watch for any air bubbles

9. Attach 10/20ml syringe to end of the tube and aspirate back on the syringe gently to obtain gastric juice
10. Push 5-10 ml of air while auscultating the stomach
11. Clean the Ryle's tube after confirming placement
12. Fix the tube with adhesive tape
13. Administer tube feeding, pinch the proximal end of the tube. Attach syringe to the end of the tube and elevate 45cms above head. Fill the syringe with liquid diet, allow to empty gradually
14. And pour water to wash off feed particles

After care of the patient and articles:

- Remove the mackintosh and towel and disinfect it with antiseptic solution
- Give comfortable position to the patient
- Replace the articles
- Wash hands
- Record the procedure with date and time
- Inform any reaction to the incharge sister

Costing Sheet

S. No.	Name of the Components requiry (raw materials)	Range	Quantity	Cost (Approx. Rs.)	Value in the near by store (Rs.)
1.	Naso –Gastric tube	16-14Fr	1	80	120
2.	Syringe	20ml or 50ml	1	25	35
3.	Xylocaine Jelly	30 gms	1	35	50
4.	Stethoscope	-	1	65	80
5.	Adhesive tape	0.5 inch	1	50	60
6.	Kidney Tray	Small	1	120	150
7.	Tongue Depressor	Small	1	120	150
8.	Bowl	Small	1	40	50
9.	Artery Forcep	6"	1	175	200
10.	Towel	199 x 50 cm	1	100	125
11.	Gauzepieces	10 cm	1) 10 pack)	40	50
12.	Flash light	-	1	170	220

CONCLUSION

Hence, Naso gastric tube insertion demonstrated in the classroom for mannequin properly.

Video Suggestions

S.No	Title	Link
1	Naso gastric tube feeding	https://youtu.be/F597Y9C01Z8

Simple Assessments

- Define Ryles tube feeding
- Write the purposes naso-gastric tube feeding

Student project	Prepare a chart with different colour of naso gastric tube and mention the sizes.
Guest lecture suggestion	Nursing staff from medical ward – Near by hospital
Field Visit	Hospital visit – ICU.

Practical 7

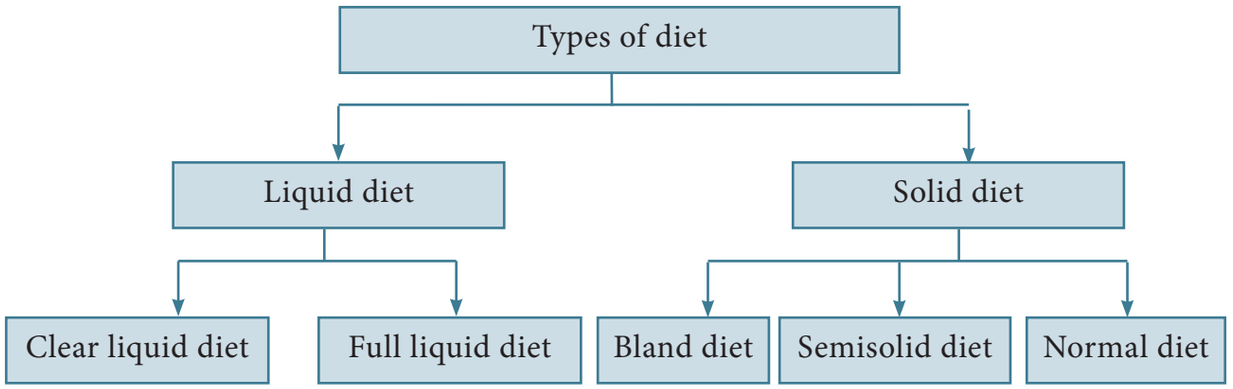


NUTRITION - THERAPEUTIC DIET

LEARNING OBJECTIVE

- To explain about therapeutic diet
- To prepare special diet like lemon whey water, Tomato juice, Ragi porridge, Dhal rice and Vegetable sandwich.

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT



TOOLS AND EQUIPMENTS REQUIRED

Activities	Sl. No.	Name of the components required	Range	Quantity
Lemon whey water	1.	Milk	-	1 litre
	2.	Lemon	Small	5
	3.	Sugar	50gms	2 tablespoon
Tomato Juice				
	1	Tomato	1 kg	900 gms
	2.	Sugar	100 gms	3 tablespoon
	3.	Salt	50 gms	As needed

	4.	Pepper	25 gms	As needed
	5.	Water	-	As needed
Ragi Porridge				
	1	Ragi flour	200 gms	1 cup
	2.	Cashewnut	50 gms	1 + sp (chopped)
	3.	Milk	500 ml	2 cups
	4.	Cardamom	5	2
	5.	Sugar	50 gms	1 tablespoon
	6.	Water	300 ml	2 cups
Dhal Rice	1.	Rice	200 gms	1 cup
	2.	Toordhal	100 gms	¼ cup
	3.	Oil	50 gms	1 + sp
	4.	Mustard	50 gms	½ sp
	5.	Cumin	50 gms	½ sp
	6.	Redchilli	50 gms	5 (Nos.)
	7.	Curry leaves	Few	Few
	8.	Asafetida	50 gms	As needed
	9.	Onion	100 gms	1
	9.	Tomato	100 gms	1
	10.	Water	500 ml	2 ½ cup
	11.	Salt	50 gms	To taste
Vegetable sandwich	1.	Brown bread	1 pack	10 slices
	2.	Tomato	100 gms	1
	3.	Onion	100 gms	1
	4.	Cucumber	200 gms	1
	5.	Boiled beetroot	200 gms	1
	6.	Boiled potato	200 gms	1
	7.	Butter	25 gms	1 tsp
	8.	Chat masala	25 gms	½ tsp
	9.	Salt	50 gms	To taste

Definition :

Balanced diet is one, which contains the different types of foods in such quantities and proportion so that the need for calories, proteins, minerals, vitamins and other nutrients are adequately met in small proportion is made for extra nutrients to withstand duration of illness.

Factors:

1. Age
2. Sex
3. Physical work
4. Physiological stress
5. Pregnancy
6. Lactation

Five groups:

- Cereals, grains & products
- Pulses and legumes
- Milk and milk products
- Fruits and vegetables
- Fats and sugar



Points to keep in the mind while planning menu:

1. Whole grain cereals, parboiled grains or malted grains give higher nutritive value.
2. It is better to include 2 cereals like rice and wheat
3. Flour should not be sieved for chapatti as it will reduce bran content
4. One serving of cereal is 25g. A day's menu may require 2-4 servings
5. Minimum ratio of cereals, proteins should be 4% in terms of the grains it will be 8 parts of cereals and one part of pulses
6. One serving of pulse is 25g. 2 to 3 servings should be taken
7. One serving of vegetables is 75g Green leafy vegetables can be taken more than one serving, if fruit is not included in the diet
8. It is better to serve the fruit raw without much cooking or taking juice out of it. Everyday diet should contain at least one medium size fruit
9. There should be a minimum of milk 100ml/ day, one to 2 glasses of milk or curd should be included in balanced diet
10. Energy derived from oils or fats is 15-20% of total calories and 5% from sugar and jaggery
11. One egg weighs around 40g of protein. This can be served along with cereal or pulses to improve the quality of protein. Instead of one serving of poultry/fish, one egg can also be included in the diet
12. Inclusion of salads not only help in meeting the vitamin requirements but the meals would be attractive and have high satiety value, due to the fiber content
13. Fried foods cannot be planned if oil allowance is less or in low caloric diets
14. One third of nutritional requirement atleast calories, protein should be met by lunch and dinner
15. If possible meals should be planned for seven days
16. Usually the number of meals would be four and for every young children and sick persons, the number of meals can be more
17. Ideally each meal should consist of all the 5 food groups
18. For quick calculations average value of calories and proteins from the same group can be taken

Meal planning

❖ Meal planning can be defined as taking the time to plan nutritious meals for a specified time. To plan therapeutic meals, the groups and classes of foods must be put into consideration

A dietary menu for diabetes patients is as follows:

TIME	FOOD ITEMS	QUANTITY
6 am	Milk or coffee or tea without sugar	50 ml
8 am	Idli/idiyappam or Dosai/chappathi or Wheat Bread or Uppuma/pongal (with Sambar)	3 no 2 no 4 slices 1 cup
11 am	Butter milk/vegetable soup/lime juice (or) Fruit (small) (or) Veg salad	200 ml (1 cup) ½ plate
Lunch	Rice Chappathi Dhal Rasam with vegetable a group Butter milk	1cup 2 1 cup 2 cups ½ cup
4 pm	Tea (or) coffee (or) milk Chundal Arraroot biscuit Bread Fruit	100 ml ¼ cup 2 No 2 slices (Small) -1
Dinner	Lunch menu or breakfast menu	
Before bed	Milk	100 ml
Oil for 1 day	Sunola/Suffola/Gingelly oil/refined oil	10-15 g (2 – 3 tsp)
Non vegetarian	Egg 1 or 2 (white) Chicken/fish/mutton	50 g (without fat)

Foods to be included from Diet

Vegetable

❖ **Group A:** Vegetables – 3-4 cups/day

Except root all vegetables.

❖ **Group B:** Beet root, carrot, drumstick leaves, beans, turnip, mango ginger, onion (small) Raddish (red) beans lady's finger etc.

Fruits (1 day)

❖ Pooran banana – ½ small

❖ Orange / apple / guava – 1 small

- Grape – 10 -20 nos
- Lemon /sweet orange – 1-2 No
- Pappaya – 4.5 small pieces

Foods to be excluded from diet:

- Sugar, honey, jaggery, sweet syrup and fried foods
- All roots
- Cool drinks
- Horlicks, Bournvita etc
- Coconut, coconut oil, palm oil
- Ground nut and all nuts
- Tinned food
- Alcohol
- Butter, ghee, cheese

Snacks to be eaten in between meals:

- Butter milk
- Vegetable soup
- Vegetable salad
- Lime/tomato juice without sugar

A dietary menu for hypertensive patients is as follows:

Morning	Weak Tea one Cup
Break fast	Bread or idli with sugar, or jam fruit one cup, skimmed milk one cup. Nuts one table spoon.
Mid morning	Fruit juice 200 ml
Lunch	Rice or chappati / one serving dhal or meat or fish, one cup vegetable, one serving skimmed butter milk or pudding one cup
Evening	Biscuits two and fruit juice one glass and roasted nuts two table spoons
Dinner	Similar to lunch

Diet

Definition: Diet is an important as medicine in the treatment of diseases. A modification in the diet or in the nutrients can cure certain diseases. E.g a patient suffering from peptic ulcer needs a bland diet for this recovery. A salt free diet can reduce the blood pressure in a patient with hypertension.

Types of Diet:

- Full diet
- Liquid diet
- Soft diet
- Semi solid diet
- Bland diet
- High protein diet
- Low protein diet
- Salt free diet or salt low diet
- Low fat diet
- Low residual diet
- Low calorie diet

(i) Full diet: For the patients who are well, a well – balanced full diet should be served, either vegetarian or non vegetarian as desired (e.g for tuberculosis patients)

(ii) Liquid diet: When no solid food is taken, a total of atleast 2000 ml per day. Milk is the basis of a good liquid diet. (e.g Fever patients)

(iii) Soft and semi – solid diets: The diet should be equally nutritious and balanced as a full diet. Foods may be mined or masked to make them soft. (e.g patients in post – operative period)

(iv) Bland diet: This is a soft and easily digestive diet without spices and condiments. (e.g. Patients with gastro intestinal disorders)

(v) High protein diet: Mixed protein – rich foods like ground nut, grams and dhal may be ground and cooked with the stable cereal. About one litre of milk should be taken each day. (e.g. Burns and protein deficiency diseases).

(vi) Low protein diet: Carbohydrate foods with a little ghee or butter may be allowed and boiled sweets. (e.g. Patients with acute nephritis)

(vii) Salt free diet or low salt diet: For a salt free diet no salt is allowed in the preparation of foods. Sugar, lime juice may be added for giving taste. (e.g patients with oedema)

(viii) Low fat diet: Carbohydrates, vegetables and fruits are allowed no fat is used in cooking. (e.g. Patients with liver and gall bladder diseases)

(ix) Low residual diet: This is a diet without roughage or anything that stimulates the bowel. (e.g. Patients with colitis and colostomy)

(x) Low calorie diet: Carbohydrates and fat are minimised to reduce the body weight. (e.g. Patients with obesity or heart diseases).

Special food preparations:

1. Lemon whey water:

Whey is the liquid remaining after milk has been curdled and strained.

Purpose:

1. It provides more vitamins, minerals and proteins
2. It is beneficial for weight loss and lower cholesterol

Ingredients:

ITEMS	AMOUNT
Milk	1 litre
Lemon juice	25 ml
sugar	2 table spoon

Preparation:

1. Pour the milk into a large pot
2. Heat the milk to boil
3. Stir in 25ml of lemon juice
4. Let the solution rest in heat for 20 minutes
5. Transfer the curds and whey into a bowl topped with a lined strainer
6. Add sugar
7. Cool and serve

2. Tomato juice:

Tomato juice is a juice made from tomatoes, usually used as a beverage.

Purposes:

1. It has an anti oxidant property
2. It helps to regularise digestion
3. It helps to prevent blood clotting
4. Lowers cholesterol

Ingredience:

ITEMS	AMOUNT
Tomatoes	900 grams
Sugar	3 table spoon
Salt	to taste
Pepper	to taste

Preparation:

1. Rinse the tomatoes under running water
2. Slice the tomatoes
3. Use a stainless steel or porcelain pot rather than an aluminium one, aluminium will likely react with the acid in the tomatoes. Causing discolouring and possibly loses flavour
4. Use a potato masher or a wooden spoon to press the tomatoes releasing some of the juice
5. If the mixture seems too dry to boil, add a few cups of water until you have enough liquid in the pot to boil
6. Keep cooking until the mixture is ready
7. Add sugar and salt or other seasonings to flavour the tomato juice. The sweetness of the sugar helps cut back the acidity of the tomatoes
8. Remove the tomatoes from the stove and allow them to cool for a few minutes
9. Strain the solids from the juice using a strainer
10. Cover and chill the juice

3. Ragi porridge:

Ragi is an absolutely perfect supplement for any other grain because of its nutritional value.

It has high dietary fibre content a perfect choice for diabetic patients.

Purposes:

1. Provides high amount of dietary fibre
2. Ragi flour reduce the blood sugar level by activating insulin
3. Minimises appetite and induce weight loss

Ingredients:

ITEMS	AMOUNT
Ragi flour	1 cup
Finelly chopped cashews	1 teaspoon
Milk	2 cups
Cardamom	2 (powdered)
Water	2 cups
Sugar	1 table spoon

Preparation:

1. Take a medium sized bowl and mix the ragi flour with milk and water. Make sure that there are no lumps in the mixture
2. Heat a pan over medium flame and pour the mixture in it. Keep stirring it continuously and cook until it gets a thick consistency
3. After the mixture turns thick, lower the flame and add sugar in it. Mix once and turn off the stove. Garnish with chopped cashews and serve hot. If the porridge has turned too thick you can add some more milk and cook for 2-3 minutes

4. Dhal rice:

Dhal and rice together are a complete vegetarian protein. The ghee not only enhances the flavour but also helps us absorb the nutrients from the dhal, rice, turmeric and cumin

Purposes:

1. Building muscle
2. Anti inflammatory and healing
3. Rich in antioxidants
4. Boosts metabolisms
5. Rich in nutrients & also helps absorb nutrients

Ingredients:

ITEMS	AMOUNT
Rice	1 cup
Toor dhal	¼ cup
Oil	1 tsp
Mustard	½ tsp
Cumin	½ tsp
Red chilli	5 nos
Curry leaves	Few
Asafoetida	1 pinch
Onion	1 no
Tomato	1 no
Water	2 ½ cups
Salt	to taste

Preparation:

Instructions:

1. Sock rice and dhal together for 30 min wash and keep it aside
2. Chop the onion, tomatoes and slit the red chillies

Cooking:

1. In a pressure cooker heat oil. When hot add mustard. When the mustard crackles add curry leaves, asafoetida, red chilli and chopped onion. Fry till onion turns golden brown
2. Add the tomato and cook till they are done
3. Add the rice, salt, water and allow it cook for 3 whistles

5. Vegetable sandwich:

Two slices of bread with a filling vegetable between them is called vegetable sandwich.

Purpose:

1. Rich in vitamins and minerals
2. A good energy yielding food
3. It is a nutritious and healthy food

Ingredients:

ITEMS	AMOUNT
Brown bread	10 slices
Tomato	1
Onion	1
Cucumber	1
Boiled beet root	1
Boiled potato	2
Butter	2 tsp
Chat masala	½ tsp
Salt	to taste

Preparation:

1. Peel and cut the vegetables into thin slices
2. Apply butter on the bread slices
3. Place 5 slices of all the veggies alternately
4. Sprinkle chat masala and salt on the veggies

5. Cover these with the remaining bread slices. Now toast the sandwiches
6. Remove when done and apply some butter on the top of the hot toast sandwiches

Costing Sheet

Activities	S.No	Name of the components required	Range	Quantity	Cost	Value in the near by store (Rs.)
Lemon whey water	1	Milk	-	1 litre	60	60
	2	Lemon	Small	5	20	25
	3	Sugar	50gms	2 tablespoon	5	6
Tomato Juice	1	Tomato	1 kg	900 gms	40	50
	2	Sugar	100 gms	3 tablespoon	10	12
	3	Salt	50 gms	As needed	-	-
	4	Pepper	25 gms	As needed	30	35
	5	Water	-	As needed	-	-
Ragi Porridge	1	Ragi flour	200 gms	1 cup	20	22
	2	Cashewnut	50 gms	1 + sp (chopped)	40	45
	3	Milk	500 ml	2 cups	30	32
	4	Cardamom	5	2	5	5
	5	Sugar	50 gms	1 tablespoon	10	10
	6	Water	300 ml	2 cups	-	-
Dhal Rice	1	Rice	200 gms	1 cup	10	12
	2	Toordhal	100 gms	¼ cup	8	10
	3	Oil	50 gms	1 + sp	10	10
	4	Mustard	50 gms	½ sp	12	13
	5	Cumin	50 gms	½ sp	12	15
	6	Redchilli	50 gms	5 (Nos.)	15	20
	7	Curry leaves	Few	Few	-	-
	8	Asafetida	50 gms	As needed	30	35
	9	Onion	100 gms	1	8	10
	10	Tomato	100 gms	1	6	5
	11	Water	500 ml	2 ½ cup	-	-
	12	Salt	50 gms	To taste	10	10

Vegetable sandwich	1	Brown bread	1 pack	10 slices	30	35
	2	Tomato	100 gms	1	10	10
	3	Onion	100 gms	1	8	10
	4	Cucumber	200 gms	1	8	10
	5	Boiled beetroot	200 gms	1	8	10
	6	Boiled potato	200 gms	1	8	10
	7	Butter	25 gms	1 tsp	15	20
	8	Chat masala	25 gms	½ tsp	15	20
	9	Salt	50 gms	To taste	-	-

CONCLUSION

Hence the therapeutic diets like Lemon whey water, Tomato juice, Ragi porridge, Dhal rice and Vegetable sandwich prepared.

Video Suggestions

S.no	Title	Link
1	Nutrition - therapeutic diet	https://youtu.be/ol4DBGWRyJk

Simple Assessments

- Define balanced diet.
- Explain the types of diet
- What is meant by bland diet?

Student project	Prepare a diet plan for diabetes (2000 KCal)
Guest lecture suggestion	Dietition from hospital
Field Visit	Hospital visit – Directory Department

Practical
8

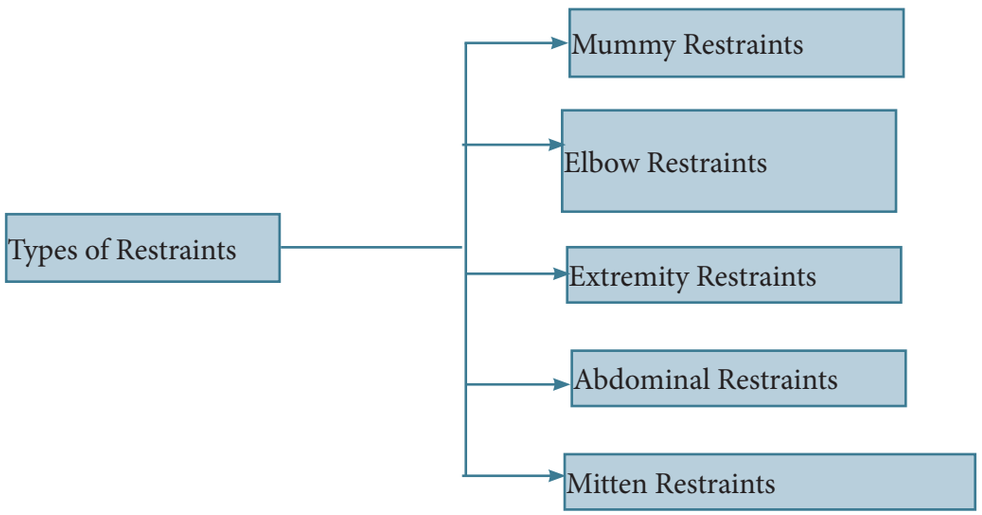


RESTRAINTS

LEARNING OBJECTIVE

- To explain about the general principles for use of restraints.
- To demonstrate the application of Mummy restraint, Extremity restraint and Mitten or finger restraint.

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT



TOOLS AND EQUIPMENTS REQUIRED

Sl. No.	Name of the components required	Range	Quantity
1.	Sheet (cotton)	1.5m × 1.5 meter	1
2.	Elbow restraints	6 – “4”	1
		8.5 – “6”	1
3.	Limb restraints	12”,	1
		15”	1
		20”	1
4.	Mittens	2.5 × 4.5 × 3.25	2

DEFINITION:

Restraint is defined as 'the intentional restriction of a person's voluntary movement or behavior.

General Principles for Use of Restraints

- Should be selected to reduce clients movement only as much as necessary
- Nurse should carefully explain type of restraint and reason for its use
- Should not interfere with treatment
- Bony prominences should be padded before applying it
- Should be changed when they become soiled or damp
- Should be secured away from a clients reach
- Should be able to quickly release the device
- Should be attached to bed frame not to side rails
- Should be removed a minimum of every 2 hrs
- Frequent circulations checks should be performed when extremity is used

Indications:

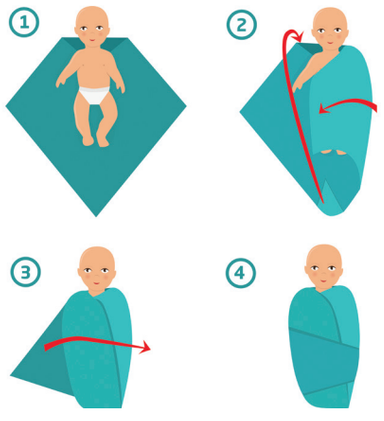
- Displaying behavior that is putting themselves at risk of harm
- Requiring treatment by a legal order, for example, under the Mental Health Act 2007
- Requiring urgent life-saving treatment
- Needs to be maintained in secure settings
- All alternatives must be tried before restraining
- Offer bedpan or bathroom every 2 hours
- Offer fluids and nourishment frequently, keep water within reach
- Provide directional activity
- Decrease stimuli and noise
- Provide change of position, up to chair, ambulation
- Have patient wear glasses and/or hearing aides
- Activate bed alarm

TYPES OF PHYSICAL RESTRAINTS

1. Mummy restraint
2. Elbow restraint
3. Extremity restraint
4. Abdominal restraint
5. Mitten or finger restraint

Mummy restraint

- It is a short-term type of restraint used on infants and small children during examinations and treatment of head and neck. It is used to immobilize the arms and legs of the child for a brief period of time



Elbow restraint

- This restraint is used to prevent flexion of the elbow and to hold the elbow in an

extended position so that the infant cannot reach the face

- Plastic elbow restraint, elbow cuff and well padded wooden splint can also be used



Extremity restraint

- It is used to immobilize one or more extremities. One type of extremity restraint is clove-hitch restraint which is done with gauze bandage strip (2 inches wide) making figure-of-eight and knot it
- The end of the gauze to be tied to the frame of the crib/bed
- This restraint should be used with padding of wrist or ankle
- Precautions to be taken to prevent tightening of the bandage



Abdominal restraint

- This restraint helps to hold the infant in a supine position on the Bed



Mitten or finger restraint

- Mitts are used for infants to prevent self-injury by hands in case of burns, facial injury or operations, eczema of the face or body
- Mitten can be made wrapping the child's hands in gauze or with a little bag putting over the baby's hand and tie it on at the wrist



NURSES ROLE

- Monitor a patient in restraint every 15 minutes for:
  - Signs of injury
  - Circulation and range of motion
  - Comfort
  - Readiness for discontinuation of restraint
- Documentation in every 2 hours about Patient condition.

Costing Sheet

Sl. No.	Name of the components required	Range	Quantity	Cost (Approax.)	Value in the near by store (Rs.)
Rs.	Valaue in the near by store (Rs.)				
1.	Sheet (cotton)	1.5m x 1.5 meter	1	150	175
2.	Elbow restraints	6 – “4”	1	400	500
		8.5 – “6”	1	450	550
3.	Limb restraints	12”,	1	275	350
		15”	1	300	400
		20”	1	150	175
4.	Mittens			150	175

CONCLUSION

Hence the application of mummy restraint, elbow restraint, extremity restraint, and mitten restraint demonstrated in the class room successfully.

Video Suggestions

S.no	Title	Link
1	Restraints	https://youtu.be/25qx36FvloU

Simple Assessments

- Define restraint
- Enlist the types of restraints
- Explain mummy restraints

Student project	Draw the steps of mummy restraint in the chart. Preparation of splint.
Guest lecture suggestion	Nursing staff from paediatric unit.
Field Visit	Hospital – Paediatric & neonatal unit.

Practical 9

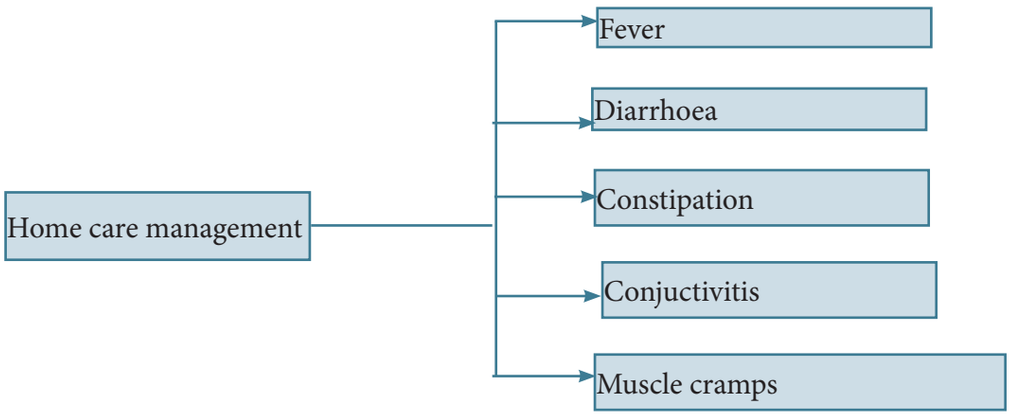


HOME CARE MANAGEMENT

LEARNING OBJECTIVE

- To describe the principles of home care management
- To demonstrate the preparation of ORS.
- To explain the home case management for minor problems.

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT



TOOLS AND EQUIPMENTS REQUIRED

ORS PREPARATION:

Activity	Sl. No.	Name of the components required	Range	Quantity
ORS	1.	Sugar	250 GMS	6 TSP (30 GMS)
	2.	Salt	100 GMS	½ TSP
	3.	Water	1 LTR.	1 LTR.
	4.	Bowl	30 X 30 CMS	1

DEFINITION:

Home health nursing is a nursing speciality in which nurse provides multidimentional home care to patients of all ages.

Principles:

- Build a good rapport to family
- Collect information about the family size, occupation, education, religion, customs etc
- Identify the problems.
- Discuss the problems with the family members
- Guide them to carry out problems

1. **Fever:** When a person body temperature is too warm, he may have fever. Fever itself is not a sickness. However high fever can be dangerous, especially in a small child. The normal body temperature is 98.4^0 F or 37^0C. More than 100^0F is consider as fever.



Home management:

- Uncloth the patient, if it is an infant uncover the entire body
- Ventilate them with fresh air
- Apply cold compress wet sponge
- Provide lot of water or juices
- Administer tablet paracetamol according to the weight of the person
- Check temperature every half an hour
- If not reduced refer the child to health centre

2. **Diarrhoea:** When a person has loose or watery stools, it's known as diarrhoea. Lack of water is the body due to diarrhoea is called dehydration.

Signs of dehydration:

Thirst is often a first signs of dehydration

- Diminished urination
- Dark yellow urine
- Sudden weight loss
- Dry mouth
- Sunken eyes
- Loss of elasticity of the skin

Home management:

- Give lots of liquids to drink and give rice porridge
- Food intake – as soon as the sick child or adult will accept food. Give frequent feeding of food what he/she likes and accepts
- For babies feed breast milk often
- Give sips of ORS every 5 minutes
- Fluid requirements – For adults 3 litres of water per day, For child 1 litre per day
- Give boiled smashed potato and oatsmeal or well cooked food.

ORS Preparation

Boiled water litre (5 cups)

1 cup = 200 ml

Sugar - 6 tsp (1 tsp = 5gm)

Salt - ½ tsp

Solution of Water, Salt and Sugar to be mixed properly till sugar content dissolved.

3. Constipation:

- A person who has hand stools and has not have a bowel movement for three or more days is said to be constipated causes

Causes:

- Poor fluid intake
- Poor fibre intake
- Less intake of fruits, green vegetables and green leaves.
- Lack of physical activity

Home Management:

- Drink more than 3 litres/day
- Eat more fruits and vegetables rich in natural fibre (whole grain, bread, carrots, raisin, nuts, pumpkin, wheat bran)
- Exercise
- Regularise bowel pattern

4. Conjunctivitis: Inflammation of the membrane covering the surface of the eye ball. It can be a result of infection or irritation of the eye. It also known as pink eye.

Home management:

- To relieve the discomfort give warm or cold compress. Apply moist wash cloth or hand towel on the closed eye lids three or four times a day
- Avoid contact lenses
- Rinse the eye with warm salt water
- Avoid rubbing the eye
- Avoid touching the uninfected eye

5. Muscular cramps: A muscle cramp is an involuntarily and forcibly contracted muscle that does not relax

Causes:

- Injury
- Vigorous activity
- Rest cramps
- Dehydration
- Body fluid shift
- Low blood calcium or magnesium
- Low potassium

Home Management:

- Dry heat over the area - E.g. Hot water bottle, heated bran (or) application sand
- Food rich in minerals like calcium, potassium and magnesium
- Stop the activity and relax the muscle
- Massage the area gently
- Drink adequate fluid

Advantages of Home health care:

- Home health care offers many advantages to patients, particularly older adults.
- Patients recuperating from acute illness / accident recover faster in a home environment.
- Home can gives an older adult a some of independence by offering an important measure of control over day to day events.
- Home care improves quality of care provided and increased patient satisfaction.
- Home care is of low cost.

Disadvantages of home health care:

- ❖ The person who is simply too ill or complex to be cased at hospitals.
- ❖ Home environment may be unsafe.
- ❖ There is shortage of home can provides (especially nurses).

Costing Sheet

Sl. No.	Name of the components required	Range	Quantity	Cost (Approax.) Rs.	Valaue in the near by store (Rs.)
1.	Sugar	250 gms	6 tsp (30 gms)	25	30
2.	Salt	100 gms	½ tsp	10	10
3.	Water	1 ltr.	1 ltr.	-	-
4.	Bowl	30 x 30 cms	1	350	400

Conclusion :

Hence ORS preparation demonstrated in the classroom properly.

Video Suggestions

S.no	Title	Link
1	Home care management	https://youtu.be/IduX0NHzFDo

Simple Assessments

- What are the principles of home care management?
- Write Home care management for fever.
- Write Home care management for constipation..

Student project	Enlist the contents from ORS packed and describe the uses of contents
Guest lecture suggestion	Nursing staff from PHC (Primary Health Centre)
Field Visit	Primary Health Centre

Practical 10

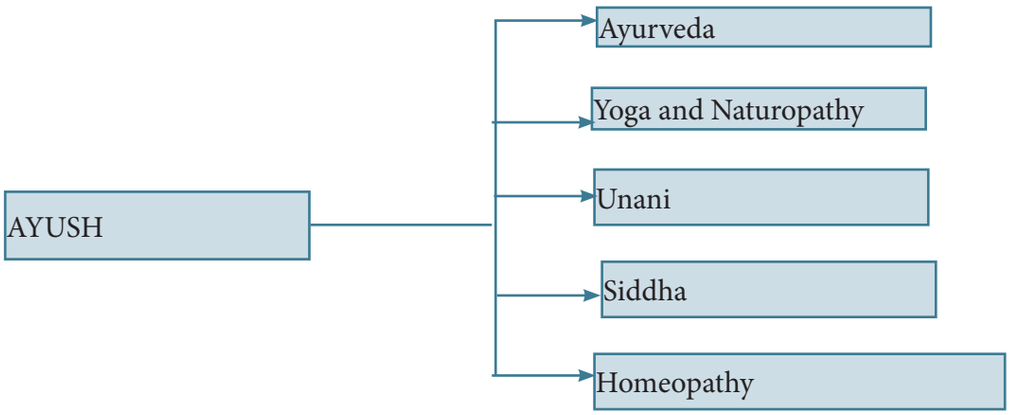


AYUSH

LEARNING OBJECTIVE

- To describe the expansion of AYUSH.
- To demonstrate the preparation of Nilavembu Kasayam and basil Tea preparation.

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT



TOOLS AND EQUIPMENTS REQUIRED

Activities	Sl. No.	Name of the components required	Range	Quantity
Nilavembu Kudineer	1.	Nilavembu Kudineer powder	50 gms	3 tsp
	2.	Honey	50 ml	1 tsp
	3.	Water	200 ml	200 m
Basil Tea	1.	Milk	500 ml	1 cup
	2.	Water	500 ml	1 ½ cup
	3.	Tea powder	50 gms	2 tsp
	4.	Tulsi leaves	-	15 – 10
	5.	Ginger	50 gms	Small piece
	6.	Sugar	100 gms	2 tsp

DEFINITION:

The Ministry of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy, abbreviated as AYUSH

Objectives

The Department of AYUSH has the following objectives:-

- ❖ Delivery of AYUSH Services
- ❖ Human Resource Development in AYUSH
- ❖ Promotion and Propagation of AYUSH Systems
- ❖ Research in AYUSH
- ❖ Conservation and cultivation of medicinal plants
- ❖ Effective AYUSH Drugs Administration

Ayurveda

Ayur' means age and 'Veda' denotes knowledge. Ayurveda defines knowledge about age or the knowledge which describe age.

Yoga

The literal meaning of the Sanskrit word Yoga is 'Yoke'. According to Maharishi Patanjali (The Father of Yoga), Yoga is the suppression of five modifications of the mind.

Naturopathy

Naturopathy is an art and science of healthy living and a drugless system of healing. The morbid matter theory, concept of vital force and other concepts upon which Naturopathy is based are already available in old texts.

Unani System of Medicine

Unani system originated in Greece. The foundation of Unani system was laid by Hippocrates. In India, Unani System of Medicine was introduced by Arabs and Persians sometime around the eleventh century.

Siddha System of Medicine

Siddha system is one of the oldest systems of medicine in India. The term Siddha means achievements and Siddhars were saintly persons who achieved results in medicine. According to this system the human body is the replica of the universe and so are the food and drugs irrespective of their origin.

Homoeopathy

Homoeopathy is based on the natural law of healing- "Similia Similibus Curantur" which means "likes are cured by likes". It was given a scientific basis by Dr. Samuel Hahnemann (1755-1843) in the early 19th century.

1. Nilavembu Kashayam

Definition

Nilavembu is a herbal tonic that is made from herbs that helps to boost immunity and support overall body health.

Benefits:

- Helps to manage blood sugar level and cancer.
- Reduces risks of fever
- Helps in Arthritis, Ulcer
- Supports Immunity, Digestion, skin problems

Ingredients:

- Andrographis paniculata (Nilavembu)
- Vetiveria zizanioides (Vettiveru)
- Plectrathus vettiveroides
- Santalum album (Saudar)
- Trichosanthes dioica (Pointed gourd)
- Cyperus rotundus (Purple Nut)
- Zingiber officinale (Ginger)
- Piper nigrum (Pepper)
- Mollugo cerviana (Papataka)

AYUSH diverts us to use Nilavembu Kashayam as 60ml twice a day after food.

- Paediatric age group (<12 years)
  < 5 years – 5 ml
  5 – 12 years = 10 ml
- Adolescents (13-18 years) – 30 ml
- Adult (19-65 years) 60-90 ml

- Geriatric (>65Years)

Procedure:

- In a saucepan – Add 2 cups of water (240 ml)
- Add 1 teaspoon of Nilavembu powder (Mixture of a powder)
- Simmer for 15 mins on medium flame
- Strain the kashayam using a strainer
- The kashayam is ready to drink as per the Guidelines of AYUSH
- Add Jaggery or honey to taste.

2. Basil Tea Preparation

Definition

Basil is an aromatic shrub and known as mother medicines of nature and "The Queen of Herbs" of all the herbs used with in Ayurveda, basil is prominent and scientific research is now confirming it's beneficial effects.

Benefits

- Natural Immunity Booster
- Reduces fever
- Reduces respiratory disorders
- Anti-cancerous agent
- Reduce gastrointestinal problem

Ingredients

- Milk – 1 cup
- Water – 1½ Cup
- Tea leaves – 10 to 15 leaves
- Ginger – ½ inch size
- Sugar – 2 tsp.
- Cardamom – 2

Preparation

- Boil the water in a vessel
- Add crushed basil leaves, ginger, cardamom and tea leaves
- Allow it to boil for a minute
- Now add milk to boil and strain it
- Add sugar and serve it

Costing Sheet

Activities	Sl.No	Name of the components required	Range	Quantity	Cost	Value in the near by store (Rs.)
Nilavembu Kudineer	1	Nilavembu Kudineer powder	50 gms	3 tsp	60	70
	2	Honey	50 ml	1 tsp	40	50
	3	Water	200 ml	200 m	-	-
Basil Tea	1	Milk	500 ml	1 cup	25	30
	2	Water	500 ml	1 ½ cup	-	-
	3	Tea powder	50 gms	2 tsp	45	50
	4	Tulsi leaves	-	15 – 10	-	-
	5	Ginger	50 gms	Small piece	20	25
	6	Sugar	100 gms	2 tsp	10	10

CONCLUSION

Hence nilavambu Kudineer and basil tea prepared well in the demonstration room.

Video Suggestions

S.no	Title	Link
1	Ayush	https://youtu.be/-gqhdydzmIk

Simple Assessments

- Write the expansion of AYUSH.
- Write about Naturopathy.

Student project	Prepare album for medicinal plant.
Guest lecture suggestion	Doctor from Siddha Hospital
Field Visit	Visit to national Siddha Hospital.

REFERENCES

1. Park J.E & park, Text Book of preventive and social medicine, Jabalpur, BB publishers, 1989 community
2. Brunner & Siddarth, Text book of Medical and Surgical Nursing J.B Lippincott. Co., Philadelphia, 2000

WEB LINKS

- https://www.mdpi.com
- https://www.nchi.nim.n:h.gov
- https://www.msdmanuals.com
- https://www.researchgate.net

Sl. No.	PROJECT WORK
1.	Do Simple Dressing
2.	Prepare Diet Plan For a Diabetic Person
3.	Prepare a low Calorie Diet Plan - 1200/k cal
4.	Prepare a Diet Menu For 2800 k cal
5.	Prepare ORS at Home
6.	Prepare Whey Water
7.	Prepare Ragi Porridge
8.	Do Mummyfy For a New Born Child & Write the Observation
9.	Visit a Nearest Hospital and Write the Report
10.	Participate the Pulse Polio Camp and Write the Report

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VOCATIONAL - Class XII
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