وزارة التعليم العالي والبحث العلمي
الجامعة التقنية الجنوبية
المعهد التقني العمارة
قسم التمريض

الحقيبة التدريسية لمادة اساسيات التمريض

Fundamental of Nursing

المرحلة الأولى

مدرس المادة
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الفصل الدراسي الاول

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Vocabulary Table for The Fundamental of Nursing Subject

Week	Theoretical Topics
1	**Definition** (fundamental of nursing, nursing, nurse, health, disease, patient, client, hospital) fields of nursing, role & responsibilities of nurse.
2	**Admission & discharge** of patient from hospital, Chart report, health record, nurse note (observations) of report. **Nursing process** (assessment, nursing diagnosis, planning, implementation, evaluation).
3	**Vital signs,** definition of temperature, type of check temperature, definition of fever, causes, signs & symptom, nursing care of it, define the pulse, qualities of pulse factors affecting of pulse, site of taking pulse, define of respiration, definition of blood pressure. Definition of diastolic & systolic pressure, the factors that affected.
4	**Administration OF medication**, define of drug, Route of administration, Factors affecting on the drug activity, type of administration of medication and injection {I.M.I.V.,S.C.I.D,} Advantage& disadvantage
5	**Intravenous infusion,** Types of fluid, Indication &contraindication &role of Nurse in giving intravenous infusion.
6_7	**Dressings and Bandages**, Advantage of dressing, Types of dressings, Bandages are used to **Wounds & Bleeding**, definition of wound, care and healing process, types of wound, phases of wound healing, type of wound exudate, function of exudate, factors affecting wound healing.
8	**Suture**: Suture Classification, suturing techniques, Equipment's, Principles of suturing, Suture removal,
9	**Body mechanies**, Body position, principle of body Mechanics, importance of exercises, Common Dangers of Immobility.
10	**Asepsis**, Infection, stage of infection, Types of infection, ***Disinfection and sterilization*** surgical sterilization, Medical sterilization, kind of disinfectant and sterilization of surgical equipment, principle of Dressing
11	**Body Hygiene**, Purpose, Bathing ***Pressure Ulcer*** (Bed sores), Causes of bed sores, Areas of pressure sores, care and Prevention
12	**Blood transfusion** role of Nurse in giving blood transfusion, indication& contraindication, the goal of blood transfusion.
13	**Administration of 02,** Types of giving 02, the goals, nursing intervention, equipment, Artificial respiration
14	**Enteral feeding**: types of feeding tube, feeding tube indications & contraindication, the goals of it, nursing intervention, techniques, Equipment's
15	**Definition of urinary catheterization**, tracheotomy, pre-post-operative care. Complications of operative, nursing care of cardiac arrest and complication

Objective of the study Fundamental of Nursing Subject

General objectives

The student can be able to know the general information about Nursing.

Specific objectives

1. Defines nursing, nurse, chronic and acute diseases.
2. Understands the roles and functions of the nurse in patient care and the importance of health promotion.
3. Measures vital signs, temperature, respiration, blood pressure, and how to document the nursing.
4. Apply the physical examination of patients and the basic rules of personal protective equipment and prevent infection.
5. Performs nursing procedures: evaluation, diagnosis, nursing, application, and evaluation of nursing procedures.

Target group: Second-Stage students in the Nursing Department

Educational technologies used:

1. board and pens
2. Interactive whiteboard
3. Data show
4. Laptop

First Week

Learning Objective

The student should be able to identify

1. To Defines Nursing and Nurse
2. To Identify the Qualifications of the nurse
3. To Identify the Health and Factors That Affecting Health
4. To Determine the Basic Human Needs
5. To Determine the Factors That Affect Healthy Environment
6. To Identify the hospital and Determine Functions of hospitals

Lecture Duration: **2 hours of theory + 4 hours of practice**

Activities used

1. Classroom Interactive Explanation
2. Brainstorming Techniques Questions
3. Group Assignment

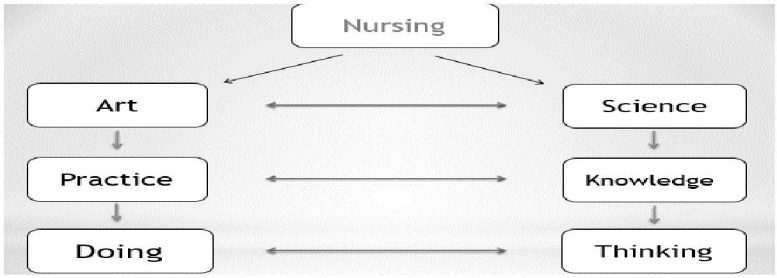
Evaluation Methods:

1. Immediate feedback
2. Involving students in self-assessment (correcting their own mistakes).
3. Solving the quiz questions as a class activity at the end of the lecture.

Fundamental of nursing

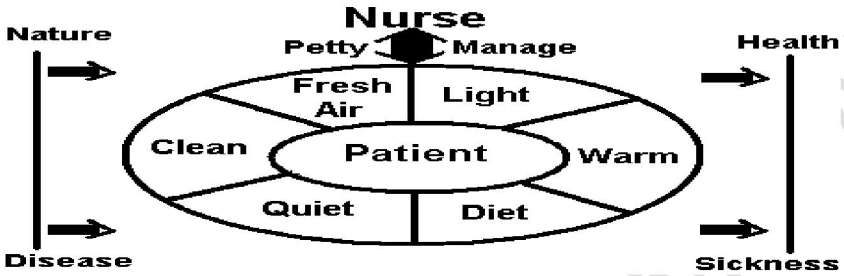
Nursing (Virginia Henderson 1897 – 1996)

The assisting individual or (family, group and community), sick or well, in the performance of those activities contributing to health, its recovery.



Florence Nightingale (1820-1910)

Act of utilizing the environment of the patient to assist him in his recovery.



Nurse

A person who has completed a basic nursing education program and obtained a certificate to nursing practice.

Qualifications of the nurse:

1. He has good experience, mental and physical health.
2. To be an educated, integrated personality and effective communication with the patient.
3. High morals and take responsibility and confidence
4. Good power of observation and manual dexterity.
5. Good memory for details, critical thinking and problem solving.
6. Providing nursing care to the patient not on the basis of gender, color or religion.
7. Speak in a calm, clear and pleasant voice.
8. Normal hearing ability and a willingness to listen.
9. A sense of discipline and responsibility.
10. An optimistic attitude toward life and success.

Health A state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity.

Factors that affecting health:

1. Environmental factors.
2. Genetic inheritance
3. Lifestyle and Personality
5. Growth and development factor.
6. Socialization Customs, Culture /Beliefs.
7. Infections, Chronic disease, Medications and Treatments.

The Basic Human needs:

1. Good and healthy environment.
2. Access and use of health services.
3. Healthy and good nutrition and fluids.
4. Good relationship and social interactions.
5. Personal care and hygiene.
6. Activities, Relaxation, Sleep and Rest.
7. Mental, emotional and spiritual support.

Factors that affect healthy environment:

1. Healthy housing (must have clean and safe water, lightening and ventilation.

2. Geology and weather.

3. Socioeconomic factors such as crowding, and the quality of health care services

4. Your workplace is healthy and safety.

Hospital is an institution for the care, cure and treatment of the sick and wounded the study of the diseases, and for the training of the doctors and nurses.

Functions of hospitals

1. Patient Care.
2. Diagnosis and treatment of disease
3. Health promotion and disease prevention.
4. Medical and nursing scientific researches.
5. In-service education.

1. Classification of hospitals:

1. General hospital.
2. Special hospital, as mental, surgical
3. Private hospital.
4. Teaching hospital.

2. Administration of hospitals:

1. Governmental.
2. Non-governmental or private.

3. Nursing department:

a. Nursing manager
b. Assistant manager nurses.
c. Head Nurse.
d. Nurse of patient's units
e. The nurse responsible for training and educating the nursing staff

4. The clinical department:

a. Medical wards. b. Surgical ward.

5. The medical therapy departments:

1. Pediatrics 2. Gynecology
3. Cardiology 4. Pharmacy.
5. Psychiatry 6. Dental service department.
7. X-ray department. 8. The dietary department.
9. Clinical laboratory 10. The medical social service department.

Patient: A person who needs assistance and medical treatment from a doctor or hospital to achieve health.	
Client: is a person who needs advice or primary health care services from another person qualified to provide that service.	
Patient unit: Is the place that the patient occupies when he enters the hospital, it contains the following (Bed, mattress, blanket, sheets, urinal, wheelchair, jug).	

The basic needs of the patient:

1. Physiological and essential needs (air, water, food, reproduction, rest, sleep, exercise)
2. Protective and Safety needs (protection from harm or injury, security, health promotion)
3. Social love needs (affection, friendship, intimacy sense of connection)
4. Avoid environmental dangers.

Second week

Learning Objective

The student should be able to identify

1. To Defines the Hospital Administration and Admission
2. To Determine the Objectives admission of patient
3. To Describe the Medical record or Medical Chart and The Goals
4. To Describe the Data Collection and Types of Data Collection
5. To Determine the Information recorded by a nurse
6. To Defines the Nursing process and The difference between medical diagnoses and nursing diagnoses
7. To Determine the Objectives of nursing procedures (Assessment, diagnosis, planning, implementation, and evaluation).
8. To Identify the Benefits of Nursing Process

Lecture Duration: **2 hours of theory + 4 hours of practice**

Activities used

1. Classroom Interactive Explanation
2. Brainstorming Techniques Questions
3. Group Assignment

Evaluation Methods:

1. Immediate feedback
2. Involving students in self-assessment (correcting their own mistakes).
3. Solving the quiz questions as a class activity at the end of the lectur

Admission & Discharge of Patient from Hospital

Hospital Administration

Coordinates, and implementation the hospital policy, programs and identification of requirements, placements and development of staff.

Admission: Means an individual has been hospitalized for at one night or more because the individual is very ill requires one day nursing care or receives medications.

Objectives admission of patient:

1. To assess the clinical status of the patient.

2. Reducing stress and fatigue of patients and provide comfortable as possible in his new environment.

3. To complete the medication that the patient need in order to become well-being.

4. Providing management not because he is patient or client but because he is human.

Medical record or medical chart: is a systematic documentation of a patient's individual medical history and care.

The goals

A. Healthcare providers assist in providing and documenting medical and nursing care.

B. It has an active role and basis for planning patient care.

C. Documents communication between the health care provider and any other health professional contributing to the patient's care.

D- Legal assistance and protection of health care providers and the patients.

Data collection: it is the process of gathering information about a client's health status.

Type of data collection:

Objective data(signs): Observable and measurable data that can be seen, heard, or felt by someone other than the person experiencing them

E.g., elevated temperature, skin moisture, vomiting

Subjective data(symptoms) Information perceived only by the affected person

E.g., pain experience, feeling dizzy, feeling anxious

Contents of chart: Types of sheets:

1. Admission sheet identifying information, Insurance information, Contact information (name, age, sex, job, marital status, etc.)
2. Graphic sheet (vital signs sheet).
3. Medical history sheet.

History of present illness (HPI)

- Past medical history (PMH)
- Physical examination (PE)
- **Assessment, including differential Diagnosis**

Plan for evaluation.

4. Intake and output sheet.
5. Treatment sheet.
6. Physical examination sheet.
7. Nurses notes sheet.
8. Laboratory and x-ray sheet.
9. Operative permit.
10. Anesthesia sheet.
11. Operative sheet.
12. Discharge sheet.

Information recorded by a nurse about the patient in the hospital:

1. Personal information includes name, age, religion, gender, marital status, occupation, telephone number and address of the closest person.

2. Physician recommending admission

3. Chief complaint “What motivates the patient to enter the hospital.

4. Observation of vital signs (temperature, pulse, respiration and pressure).

5. Medical history and surgical history.

6. The results of the laboratory and test of "urine, blood, sputum, feces".

7. Family history, Social history and Habits or Customs

8. Medication taken and medication allergies.

9. Physical examinations

10. Immunizations in case of children, growth and development history.

Nurse note (Observations)

1. General reaction of patient e.g. allergy, anxiety.

2. Hygiene (skin, hair, mouth).

3. Diagnosis and care plan.

4. Determine any changes to the patient's condition

5. Monitor urine, stool and menstruation.

6. The time of taking the medication for the patient.

Discharge from hospital: Objectives of Discharge Planning

1. Preparing a comprehensive post-hospital nursing care plan.

2. Understand and educate the patient and his family about his illness and its impact on his lifestyle.

3. Encourage the patient to eat healthy and good diet.

4. Recognize side effects, instruction and schedule drug treatment.

5. Coordination with home health care services.

Nursing process

It is a critical thinking process that professional nurses use to provide individual, families and community care and enhance human functions and responses to health and disease.

Is a systematic method of providing and planning nursing care for patient

The difference between medical diagnoses and nursing diagnoses

	Medical Diagnoses	Nursing Diagnoses
1	Identify and focuses on disease, injury.	Focuses on potential unhealthy responses to health and illness.
2	Focuses on etiology and treatment.	Focuses on nursing intervention for patient care.
3	Teaching the client about treatment.	Teaching the client self-care.

Objectives of nursing procedures

1. To identify a client's health status & **actual** or **potential** health care problems or needs.
2. To establish plans to meet the specific needs.
3. To provide specific nursing interventions to meet those needs.

1. Assessment: The nurse collects comprehensive data sources in order to diagnose an actual and potential health problem for the patient

The patient is the **primary or direct source**

The family members, friends, records, and reports are the **secondary or indirect source**

Methods of data collection

1. Observation: It is collection of information by using the senses of **vision**, **listening** and **watching behavior**.

2. Interview: This method communication to obtain information about the patient involves **presentation** or **verbal stimuli** and **reply in terms of oral-verbal responses.**

3. Examination: The nurse uses physical examination techniques to detect health problems.

2. Diagnosis

In this stage, nurses use critical and effective thinking skills to identify patient or client problems and analyzes the assessment data to determine the nursing diagnosis or issues.

Nursing diagnosis is the actual situation, health promotion and risk for the patient.

1. An actual diagnosis is a client problem that is present at the time of the nursing assessment.
2. A health promotion diagnosis relates to clients' preparedness to improve their health condition.

1. **Problem (P)**: statement of the client's health problem.
2. **Etiology (E):** causes of the health problem
3. **Signs and Symptoms (S)**: characteristics manifested by the client.

3. Planning

The nurse develops a plan that record strategies and alternatives to achieve the expected outcomes, depending on the information obtained from the patient.

1. Determining goals for nursing action and formulating the nursing care plan design nursing interventions.
2. Priority includes appropriate decision-making and problem solving.
3. Establishing expected outcomes of the nursing planning team

4. Implementation

Are all nursing performance activities planned to achieve determined goals **while exercising** the client's cognitive and interpersonal skills and assessing the client's condition **before**, **during** and **after** a nursing intervention.

Nursing implementation activities include:

1. Reassessing the patient or client.
2. Implementing the nursing interventions
3. Documenting nursing activities and patient response.

5. Evaluation

It is the effect or result of the action on the patient's condition.

Evaluation is a planned, ongoing, purposeful activity in which the nurse determines.

(a) The client's progress toward achievement of goals/outcomes

(b) The effectiveness of the nursing care plan.

The evaluation includes;

1. Comparing the data with desired outcomes.
2. Continuation, modifying, or termination the nursing care plan.

Benefits of Nursing Process

1. Provides a systematic method for providing care.
2. Increases care quality
3. Enhances nursing efficiency by standardizing nursing practice.
4. Facilitates documentation of care.
5. Provides a unity of language for the nursing profession.
6. Is economical.
7. Emphasize the independent function of nurses.

Third Week

Learning Objective

The student should be able to identify

1. To Defines the Vital Signs
2. To Determine the Assess Vital Signs
3. To Describe the Vital Signs, Temperature, Pulse, Respiration, Blood pressure.
4. To Describe the Methods of Measuring Body Temperature
5. What are the Nursing Interventions for patient with Fever
6. To Determine Pulse Measurement and Pulse Taking Sites
7. To Determine Blood Pressure and Factors Maintaining Normal Arterial Pressure and Blood Pressure Stages

Lecture Duration: 2 hours of theory + 4 hours of practice

Activities used

1. Classroom Interactive Explanation
2. Brainstorming Techniques Questions
3. Group Assignment

Evaluation Methods:

1. Immediate feedback
2. Involving students in self-assessment (correcting their own mistakes).
3. Solving the quiz questions as a class activity at the end of the lecture.

Vital Signs

They are measurements of the most important functions of the human body (which is a reference to vital organs), such as the brain, heart and lungs, and recognition the physiological status of the body.

All vital signs can be observed, measured, and monitored.

When to Assess Vital Signs

1. Any person in emergency status.
2. When admission to any healthcare institution and clinic.
3. Any time there is a change in the patient's condition.
4. Pre and post-operative care.
5. Pre and post activity that may increase risk.
6. Pre and post administering medications that affect cardiovascular or respiratory functioning.

Vital Signs

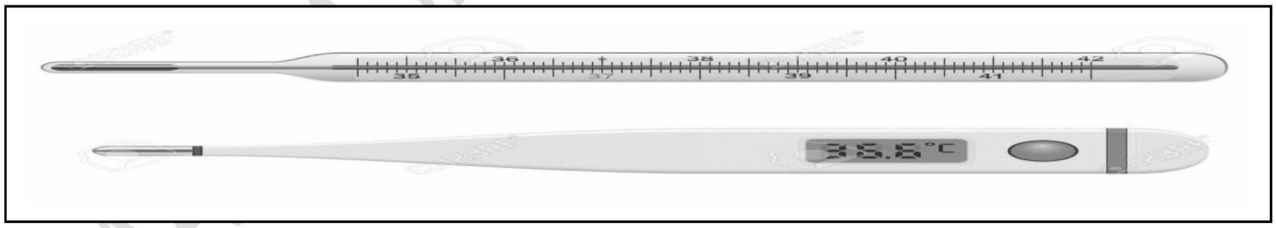
1. Temperature. 2. Pulse. 3. Respiration. 4. Blood pressure.

1. Body temperature

The normal temperature in normal physiological conditions is constant.

It is one an important vital signs in the diagnosing of some pathological conditions.

The normal degree of body temperature about 37.2°C.



Factors affecting body temperature

1. Food intake. 2. Age. 3. Gender . 8. Disease, Illness
5. Exercise and activity 6. Hormone (Thyroxin, Epinephrine).
7. Medications (drugs). 4. Environmental change

Methods of measuring body Temperature

1. Orally method. 2. Axillary method. 3. Rectal method.

Pyrexia (fever) called hyperthermia: any elevation in body temperature above the normal level (37°C), as response of a disease or illness.

1. Oral method

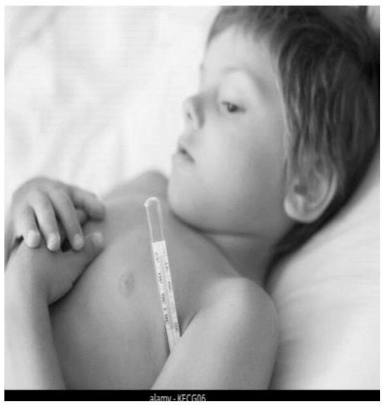
It is to measure body temperature by place thermometer under the tongue for (3–5 min).

1. Taken in the mouth, near the blood vessels under tongue.
2. Most common, convenient, and comfortable method.
3. Patient cannot eat, drink, or smoke for at least 15 min before measuring.

Contraindications of oral thermometer

1. Infant and children
2. Unconscious patients
3. Patient with oral cavity inflammatory disease or oral surgery.
4. Persistent frequent coughing
5. Patient who breathe through their mouths.
6. Psychiatric patients

Axillary method:



Measure temperature with a thermometer in the axillary region for 5-10 minutes. It is used only when there are contraindications to the oral and rectal method.

Note: Add (0.5) degree when recording the result with before writing the method of measuring the temperature.

Rectal method:

Rectal temperature. Is more accurate than oral or axillary temperature.

Procedure:

Check thermometer to see that reading is down to 35°C.

A person's temperature is measured by inserting a thermometer with a lubricant added to the thermometer into the rectum through the anus.

This method regards as the most accurate means of temperature taking, but some may consider it to be invasive or humiliating procedure.

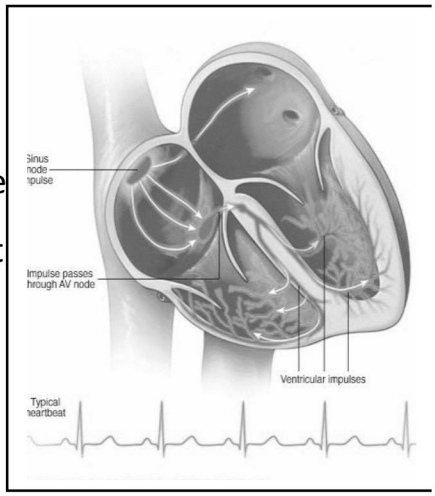
For 2-3 minutes, remove and clean thermometer and (Iodine + Alcohol) read and record temperature.

Note: minimize 0.5°C from the recorded temperature.

Nursing Interventions for patient with Fever

1. Monitor vital signs.
2. Assess skin color and temperature.
3. Monitor WBCs count.
4. Remove excess clothes when the patient feels warm, but provide extra warmth when the patient feels chilled.
5. Measurement fluid intake and output.
6. Reduced physical activity to limit heat production.
7. Provide oral hygiene to keep the mucous membranes moist.
8. Use cold compresses ice and provide cool air.

2. Pulse



Wave is generated at the base of Aorta due to pumping ofblood by heart, spreading along the arterial wall to the peripheral arteries can be more easily felt in arteries that close to the skin. The heart rate of the average healthy adult male is approximately 60-100 beats / minute.

Pulse Measurement

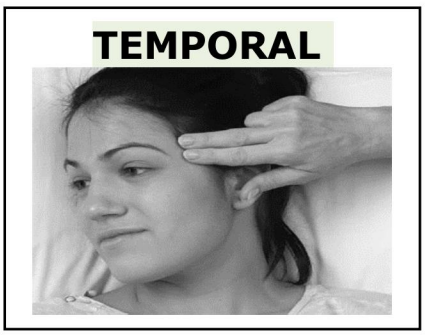
Is usually called your heart rate, which is the number of times your heart beats per minute (beats per minute).

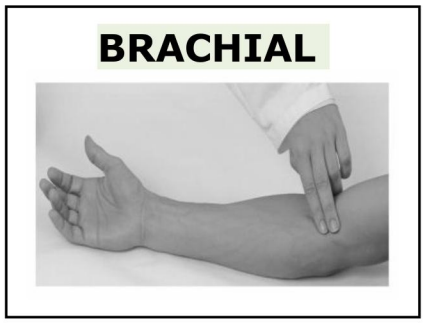
Note any changes in heart rate or rhythm, weak pulse and hard or soft blood vessel due to heart disease.

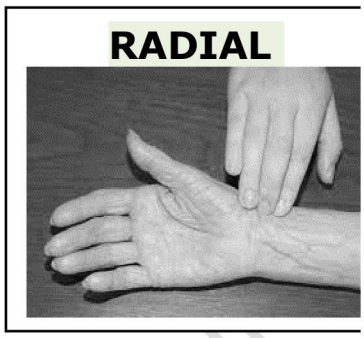
Notes in taking pulse:

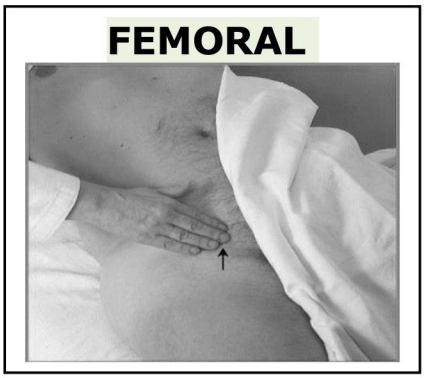
1. Pulse rate.
2. Rhythm of the pulse.
3. Volume of the pulse.
4. The arterial wall.

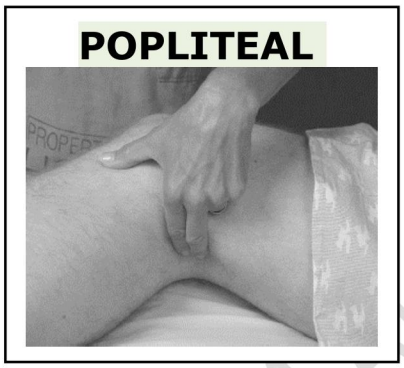
Sites of Taking Pulse:

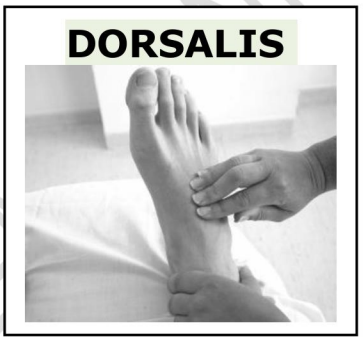












Taking a pulse (heart rate)

Heart rate of times per minute,

Obtain an estimate of the quality of the heart action.

Management nursing

1. Place 2 fingers of your other hand on this artery.

2. Do not use your thumb because it has its own pulse that you may feel.

3. Count the beats for 30 seconds; then double the result to get the number of beats per minute.

Tachycardia: the pulse rate is over 100 beats/minute.

Bradycardia: the pulse rate is below 50 beats/minute.

Arrhythmia: irregular pulse rhythm.

3. Blood pressure: (BP)

Blood pressure is a measure of the force with which the heart muscle contracts to pump blood through the arteries to all parts of the body.

1. The maximum pressure is called systolic pressure is peak pressure in the arteries, which occurs near the end of the cardiac cycle when the ventricles are contracting.

2. The minimum pressure is called diastolic pressure is minimum pressure in the arteries, which occurs near the beginning of the cardiac cycle when the ventricles are filled with blood.

Normally body blood pressure 120/80 systolic/diastolic.

Factors maintaining normal arterial pressure:

1. Cardiac output.
2. Peripheral vascular resistance.
3. Volume of circulating blood.
4. The viscosity of blood.
5. The elasticity of the vessel walls.

Blood Pressure Stages

Blood Pressure Category	Systolic mmHg		Diastolic mmHg
Low Blood Pressure	Less than 90	or	Less than 60
Normal Blood Pressure	90 - 119	and	60 - 79
Prehypertension (High Normal)	120 - 139	or	80 - 89
Hypertension Stage 1	140 - 159	or	90 - 99
Hypertension Stage 2	160 or higher	or	100 or higher
Hypertensive Crisis (Medical Emergency!)	Higher than 180	or	Higher than 110

Measurement of Blood pressure.

Equipment:

1. Sphygmomanometer.
2. Stethoscope.

Steps:

1. Choose a quiet place.
2. Wait two hours after a main meal.
3. Do not drink coffee or smoke 30 minutes before the measurement.
4. Avoid any activities before the measurement and empty the bladder and intestines if necessary.
5. Sit quietly for 5 minutes before taking the measurement.
6. If possible, don't take the measurement if you feel uncomfortable or under stress.
7. Take off the tight clothing above your upper arm.

4- Respiration

Is the process by which oxygen and carbon dioxide (Co2) are interchanged, normally adult breath's (15-20 times/ minute).

External respiration: refers to oxygen and carbon dioxide exchange across the respiratory membrane in the lungs.

Internal respiration occurs in the metabolizing tissues, where oxygen diffuses out of the blood and carbon dioxide diffuses out of the cells.

What is the respiration rate?

1. The respiration rate is the number of breaths a person takes per minute.
2. The rate is usually measured when a person is at rest and simply involves counting the number of breaths for one minute by counting how many times the chest rises.
3. Respiration rates may increase with fever, illness, and with other medical conditions.
4. When checking respiration, it is important to also note whether a person has any difficulty breathing.
5. Normal respiration rates for an adult person at rest range from 15 to 20 breaths per minute.
6. Respiration rates over 25 breaths per minute or under 12 breaths per minute (when at rest) may be considered abnormal.

Polypnea: increased rate of respiration.

Hyperpnea: increased depth of respiration.

Dyspnea: difficult breathing.

Apnea: no breathing.

Fourth Week

Learning Objective

The student should be able to identify

1. To Defines the Drugs and Uses of Drugs
2. What are the Rights of Medication Administration
3. 7. To Determine the Basic principle for the nurse in drugs administration
4. To Describe the Methods of Administration
5. To Determine the Information recorded by a nurse
6. To Defines the Nursing process and The difference between medical diagnoses and nursing diagnoses
7. To Determine the Objectives of nursing procedures (Assessment, diagnosis, planning, implementation, and evaluation).
8. To Identify the Benefits of Nursing Process

Lecture Duration: 2 hours of theory + 4 hours of practice

Activities used

1. Classroom Interactive Explanation
2. Brainstorming Techniques Questions
3. Group Assignment

Evaluation Methods:

1. Immediate feedback
2. Involving students in self-assessment (correcting their own mistakes).
3. Solving the quiz questions as a class activity at the end of the lecture.

ADMINISTRATION OF MEDICATION

Drug: is any substance that modifies body functions when it taken into the body and used to diagnosis, cure, treatment, relief and prevention of disease.

Uses of Drugs

1. Prevention- used as to prevent diseases such as vaccines of diseases and fluoride prevents Dental cavities.

2. Diagnosis- establishing the patient's disease or problem such as T.B test.

3. Enhancement aspects of health achieve the best state of health e.g. vitamins, minerals.

4. Treatment- alleviate the symptoms for patients with chronic disease.

5. Cure- complete eradication of diseases e.g. antibiotics.

Rights of Medication Administration

In performing drug administration, pre-hospital care providers adhere to the rights administration of medication:

1. Right patient: Identify the name, age and gender

2. Right medication: Is this the medication the physician ordered and similar to prevent the error of administering one patient's medication to another.

3. Right dose: Is this the dose ordered by the physician, careful and correct dose is important to prevent over or under dosage of the medication.

4. Right route: this medication can be given in the route ordered and acceptable and the nurse should never decide without consulting the physician.

5. Right time: drug timing is very especially with some drugs such as antibiotics. Some drugs given on empty stomach and some after meals.

6. Right to information on drug/client education, side effects.

7. Right to Refuse Medication The patient has the right to refuse any medication.

8. Right Assessment some medications require specific assessment before their administration, checking of vital signs.

9. Right Documentation should be done after medication and not before.

Basic principle of nurse on drugs administration

1. The nurse must be aware of the institution's administration procedures for the patient or client welfare and the nurse's legal protection.

2. The nurse must know the drugs prescribed dose, method of administration, actions, expected therapeutic effect, possible interactions with other drugs, and side effects.

3. The nurse must review physician's order for completeness the patient name, date of the order, name of the drug, dose, route, time of administration, and the physician's signature.

4. The nurse discusses the medication and its actions with the client; recheck the medication order if the client disagrees with the dose or the physician's order.

5. The nurse must check the physician's order against the client's medication administration record for accuracy.

6. The nurse gives the patient the right to know about the medication he is receiving and the right to refuse it.

Methods of Administration

A: Enteral Tract Methods

The common enteral Methods of administration used in general medical practice are as follows:

1. Oral: The best, and most convenient, way of administering drugs is by mouth. The effects of oral administration are often not apparent until 30 to 45 minutes after administration.

2. Orogastric/nasogstric tube (OG/NG): This Methods is generally used for oral medications when the patient Unconscious and Cerebrovascular accident.

3. Sublingual (SL): Some drugs can be administered sublingually, the Angised is placed under the tongue, where it quickly dissolves 5 to 10 minutes.

4. Rectal (PR): Rectal administration may have both local and systemic effects. The rectal Methods is frequently used in infants and children, who may not be able to swallow oral medications.

B: Parenteral Methods

Any method of administration that does not involve passage through the digestive tract is termed parenteral.

1. Topical: Certain drugs can be placed on the skin.

2. Intradermal: Drugs can be injected into the dermal layer of the skin.

3. Intranasal: The drug is aerosolized and instilled in the nose, absorbed through the nasal tissues.

4. Subcutaneous: With subcutaneous administration, medications are injected into fatty, subcutaneous tissue under the skin and overlying the muscle.

5. Intramuscular: The most commonly used route of parenteral medication administration is the intramuscular route.

6. Intravenous. Most medications used in emergency medicine are designed to be administered intravenously.

7. Intracardiac: Injection of a medication directly into the ventricle of the heart is referred to as intracardiac administration.

8. Inhalational: Medications can be administered directly into the respiratory tree in cases of respiratory distress including asthma and certain types of chronic obstructive pulmonary disease.

9. Vaginal: Medications can be placed into the vagina, where they are absorbed into surrounding tissues. Most vaginal medications are supplied in creams or vaginal suppository.

Injection drugs can be administered given in four different ways

1. **Intramuscular** (IM) is an injection into the muscle.
2. **Intravenous** (IV) is an injection into a vein.
3. **Intradermal** (ID) is an injection into the dermis.
4. **Subcutaneous** is an injection into the subcutaneous tissue.

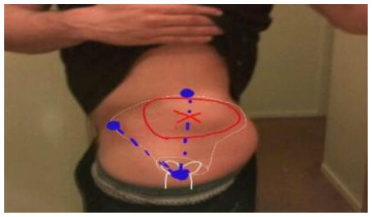
Only five intramuscular injection sites that allow for administration with lowest risk of damage to adjacent nerves and blood vessels

1. Intramuscular Injection (IM)

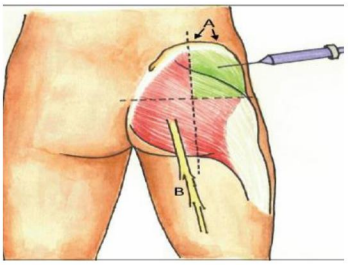
It is an injection of medications into the muscle.

Sites selected for Intramuscular injection.

1. Ventrogluteal muscle.
Site is an area on the most prominent part of the hip that is considered the preferred site for intramuscular injections. (IM) injection.



2. Dorsolateral muscle.
Because of the sciatic nerve location, the dorsolateral muscle is not recommended as an injection site. The patient may experience partial or permanent paralysis of the leg.



3. Deltoid muscle
The deltoid muscle located laterally on the upper arm can be used for intramuscular injections.

4. Femoris muscle (Thigh injection)
To inject into the rectus femoris muscle, the needle should be inserted in the middle third at the front of your thigh.

Advantage of Intraumscular Injection (IM)

1. The muscle is less sensitive to irritating and viscous drugs.
2. Adult client can safely tolerate as much as 4 ml of medication in larger muscles such as the gluteus medius without discomfort than subcutaneous tissue.
3. Safe method than other parenteral administration rout.
4. Slow action of medication can be achieved by this rout of administration.
5. Some medication need to absorbed slowly and harm if given intravenous such as oily hormone, long acting penicillin.

Disadvantage of Intramuscular Injection (IM)

1. Tissue injury (burn, wound).
2. Presence of nodules.
3. Lumps.
4. Abscesses.
5. Tenderness.
6. Other pathology such as (viral hepatitis B), (cross infection).
7. Sciatic nerve injury (nerve damage).
8. Sterile abscess.
9. Gangrene.

2. Intravenous Injection (IV)

It is the administration of medication to the client's bloodstream directly by the vein.

Characteristics Intravenous of Injection (IV) administration

Advantage

1. When rapid effect is required.

2. Rout is appropriate when medications are too irritating to the tissue when given by other routes.

3. When there are contraindications to give medication by other rout such as abscesses on gluteal muscles occur.

4. When large volume infusion or medication are indicated.

5. When there are multi dose of drug administration for long period.

6. Easy to perform venipuncture's by needle to administration of medication or by introduce continuous line as cannula.

Disadvantage

1. Rapid severe reactions to the medication (anaphylactic shock).

2. Infection transmission.

3. Fluid volume overload.

4. Transmission of infection by contaminated syringe such as (HIV, viral hepatitis B).

5. Thrombophlebitis repeated injection on the same vein

Drugs orders

All orders should be written clearly and legibly, and the drug order should contain seven parts:

1. The name of the client.
2. The date and time when the order is written.
3. The name of the drug to be administered.
4. The dosage.
5. The route by which it is to be administered and special directives about its administration.
6. The time of administration and frequency.
7. The signature of the prescribing practitioner writing the order (e.g., the prescribing practitioner or advanced practice registered nurse).

Medication Administration and Documentation

Record all information concerning the patient and medication including:

a. Indication for drug administration.

b. Dosage and route delivered.

c. Patient response to the medication, both positive and negative.

3. Subcutaneous Injection (SC)

Depositing medication into the loose connective tissue underlying the dermis, which is not richly supplied with blood vessels; thus, drug are not absorbed as quickly as those given intramuscularly are.

Sites selected for SC injection.

1. Outer aspect of the upper arms.
2. Outer aspects of the abdomen below the costal margin to the iliac crests.
3. The anterior aspects of the thigh.
4. The scapular areas of the upper back
5. Upper ventrogluteal and dorsogluteal areas.

Advantage of SC injection

1. Drug given subcutaneously are isotonic, nonirritating, no viscous, and water soluble, example of medication given SC (epinephrine, heparin, insulin, tetanus toxoid, allergy medications, vaccine, narcotics and heparin).
2. Small doses of medication (0.5 – 1 ml) should be given SC.
3. Area of injection can easily accessible.
4. Patient can do self – administration SC injection (Insulin).
5. Multiple areas of injections may be rotated to avoid drug administration complication.
6. Needle 25 gauge ⅝ inches with medium bevel inserted at 45°-degree angle.

Disadvantage of Subcutaneous Injection (SC) administration:

1- Tissue is sensitive to irritating solution and large volume of medication.
2- Medication collecting within the tissues can cause sterile abscesses witch appear as hardened, painful lump.

4. Intradermal Injection (ID)

It is the administration of a drug into the dermal layer of the skin just beneath the epidermis.

Sites selected for intradermal injection

1. Inner aspect of lower arm.
2. Upper site of chest.
3. Back site of chest beneath the scapulae.
4. Commonly the left arm is used for tuberculin test and the right arm is used for all other test.

Characteristics of Intradermal Injection (ID) administration (Advantage)

1. Used for skin test (tuberculin test).
2. Drug absorption occurs slowly.
3. Common used to antibiotic screening test (allergy test).
4. Tuberculin syringe 1 ml and with needle (¼ - ½ inches) 26 or 27 gauge is used.
5. The needle inserted at 15 ° degree angle of injection
6. Small amount of medication (0.01 – 0.1ml) are injected intradermally.
7. Bleb should be appearing after needle withdrawal.

Disadvantage of Intradermal Injection (ID) administration

1. Negative result if bleb does not appear or if the site bleeds after injection.
2. Irritation of skin due to large amount of drug administration.

Fifth Week

Learning Objective

The student should be able to identify

1. To Identify the Introduction and Purpose of Intravenous infusion
2. To Describe the Types of Intravenous Solutions
3. To Explain Nursing Management to the Patient Receiving

Lecture Duration: 2 hours of theory + 4 hours of practice

Activities used

1. Classroom Interactive Explanation
2. Brainstorming Techniques Questions
3. Group Assignment

Evaluation Methods:

1. Immediate feedback
2. Involving students in self-assessment (correcting their own mistakes).
3. Solving the quiz questions as a class activity at the end of the lecture.

Intravenous infusion

Intravenous fluids (IV Fluids), also known as intravenous solutions, no other route of administration is available, fluids are given by IV in hospitals, outpatient diagnostic and surgical settings, clinics, and homes to replace fluids, administer medications, and provide nutrients.

Are supplemental fluids used in intravenous therapy to restore or maintain normal fluid volume and electrolyte balance when the oral route is not possible.

IV fluid therapy is an efficient and effective way of supplying fluids directly into the intravascular fluid compartment, in replacing electrolyte losses, and in administering medications and blood products.

Purpose

The choice of an IV solution depends on the purpose of its administration. Generally, IV fluids are given to achieve one or more of the following goals:

1. To Provide water and electrolyte maintenance, restoration, and replacement

2 To provide water, electrolytes, and nutrients to meet daily requirements

3. To administer medications and blood products

Types of Intravenous Solutions

There are different types of IV fluids and different ways on how to classify them. The most common way to categorize IV fluids is based on their tonicity:

1. Isotonic Solutions

The volume of an isotonic solution resembles that of your blood plasma.

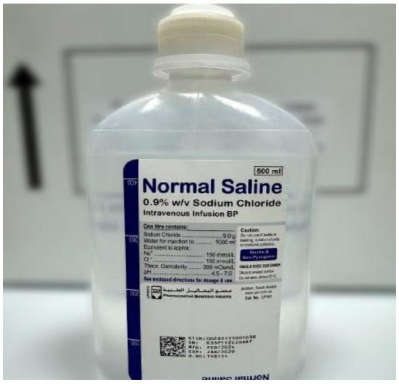
This composition enables isotonic solutions to maintain balanced osmotic pressure with equal amounts of fluids, both inside and outside of cells. that have the same concentration of solutes as blood plasma. And do not cause red blood cells to shrink or swell. Patients with hypertension and heart failure should be carefully monitored for signs of fluid overload.

These are three of the most popular isotonic fluids used in IV therapy:

1. Normal Saline (0.9% NaCl):

An isotonic solution perfect for rehydration and treating issues like hemorrhage, vomiting, or diabetic ketoacidosis.

Also called normal saline, they are effective in relieving the symptoms of dehydration.



2. Ringer's

You can often find this fluid in emergency rooms, ambulances and other places dealing with critical health issues.

Making it ideal for extensive burn, surgery recovery, severe injuries or major loss of blood. or significant fluid loss.

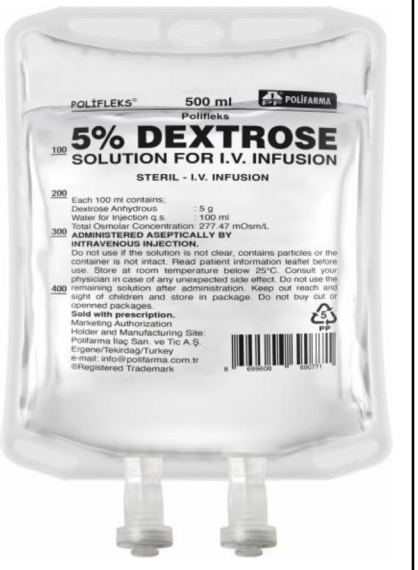
Hypotonic Solutions

hypotonic solution is a solution that has a lower concentration of solutes and a higher concentration of water compared to another solution or the inside of a cell.

1. Dextrose Solutions 5%:

A dissolved sugar solution, this fluid use and supports who can't eat normal food by supplying them with quick energy and often used for patients with low blood sugar

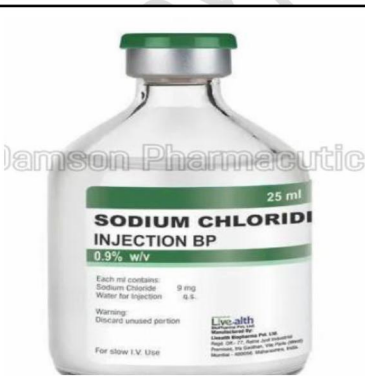
Avoid use in clients with liver disease, trauma, and burns to prevent hypovolemia from worsening. Monitor closely for cerebral edema.



Sodium Chloride:

A dissolved sugar solution, this fluid use and supports who can't eat normal food by supplying them with quick energy and often used for patients with low blood sugar

Used to treat intracellular dehydration and hypernatremia and to provide fluid for renal excretion of solutes.
Prevents and treats low levels of sodium in your body.
Plays an important role in your hydration level and the health of your muscles and nervous system.
It is use in severe diarrhea in an attempt to restore the balance between the ratio of fluids and salts.
It is used in cases of fluid loss from the body as a result of low blood pressure



Hypertonic Solutions

Hypertonic solutions can make it easier for the kidneys to remove excess water from your patient's body. They also decrease blood pressure by reducing the amount of fluid in blood vessels and capillaries and as a result, decreases how much pressure is exerted against them.

20% Mannitol Injection :

Promotion of diuresis, in the prevention and/or treatment of the oliguric phase of acute renal failure before irreversible renal failure becomes established
Reduction of intracranial pressure and treatment of cerebral edema by reducing brain mass
Reduction of elevated intraocular pressure when the pressure cannot be lowered by other means
Promotion of urinary excretion of toxins

Advantages of IV therapy

1. Direct access to the circulatory system.
2. A route of medication administration for patients unable to tolerate oral medications.
3. A route that provides instant drug action and termination.
4. Allows for administration directly to the site of distribution.

Disadvantages of IV therapy

1. Speed shock is caused by too rapid administration of a drug.
2. Extravasation occurs when an agent infuses into the tissues surrounding the IV site.
3. Chemical phlebitis may result when a medication irritates the vein wall.
4. Infiltration results when an irritant is infused into the tissues surrounding the IV site.

Nursing Management

1. Provide patients with information about their IV therapy.
2. Educate the patient about the purpose and importance of fluids
3. Measuring vital signs before, during and after IV therapy
4. Closely monitor patients with heart failure, renal failure, or conditions caused by cellular dehydration, as it will exacerbate these conditions.
5. Monitoring and preventing complications

Sixth and Seventh Week

Learning Objective

The student should be able to identify

1. To Defines the Dressing and Bandage
2. To Determine the Bandage 3 major types of bandages
3. To Describe the Types of Wounds
4. To Determine the Phases of Wound Healing
5. To Describe the Types of Wound Exudate
6. To Determine the Factors Affecting Wound Healing

Lecture Duration: 2 hours of theory + 4 hours of practice

Activities used

1. Classroom Interactive Explanation
2. Brainstorming Techniques Questions
3. Group Assignment

Evaluation Methods

1. Immediate feedback
2. Involving students in self-assessment (correcting their own mistakes).
3. Solving the quiz questions as a class activity at the end of the lecture.

Dressing and Bandage

Dressing: Dressings are used to cover wounds, prevent contamination and control bleeding. In providing first aid we commonly used self-adhesive dressings or gauze dressings: Adhesive dressings are used mainly for small wounds. They come in many different sizes, including specific types for placement on fingertips.

Gauze dressings are thick, cotton pads used to cover larger wounds. They are held in place with tape or by wrapping with a gauze strip (bandage). Dressings must be sterile and absorbent to deter the growth of bacteria, and should be left in place until the wound heals, unless it needs to be regularly cleaned.

Bandage 3 major types of bandages are:

1) roller bandages
2) tubular bandages
3) triangular bandages

They are necessary for:

covering wounds, applying pressure controlling bleeding, supporting a strain or sprain. There is a specific bandage made for each of these tasks.

WOUNDS: The skin is the largest organ in the body and serves a variety of important functions in maintaining health and protecting the individual from injury. Important nursing functions are maintaining skin integrity and promoting wound healing. Impaired skin integrity is not a frequent problem for most healthy people but is a threat to older adults; to clients with restricted mobility, chronic illnesses, or trauma; and to those undergoing invasive health care procedures.

TYPES OF WOUNDS

Body wounds are either intentional or unintentional.

Intentional trauma occurs during therapy. Examples are operations or venipunctures. Although removing a tumor, for example, is therapeutic, the surgeon must cut into body tissues, thus traumatizing them.

Unintentional wounds are accidental; for example, a person may fracture an arm in an automobile collision. If the tissues are traumatized without a break in the skin, the wound is closed.

Classifying Wounds by Depth

Partial thickness: confined to the skin, that is, the dermis and epidermis; heal by regeneration

Full thickness: involving the dermis, epidermis, subcutaneous tissue, and possibly muscle and bone; require connective Tissue repair

Wound Healing

Healing is a quality of living tissue; it is also referred to as regeneration (renewal) of tissues.

Healing can be considered in terms of types of healing, having to do with the primary care provider's decision on whether to allow the

wound to seal itself or to purposefully close the wound.

phases of healing, which refer to the steps in the body's natural processes of tissue repair. The phases are the same for all wounds, but the rate and extent of healing depends on factors such as the type of healing, the location and size of the wound, and the health of the client.

Phases of Wound Healing

Wound healing can be broken down into three phases: inflammatory, proliferative, and maturation or remodeling.

1- INFLAMMATORY PHASE: - The inflammatory phase begins immediately after injury and lasts 3 to 6 days. Two major processes occur during this phase: hemostasis and phagocytosis.

Hemostasis (the cessation of bleeding) results from vasoconstriction of the larger blood vessels in the affected area, retraction (drawing back) of

injured blood vessels, the deposition of fibrin (connective tissue), and the formation of blood clots in the area.

During cell migration, leukocytes (specifically, neutrophils) move into the interstitial space. These are replaced about 24 hours after injury by macrophages. These macrophages engulf microorganisms and cellular debris by a process known as phagocytosis.

2- PROLIFERATIVE PHASE: - The proliferative phase, the second phase in healing, extends from day 3 or 4 to about day 21 post injury.

Fibroblasts (connective tissue cells), which migrate into the wound starting about 24 hours after injury, begin to synthesize collagen. Collagen is a whitish protein substance that adds tensile strength to the wound. As the amount of collagen increases, so does the strength of the wound; thus the chance that the wound will remain closed progressively increases. If the wound is sutured, a raised healing ridgell appears under the intact suture line. In a wound that is not sutured, the new collagen is often visible.

3- MATURATION PHASE: - The maturation phase begins on about day 21 and can extend 1 or 2 years after the injury. Fibroblasts continue to synthesize collagen. The collagen fibers themselves, which were initially laid in a haphazard fashion, reorganize into a more orderly structure.

During maturation, the wound is remodeled and contracted. The scar becomes stronger but the repaired area is never as strong as the original tissue. In some individuals, particularly dark-skinned individuals, an abnormal amount of collagen is laid down. This can result in a Hypertrophic scar, or keloid.

Types of Wound Exudate

Exudate is material, such as fluid and cells, that has escaped from blood vessels during the inflammatory process and is deposited in tissue or on tissue surfaces. The nature and amount of exudate vary according to the tissue involved, the intensity and duration of the inflammation, and the presence of microorganisms.

The three major types of exudate are serous, purulent, and sanguineous.

A serous exudate consists chiefly of serum (the clear portion of the blood) derived from blood and the serous membranes of the body, such as the peritoneum. It looks watery and has few cells. An example is the fluid in a blister from a burn.

A purulent exudate is thicker than serous exudate because of the presence of pus, which consists of leukocytes, liquefied dead tissue debris, and dead and living bacteria.

A sanguineous exudate consists of large amounts of red blood cells, indicating damage to capillaries that is severe enough to allow the escape of red blood cells from plasma. This type of exudate is frequently seen in open wounds.

Factors Affecting Wound Healing

1) Developmental Considerations
2) Nutrition
3) Lifestyle
4) Medications

Eighth Week

Learning Objective

The student should be able to identify

1. To Defines the Sutures and Suturing
2. What are the Suture needles
3. To Determine the Major Groups of Sutures
4. To Describe the Types of Needles
5. To Describe the Sutures Technique
6. To explain the Guidelines for removing sutures

Lecture Duration: 2 hours of theory + 4 hours of practice

Activities used

1. Classroom Interactive Explanation
2. Brainstorming Techniques Questions
3. Group Assignment

Evaluation Methods

1. Immediate feedback
2. Involving students in self-assessment (correcting their own mistakes).
3. Solving the quiz questions as a class activity at the end of the lecture.

SUTURES

Sutures are medical devices which are used to sew living tissues. They essentially consist of a needle and a thread, known as the suture material. Sutures can hold wound edges together while healing, control bleeding, repair tissue defects or damaged structures, create anastomoses and secure foreign objects such as mesh implants, vascular grafts and drains in place.

Suturing is a core surgical skill and one of the first techniques surgeons are taught during their training. In addition to perfecting the physical art of suturing, surgeons must make important decisions about the best suturing methods to use and which of the vast array of available needles and suture materials to choose for each step of an operation.

Suture needles

Any sort of sewing requires a needle to carry the thread through the tissues. Suture needles are made from stainless steel alloys and have three parts:

a narrow point which is driven into the tissue

a wider body which is grasped by the needle holder

a swage where it joins with the suture material

The two biggest considerations when choosing a suture are the location and tension of the wound. Other important considerations are tensile strength, knot strength, handling, and tissue reactivity.

Sutures are divided into two major groups

1.Absorbable

lose the majority of their tensile strength in less than 60 days. They are generally used for buried sutures and do not require removal.

2. Non-absorbable

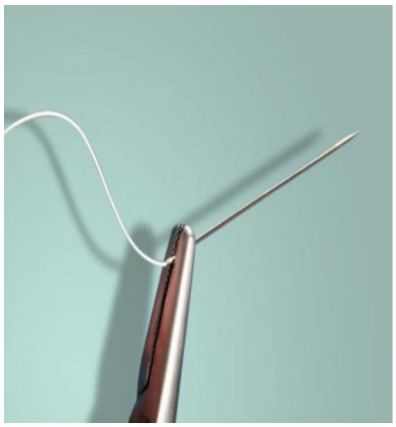
maintain the majority of their tensile strength for more than 60 days. They are generally used for skin surface sutures and do require removal postoperatively. Suture needles also come in a variety of shapes and sizes. Curved needles are almost exclusively used in dermatological surgery. Cutting needles move through the tissue more easily and may have their primary cutting edge on the inside of the curve (conventional cutting) or outside of the curve (reverse

cutting). The benefit of reverse cutting is that the tapered puncture left by the suture is directed away from the wound edge and therefore tissue tearing is less common. Non-cutting round needles cause even less tissue tearing and may be especially useful in delicate areas and fascia.

Types of Needles

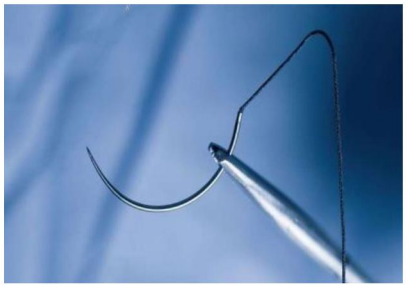
1. Straight needles

Straight needles can be held with a needle holder or in the surgeon's hand. They are very precise and create beautifully neat skin closures. However, they are unsuitable for deeper suturing within body cavities as they require a lot of space to manoeuvre and are more likely to inadvertently prick organs



2. Sharp needles

Sharp needles have a sharpened tip which punctures tissue to pass through it. Most suture needles are sharp, as blunt needles are less precise and often struggle to get through tough tissues

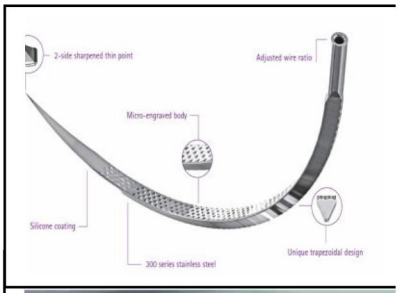


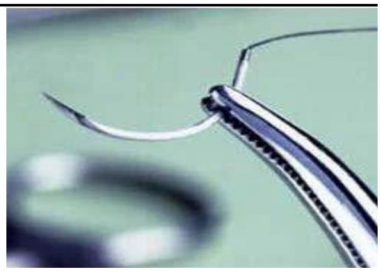
3. Blunt needles

Blunt needles have a rounded tip which dilates and separates tissue to pass through it. These have the advantage of improved safety for theatre staff, as they are much less likely to puncture gloves and have been shown to significantly reduce

4. Cutting needles

Cutting needles have a sharpened point which cuts a path through tissues. This looks like a triangle in cross-section. The inner concave edge cuts through the tissue towards the surface, whilst the outer surface is flat. Cutting needles are useful for passing through tough tissues, such as thick skin, fascia and the sternum. However, they can weaken other tissues, causing sutures to cut out into the wound.





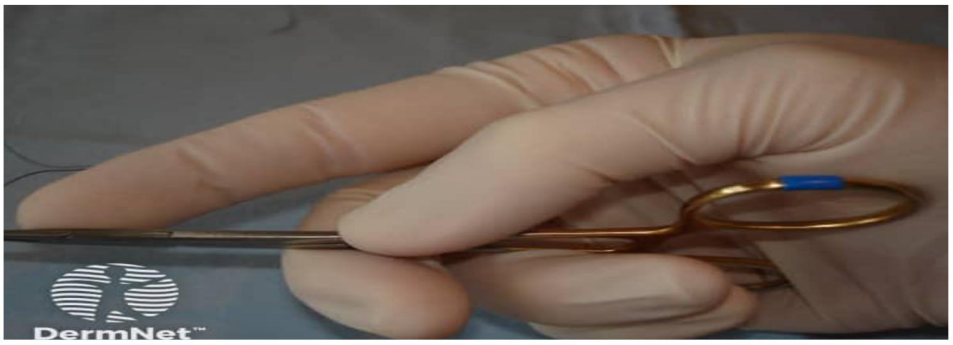
5. Side cutting (spatula) needles

Side cutting or spatula needles have a trapezoid shape with cutting edges on both sides, which allows them to safely create a path within thin layers of tissue. These are very useful for eye surgery.

Technique

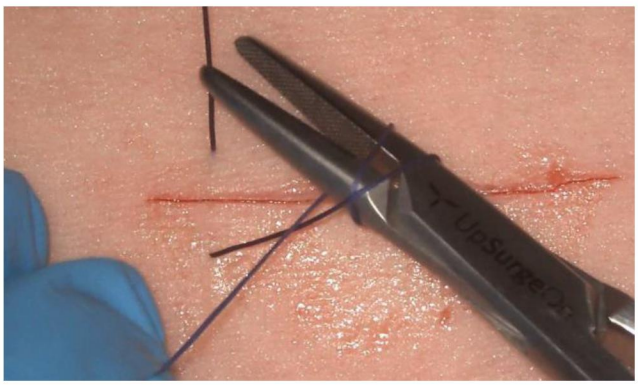
Grip

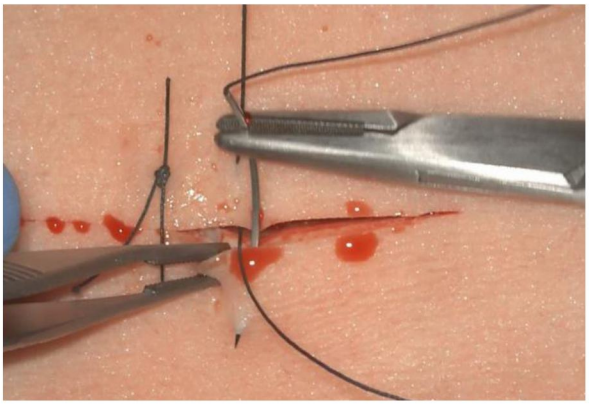
The needle holder should be held with the palm grip this allows superior wrist mobility than if the fingers are placed in the handle loops. The needle should be grasped between 1/3 to 1/2 of the distance between the suture attachment and the needle tip.



1. Simple interrupted suture

The wound edge should be gently stabilised with either toothed forceps or a skin hook. The needle should enter perpendicular to the skin 3-5mm from the wound edge. See Figure 3. Entering perpendicular causes a wider bite of deeper tissue to be included in the suture than at the surface and consequently causes more wound edge eversion and ultimately a superior cosmetic result with a thinner scar. A common mistake is to enter the skin at a flatter angle resulting in much less wound edge eversion



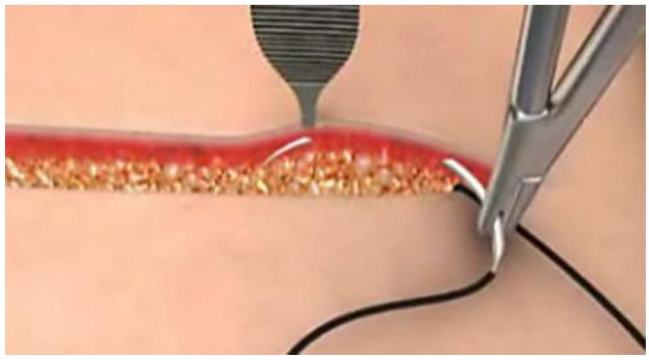


2. Continuous suture

Using a continuous suture rather than multiple interrupted sutures offers a significant time saving. However, it is not as strong as interrupted sutures, and can strangulate the blood supply in wounds under more than minimal tension. An interrupted suture is performed, but only the free suture end is cut before the needle is reintroduced and directed diagonally across the wound to exit the skin on the other side. The suture is then brought across perpendicular to the wound edge and reintroduced on the first side again with each bite. Once the entire wound is closed, a loop is made with the last pass of suture, and this loop is grasp by the needle holder to tie the knot.

3. Running subcuticular suture

The benefit of this suture is the minimal epidermal puncture points allowing the suture to be left in place longer without suture-track scarring. The needle is introduced 10mm distal to one wound end and brought out inside the apex of the wound within the dermis. The free end of suture can be tied off on itself, or secured with a bead or crimp. Horizontal bites of dermis are then taken from alternating sides of the wound working towards the other wound apex. The second epidermal puncture is made when the needle exits 10mm from the other end of the wound. See figure 9. The second free end can be secured in the same way as the first. Alternatively, absorbable suture material can be used and the ends tied off underneath the skin surface.



Suture removal

The time to suture removal depends on the location and the degree of tension the wound was closed under. This varies between surgeon and situation, but as a general rule sutures on the head and neck are usually removed between five and seven days post-operatively, while sutures on trunk or extremity wounds are typically removed between 7 and 14 days.

Guidelines for removing sutures

1. Inform the client that suture removal may produce slight discomfort, such as a pulling or stinging sensation, but should not be painful.
2. Before removing skin sutures, whether a dressing is to be applied following the suture removal.
3. Put on sterile gloves.

4. Cleaning the suture line with an antimicrobial solution before and after suture removal to prevent infection.

5. Remove plain interrupted sutures as follow;

a) Grasp the suture at the knot with a pair of forceps.

b) Place the curved tip of the suture scissors under the suture as close as to the skin as possible, either to the side opposite the knot, or directly under the knot.

c) Cut the suture, sutures are cut as close to the skin as possible on one side of the visible part because the suture material that is visible to the eye is in contact with the resident bacteria of the skin and must not be pulled beneath the skin during removal. Suture materials that is beneath the skin is considered free from bacteria.

d) Wipe the forceps, pull the suture out in one piece. Inspect the suture carefully to make sure that all suture material is removed. Suture material left beneath the skin acts as a foreign body and cause inflammation.

Ninth Week

Learning Objective

The student should be able to identify

1. To Defines the Body mechanics
2. To Determine the Objectives of the Body mechanics
3. To Describe the Principles and Importance of Body mechanics
4. To Defines the Body posture
5. To Determine the Factors that influence body mechanics and posture
6. To Describe The importance of exercises
7. To Defines Body posture
8. To Determine Factors that influence body mechanics and posture
9. To Describe the Common Immobility Hazards

Lecture Duration: 2 hours of theory + 4 hours of practice

Activities used

1. Classroom Interactive Explanation
2. Brainstorming Techniques Questions
3. Group Assignment

Evaluation Methods

1. Immediate feedback
2. Involving students in self-assessment (correcting their own mistakes).
3. Solving the quiz questions as a class activity at the end of the lecture.

Body Mechanics

Body mechanics Clinical nursing requires coordinated and effective use of the muscular, skeletal and nervous systems to maintain safe movement production, balance and control, energy conservation, anatomically and physiologically.

Objectives

To maintain good balance.

To reduce the energy required.

To avoid excessive fatigue.

To avoid muscle strains or tears.

To avoid skeletal injuries.

To avoid injury to the patient.

To avoid injury to assisting staff members

Principles and Importance of Body mechanics

1. The wider the base of support, the greater the stability.
2. The lower the center of gravity, the greater the stability.
3. Use appropriate technique to avoid twisting the spine and prevent abnormal movement.
4. Dividing balanced activity between arms and legs reduces the risk of back injury.
5. It is easier to pull, push, or roll an object than it is to lift it movements should be smooth and coordinated rather than jerky.
6. Use the arm and leg muscles as much as possible, and the back muscles as little as possible.
7. Keep the work as close as possible to your body. It puts less of a strain on your back, legs, arms and avoid excessive bending at the waist.
8. Keep your body in good physical condition and rest between periods of work promotes work endurance,

Body posture: is the interrelation of various parts of the body at rest or in any phase of activity.

Factors that influence body mechanics and posture:

1. General health.
2. Nutrition and sleeping patterns.
3. Life style & situational factors.
4. Mental health status, emotions.

The importance of exercises:

1. Improve the strength and flexibility of all body muscle.
2. Maintain and build muscle strength.
3. Prevent deformity.
4. Improve blood circulation.
5. Promote good respiratory function.
6. Enhance endurance.
7. Relieve depression.
8. Maintain joints function.

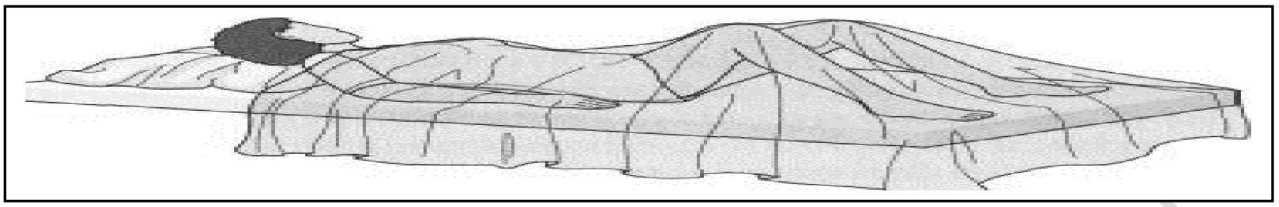
Patient Positions: It is important to consider patient age, health status, mobility, physical condition and energy level and privacy.

Many positions need assisting from others.

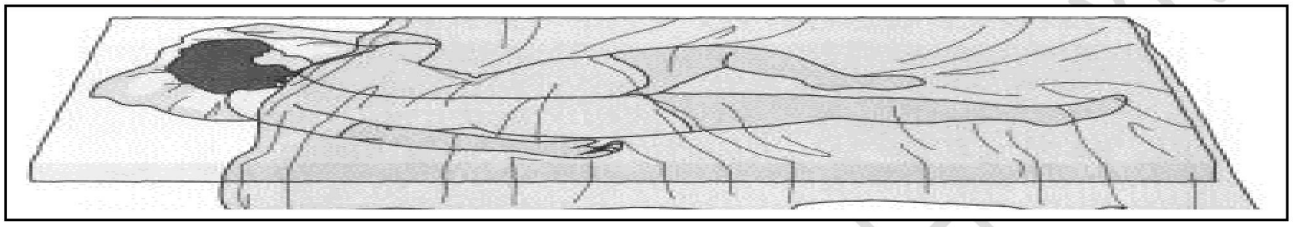
1.Standing position: To assess posture, gait and balance.

2.Sitting position: To visualize the upper part of the body, & to assess vital signs, to assess the head, breasts, heart.

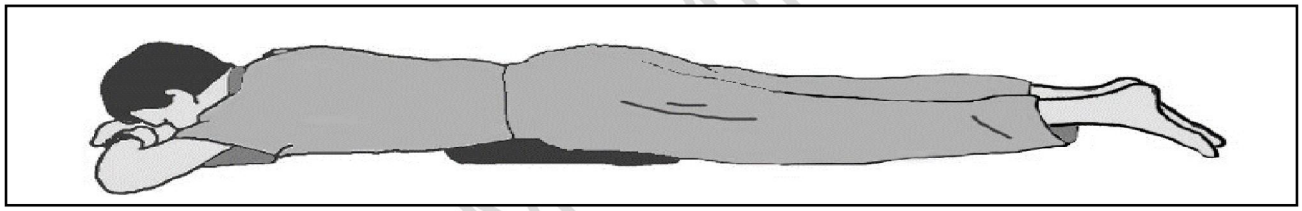
3.Dorsal-Recumbent position it is the most common position bcause it allows practitioner access to genitals of the patient for examination, diagnosis, and treatment.



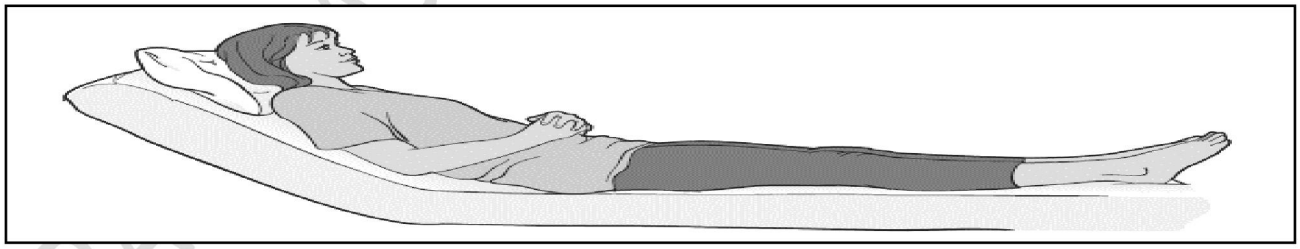
4.Sim's position- to assess the rectum and vagina.



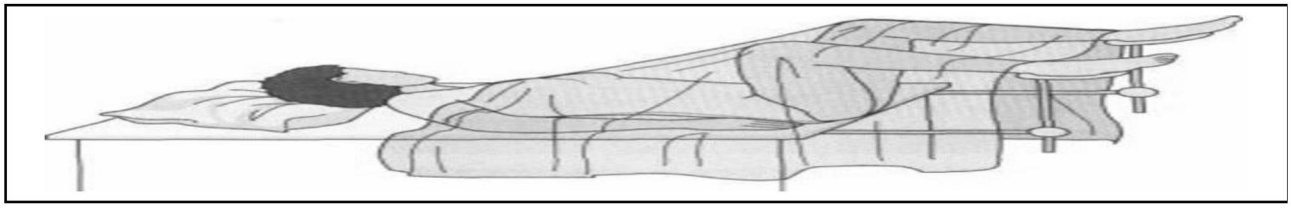
5. Prone position- to assess the hip joint, supine, posterior thorax, and for intramuscular injection.



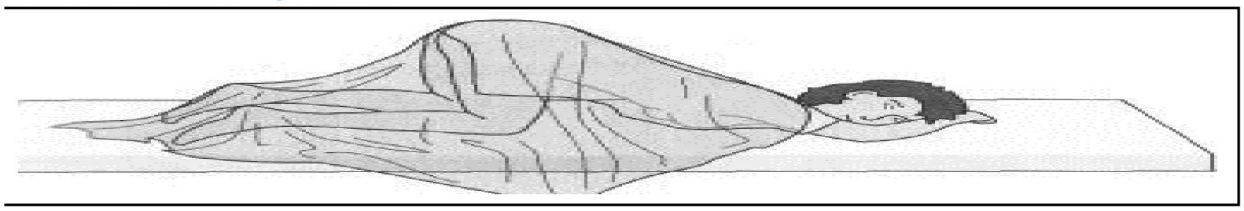
6. Fowler position- for any condition require maximal chest expansion as cardiac or respiratory distress, also for oral hygiene and gastric feeding.



7. Lithotomy position- to assess the female rectum and vagina, and for delivery.



8. Knee-Chest position- to assess rectum, hemorrhoids, ascites.



Common immobility hazards

1. **Respiratory system:** atelectasis, collapse of lung tissue.
2. **Circulatory system:** thrombosis, orthostatic hypotension.
3. **Musculoskeletal system:** osteoporosis, atrophy, contracture, stiffness and joint pain.
4. **Urinary system:** calculi or stone, urinary retention, urinary tract infection.
5. **Gastro intestinal system:** disturbance in appetite, poor digestion, constipation.
6. **Integumentary system:** reduced skin turgor, skin breakdown, pressure sores.
7. **Psychological effects:** frustration, lower self-esteem, withdrawal, angry, aggressive.

Tenth Week

Learning Objective

The student should be able to identify

1.To Determine Stages of infections
2. To Determine the Types of infections
3. To Defines the Nosocomial Infections
4. To Describe Types of Nosocomial Infections
5. To Determine the Chain of infection
6. To Describe Body defenses against infection
7. To Describe Factors increasing susceptibility to infection
8. To Determine the Supporting Defenses of a Susceptible Host
9. To Describe Infection control for health care worker

Lecture Duration: 2 hours of theory + 4 hours of practice

Activities used

1. Classroom Interactive Explanation
2. Brainstorming Techniques Questions
3. Group Assignment

Evaluation Methods:

1. Immediate feedback
2. Involving students in self-assessment (correcting their own mistakes).
3. Solving the quiz questions as a class activity at the end of the lecture.

Asepsis

Stages of infections

1. Incubation stage: is the time between entry of an infectious agent in the host and the onset of 'symptoms.

2. Prodromal stage: is the time from the onset of nonspecific symptoms until specific symptom begun to manifest.

3. Illness stage: is the time when the client has specific signs and symptoms of an infectious process.

4. Convalescent stage: is the time from the beginning of the disappearance of acute symptoms until the client returns to the previous state of health.

Types of infections

1. Localized infections are limited to a defined area or single organ with symptoms that resemble inflammation (redness, tenderness, and swelling).
2. Generalized such as pneumonia (in the lungs).
3. Systemic infections affect the entire body and involve multiple organs

Nosocomial Infections

Nosocomial infections are infections acquired in the hospital or other health care facilities that were not present or incubating at the time of the client's admission.

Nosocomial infections are also referred to as hospital-acquired infections. Nosocomial infections include those infections that become symptomatic after the client is discharged as well as infections among medical personnel. Most nosocomial infections are transmitted by health care personnel who fail to practice proper hand washing procedures or change gloves between client contacts.

Types of Nosocomial Infections:

1. Nosocomial of urinary tract infection.
2. Nosocomial of respiratory tract infection.
3. Nosocomial of blood stream infection.
4. Nosocomial of surgical site infection.

Chain of infection

1. Infectious agent

a.Bacteria b. Fungi c.Virus d. Parasites

2. Reservoir or source

a.Human beings b.Animals c. Inanimate object

3. Portal of exit

a.Sputum b. Emesis c.Stool d. urine e. blood

4. Mode of transmission

a.Contact b. Vehicle c.Airborne d. Vector borne

5. Portal of entry

a.Mucus membrane b. Non intact skin c.GI tract

d. GU tract e. Respiratory tract

6. Susceptible host

a.Immunosuppressed b. Elderly c. Surgery

d. Chronically ill e. Trauma

Body defenses against infection

The body has some natural defenses to protect it from infections.

There are several natural external defenses against infectious agents: -

1. Skin and normal flora- intact skin acts as a mechanical barrier against the entry of pathogens.
2. Mucous membranes- 1lining the respiratory, reproductive, gastrointestinal, & urinary tracts. The mucus is sticky and traps foreign materials before they can cause damage.
3. Cilia- (fine microscopic hairs) lining the respiratory tract propel the mucus and trapped microbes out of the body.
4. Coughing & sneezing- remove foreign materials from the respiratory tract.
5. Hydrochloric acid- a strong chemical that is produced in the stomach destroys many microbes.
6. Eyes are protected by tears that provide a flushing action to remove most microbes that enter the eyes.

There are several natural internal defenses against infectious agents: -

1. Phagocytes- special cells in the blood act to destroy microbes.

2. Temperature- an elevated temperature is believed to increase the body's ability to fight infection.

3. Inflammation- a process that brings blood and phagocytes to the area of infection.

Factors increasing susceptibility to infection:

1. Inadequate primary defenses- (broken skin).
2. Inadequate secondary defenses-(decrease hemoglobin, leucopenia).
3. Inadequate acquired immunity.
4. Immunosuppression.
5. Tissue destruction and increased environmental exposure.
6. Chronic diseases.
7. Elderly.
8. Malnutrition.
9. Invasive procedures.
10. Pharmaceutical agents.
11. Trauma.
12. Insufficient knowledge to avoid exposure to pathogens.

Supporting Defenses of a Susceptible Host

People are constantly in contact with microorganisms in the environment. Normally a person's natural defenses ward off the development of an infection. Susceptibility is the degree to which an individual can be affected; the following measures can reduce a person's susceptibility:

Hygiene, Intact skin and mucous membranes is one barrier against microorganisms entering the body. In addition, good oral care, including flossing the teeth, reduces the likelihood ofan oral infection.

Regular and thorough bathing and shampooing remove microorganisms and dirt that can result in an infection.

Nutrition. A balanced diet enhances the health of all body tissues, helps keep the skin intact, and promotes the skin's ability to repel microorganisms. Adequate nutrition enables tissues to maintain and rebuild themselves and helps keep the immune system functioning well.

Fluid. Fluid intake permits fluid output that flushes out the bladderand urethra, removing microorganisms that could cause an infection.

Sleep, Adequate sleep is essential to health and to renewing energy.

Stress. Excessive stress predisposes people to infections. Nurses can assist clients to learn stress-reducing techniques.

Immmntotons. The use of immunizations has dramatically decreased the incidence of infectious diseases. It is recommended that immunizations begin shortly after bith and be completed in early childhood except for boosters.

Disinfecting and Sterilizing

The first links in the chain of infection, the etiologic agent and the reservoir, are interrupted by the use of antiseptics (agents that inhibit the growth of some microorganisms) and disinfectants (agents that destroy pathogens other than spores) and by sterilization.

Cleaning is a process that uses detergent and water to remove visible contamination. It does not necessarily destroy microbes. Effective cleaning is essential before disinfection or sterilization. It is imperative that detergent is used to clean, not disinfectant.

Disinfection: is a process that uses chemical agents or heat to eliminate many or all pathogenic microorganisms on inanimate objects, with the exception of bacterial spores. Disinfectants should only be used when there is a risk of transmission of infection, e.g.

when a patient has an infection.

Sterilization: This is the complete elimination or destruction of all forms of microbial life, including bacterial spores.

Infection control for health care worker:

1) Hand hygiene (hand washing).
2) Using personal protective equipment such as:
3) Gloves
4) Mask
5) Gown
6) Goggles
7) Shoe covers
8) Vaccination -such as hepatitis B vaccine.

Eleventh Week

Learning Objective

The student should be able to identify

1.To Defines the Hygiene
2. To Determine the Types of Hygiene
3. To Determine the Goals of Personal Hygiene and Protect from Disease
4. To Describe the Principles of Personal Hygiene
5. To Determine the Factors Influences on Personal Hygiene
6. To Identify the Patient Care and Back massage
7. What are Hands Washing and Goals
8. To Defines Pressure Ulcer (Bedsores)
9. To Determine Areas of pressure sores
10. What are Causes and risk factors of bedsores
11. To Determine Stage of Pressure ulcers
12. To Describe Nursing care and Prevention of pressure ulcer

Lecture Duration: 2 hours of theory + 4 hours of practice

Activities used

1. Classroom Interactive Explanation
2. Brainstorming Techniques Questions
3. Group Assignment

Evaluation Methods:

1. Immediate feedback
2. Involving students in self-assessment (correcting their own mistakes).
3. Solving the quiz questions as a class activity at the end of the lecture.

Body Hygiene

Hygiene: the science and art, which is associated with the prevention and promotion of health.

Types of Hygiene

1. Social hygiene:

1. Social medicine includes person ability to establish good relationships with other persons.

2. The science of social functions, sexual ethics, communicable diseases spread occurs due to the unhealthy condition of society.

2. Industrial hygiene Occupational health

Identify, and measure workplace hazards or stresses that can cause illness, impaired health of workers. For example, may be expose to harmful chemical agents.

3. School hygiene or school health

1. Is an important branch of community health.

2. Assesses improve behavior through useful practices associated with personal hygiene, water, and food, household and public hygiene of schoolchildren.

4. Personal hygiene or personal health

1. Refers to the principles of physical hygiene and mental health of an individual and prevention or control of disease.

2. Washing the body parts and hair appropriately and regularly with soap and water.

Goals of Personal Hygiene and Protect from Disease

1. To maintain body resistance, prevent infection diseases and promote the level of health.

2. To improve mental well-being and promote good health socially and spiritually.

3. To maintain individual quality of life, improve the self-esteem in the society.

Principles of Personal Hygiene

1. Determine good hygiene practices, individual differences varies from person to other.
2. Changes that occur throughout the life, affecting health care practices.
3. The health practices that people use are various, preventing infectious diseases such as cultural values and personal values.
4. The environment is the first line of defense on human health.

Factors Influences on Personal Hygiene

1. Social practices: During childhood, hygiene family customs are affected.

2. Personal Diversity: Everyone has individual desires and choices about when to bath, shave and perform hair care.

3. Body shape: When operation surgery, illness or a change in functional status, often reduces of physical energy and skill to perform hygienic care.

4. Socioeconomic Status: It may influence ability to maintain regularly hygiene.

5. Health beliefs and motivation: knowledge about the importance of hygiene practices and their impact on well-being.

Patient Care: According to the patient's activity level

1. The morning routine the affects the patient's comfort throughout the day.
2. Assist the patient go to the bathroom, or provide a urinal every morning before breakfast.
3. Given the patient the opportunity to wash hands, face and brush his teeth.
4. After breakfast, the patient gets oral care, a change of clothing and a back massage
5. Clean the patient unit and change the bed to provide a comfortable and safe environment for the patient.
6. The care the patient receives at the end of the day influences the patient's level of relaxation and ability to sleep.

Back massage: Assist reduce spasms and inflammation back of the patient back to promote rest, comfort and therapeutic style.

After making back massage:

1. Recording date and time.
2. Observation any abnormal sign or sore during making back massage.

Hands Washing

1. Washing your hands on a regular basis is a very important part of good hygiene.
2. Every time wash your hands after using the toilet.
3. After cooking and especially when handling raw meat to prevent the spread of salmonella and other harmful diseases.
4. If you're dealing with a cold or other illness

Oral Care: It means cleaning and freshening the teeth, gums and mouth.

Halitosis: bad odor of breath caused by high number of bacteria.

Caries: decay of teeth with the formation of cavities.

Periodentitis or Pyorrhea: severe inflammation of the gums, including bone tissue around the teeth.

Goals

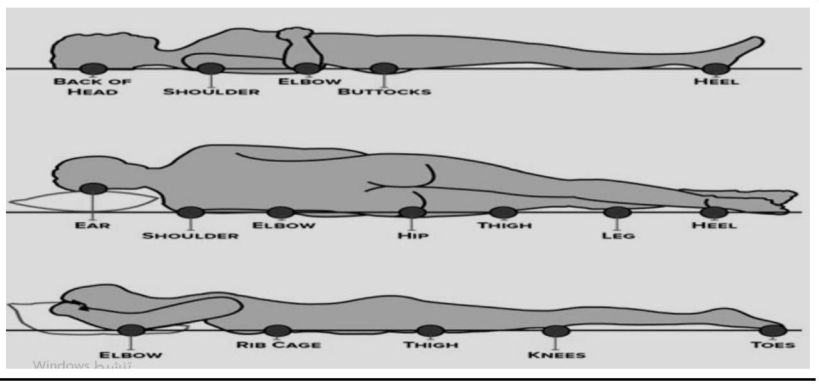
1. To keep the teeth, gums and mouth in a good condition.
2. To freshen the mouth and relieve of halitosis.
3. To prevent sores and infection.
4. Fresh the mouth and relieve unpleasant odor (Halitosis).
5. Provide a sense of well-being and comfort.
6. Prevent bacteria from entering to the digestive system.

Pressure Ulcer (Bedsores)

They are injuries or damage to the skin the covering bony areas of the body and underlying tissue result from prolonged pressure on the skin.

Areas of pressure sores:

1. **Heels.**
2. **Elbows.**
3. **Coccyx.**
4. **Scapula.**
5. **Back of the head**.



Causes and risk factors of bedsores

1. Malnutrition, nutritional deficiency and dehydration especially protein and vitamin 'C' deficiency.

2. Patients not control their bladder or bowels, skin Moisture by urine.

3. Some Diseases as; Diabetes Mellitus, Anemia, Obesity, Malignancy tumors.

4. Serious injuries such as fractures in the elderly.

5. Patients with renal disease and anemia.

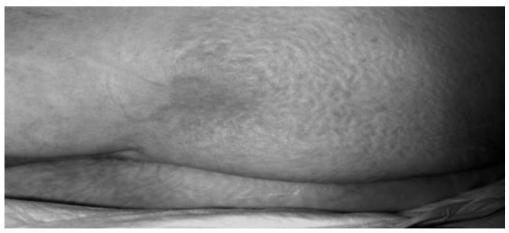
6. Patients with nerve damage and cannot feel pain over the affected areas.

7. Patients unconscious and those with paralysis due to damaged spinal cord.

Stage of Pressure ulcers

Stage 1

The area of the skin appears red and feels warm to the touch.

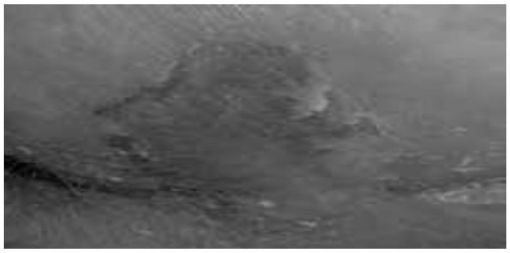


Stage 2

Appearance discolouration the area of skin, oedema red and feels warm to the touch may have an open sore, scrape, or blister.

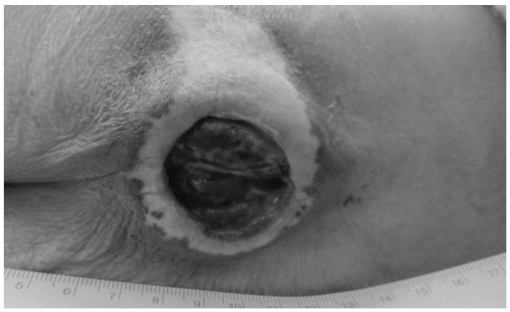
Stage 3

Full thickness skin loss, damage or necrosis of the subcutaneous tissue.



Stage 4

The area is severity damaged with extensive destruction, tissue necrosis or damage to muscle, bone, or supporting structures.



Nursing care and Prevention of pressure ulcer

Preventing pressure ulcers requires a team of healthcare staff working together to implement turning schedules, hygiene care, and nutrition.

1. Ensure that patients' privacy, comfort and dignity are always maintained.

2. Determine of contributing factors that lead to decreased tissue perfusion.

3. Inspection of pressure areas and avoid exposing the skin to pressure and assess of the extent of skin tissue damage.

4. Avoid exposing the skin to pressure, regular changing of body position at (2-4 hours) and evaluation of the extent of skin tissue damage.

5. Maintain the skin by cleaning the bed and cleaning the wound twice a day with hydrogen peroxide diluted with distilled water.

6. Use floating mattress to provide local protection for bony prominences.

7. Avoid friction, apply dressings and use topical antibacterial creams can help combat an infection and take any required antibiotics.

8. Provide the patient with adequate fluids and improving the nutritional status, which is high in protein and vitamins.

9. Surgical options to remove dead tissue, the surgeon may take tissue from healthy skin to perform the repair.

Twelfth Week

Learning Objective

The student should be able to identify

1.To Identify the Blood Transfusion

2. To Determine the Types of Blood transfusion

3. To Determine the Nursing intervention Preprocedure

4. To Describe the Nursing intervention undergoing Procedure

5. To Determine the Nursing Intervention Post procedure

Lecture Duration: **2 hours of theory + 4 hours of practice**

Activities used

1. Classroom Interactive Explanation

2. Brainstorming Techniques Questions

3. Group Assignment

Evaluation Methods:

1. Immediate feedback

2. Involving students in self-assessment (correcting their own mistakes).

3. Solving the quiz questions as a class activity at the end of the lecture.

Blood Transfusion

Administration of blood and blood components requires knowledge of correct administration techniques and possible complications. It is very important to be familiar with the agency's policies and procedures for transfusion therapy.

Special precautions are necessary when administering blood. When a transfusion is ordered, the nurse or other personnel obtain blood in plastic bags from the blood bank just before starting the transfusion. One unit of whole blood is 500 mL; a unit of packed red blood cells (RBCs) is 200 to 250 mL.

Do not store the blood in the refrigerator on the nursing unit; lack of temperature control may damage the blood. Once blood or a blood product is removed from the blood bank refrigerator, it must be administered within a limited amount of time (e.g., packed RBCs should not hang for more than 4 hours after being removed from the blood bank refrigerator)

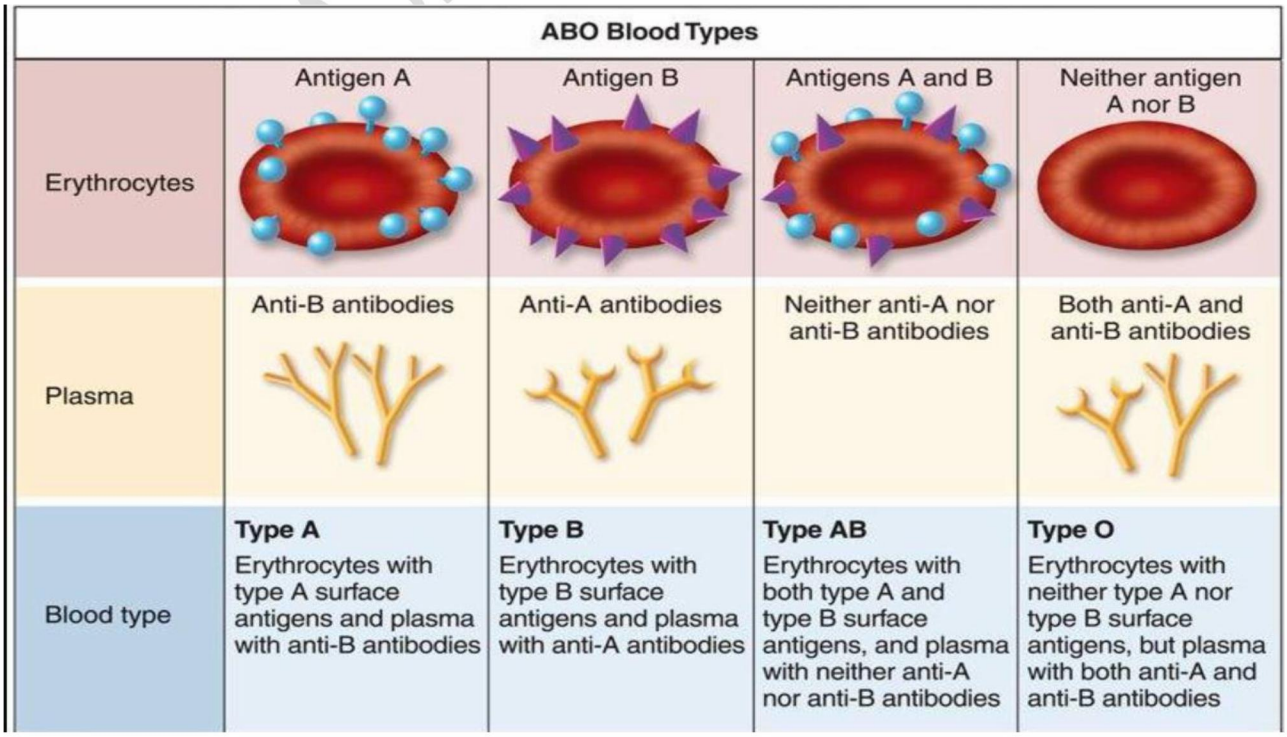
blood has usually been administered through an 18- to 20-gauge IV needle or catheter with the belief being that using smaller needles may slow the infusion and damage blood cells (hemolysis).

Types of Blood transfusion

Component

1.Whole blood 2. PRBCs 3. Platelets-random 4. Plasma

5. Platelets-single donor 6. Granulocytes 7. Lymphoeytes Cryoprecipitate



your health care providers can determine which type of blood you can safely receive:

1. If you have type A blood, you can only receive types A and O blood.
2. If you have type B blood, you can only receive types B and O blood.
3. If you have type AB blood, you can receive types A, B, AB, and O blood.
4. If you have type O blood, you can only receive type O blood.
5. If you are Rh+, you can receive Rh+ or Rh- blood.
6. If you are Rh-, you can only receive Rh- blood.

Nursing intervention Preprocedure

1. Confirm that the transfusion has been prescribed.
2. Check that patient's blood has been typed and cross-matched.
3. Verify that patient has signed a written consent form per institution or agency policy and agrees to procedure.
4. Explain procedure to patient. Instruct patient in signs and symptoms of transfusion reaction (itching, hives, swelling, shortness of breath, fever, chills).
5. Take patient's temperature, pulse, respiration, blood pressure and assess fluid volume status (e.g., auscultate lungs, assess for jugular venous distention) to serve as a baseline for comparison during transfusion.
6. Note if signs of increased fluid overload present (e.g., heart failure), contact primary provider to discuss potential need for a prescription for diuretic, as warranted.
7. Use hand hygiene and wear gloves in accordance with standard precautions.
8. Use appropriately sized needle for insertion in a peripheral vein . a Use special tubing that contains a blood filter to screen out fibrin clots and other particulate matter. Do not vent blood container

Nursing intervention undergoing Procedure

1. Obtain packed red blood cells (PRBCs) from the blood bank after the IV line is started. (Institution policy may limit release to only 1 unit at a time.)
2. Double-check labels with another nurse or physician to ensure that the ABO group and Rh type agree with the compatibility record. Check to see that number and type on donor blood label and on patient's medical record are

correct. Confirm patient's identification by asking the patient's name and checking the identification wristband.

3. Check blood for gas bubbles and any unusual color or cloudiness. (Gas bubbles may indicate bacterial growth.
Abnormal color or cloudiness may be a sign of hemolysis.)

4. Make sure that PRBC transfusion is initiated within 30 minutes after removal of PRBCs from blood bank refrigerator.

5. For the first 15 minutes, run the transfusion slowly—no faster than 5 mL/min. Observe patient carefully for adverse effects. If no adverse effects occur during the first 15 minutes, increase the flow rate unless patient is at high risk for circulatory overload

6- Monitor closely for 15–30 minutes to detect signs of reaction. Monitor vital signs at regular intervals per institution or agency policy; compare results with baseline measurements. Increase frequency of measurements based on patient's condition. Observe patient frequently throughout the transfusion for any signs of adverse reaction, including restlessness, hives, nausea, vomiting, torso or back pain, shortness of breath, flushing, hematuria, fever, or chills. Should any adverse reaction occur, stop infusion immediately, notify primary provider, and follow the agency's transfusion reaction standard.

7- Note that administration time does not exceed 4 hours because of increased risk of bacterial proliferation.

8- Be alert for signs of adverse reactions: circulatory overload, sepsis, febrile reaction, allergic reaction, and acute hemolytic reaction.

9- Change blood tubing after every 2 units transfused to decrease chance of bacterial contamination.

Nursing Intervention Post procedure

1. Obtain vital signs and breath sounds; compare with baseline measurements. If signs of increased fluid overload present (e.g., heart failure), consider obtaining prescription for diuretic as warranted.

2. Dispose of used materials properly.

3. Document procedure in patient's medical record, including patient assessment findings and tolerance to procedure.

4. Monitor patient for response to and effectiveness of procedure. If patient is at risk, monitor for at least 6 hours for signs of transfusion associated circulatory overload (TACO); also monitor for signs of delayed hemolytic reaction.

Thirteenth Week

Learning Objective

The student should be able to identify

1.To Defines the Oxygenation

2. To Determine the Anatomy and Physiology of Respiration

3. To Determine the Function of respiratory system

4. To Describe the Internal and external respiration

5. To Determine the Name of Muscle Groups of Inhalation

6. To Describe the Factors Affecting Respiratory Functioning

7. To Determine the Assessing oxygenation (diagnostic tests)

8. To Determine the Manifestations of Altered Respiratory Function: -

9. To Describe the Nursing care for patient with respiratory disorder

Lecture Duration: 2 hours of theory + 4 hours of practice

Activities used

1. Classroom Interactive Explanation

2. Brainstorming Techniques Questions

3. Group Assignment

Evaluation Methods:

1. Immediate feedback

2. Involving students in self-assessment (correcting their own mistakes).

3. Solving the quiz questions as a class activity at the end of the lecture.

Administration of 02

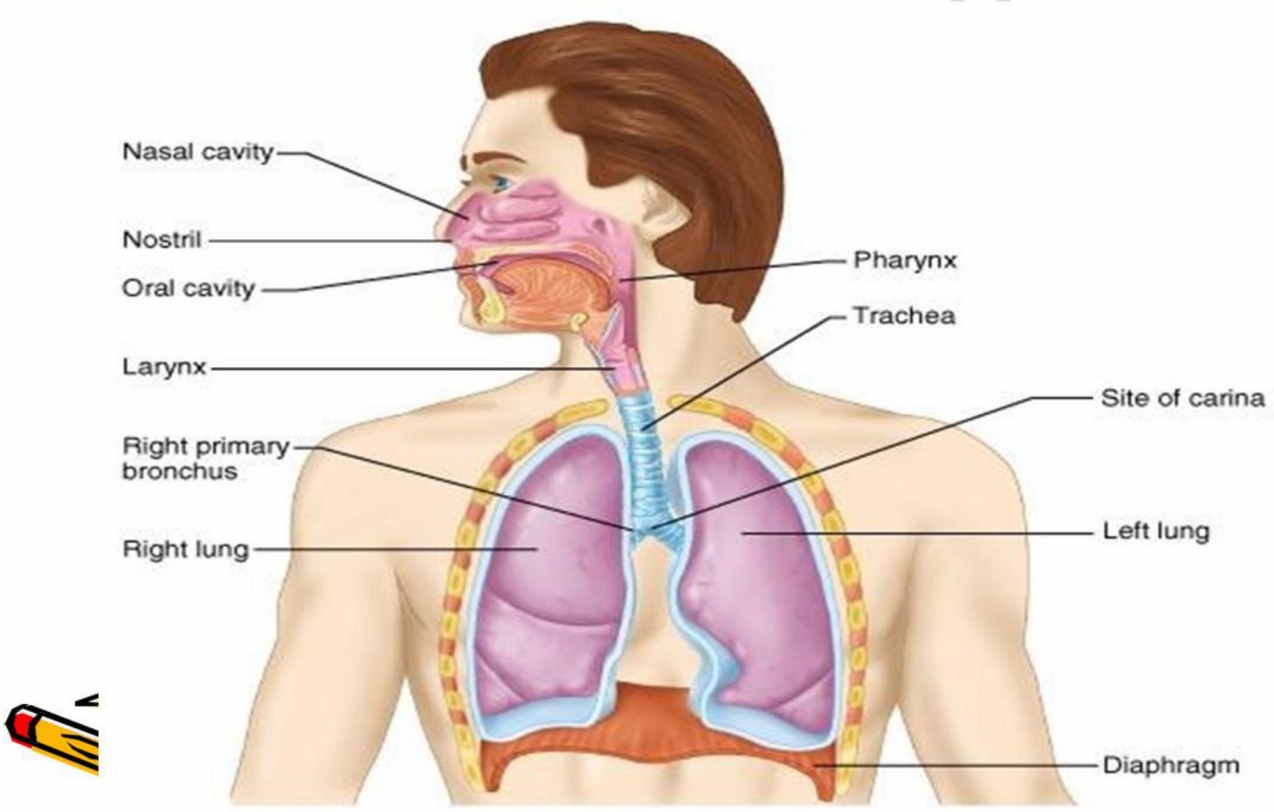
Oxygenation: refers to the process of treating a patient with oxygen, or of combining a medication or other substance with oxygen.

Anatomy and Physiology of Respiration

a-The upper airway is composed of the mouth, nose, pharynx, larynx, and epiglottis. Their main functions are to warm, filter, and humidify inspired air.

b- The lower airway includes the trachea, right and left main stem bronchi, segmental bronchi, terminal bronchioles, and the lungs.

Cilia, which are microscopic hair-like projections, propel trapped material and accompanying mucus toward the upper airway so they can be removed by coughing.



At the end of the terminal bronchioles there are clusters of alveoli (singular, alveolus), small air sacs. The wall of each alveolus is made of a single-cell layer of squamous epithelium. This thin wall allows for exchange of gases with the capillaries covering the alveoli. The average adult has more than 300 million alveoli.

Function of respiratory system

1-**Ventilation** is the movement of air into and out of the lungs. has two phases:

Inhalation (inspiration), involves movement air into the lungs.

Exhalation (expiration) is the movement of air out of the lungs.

2-Respiration: - gas exchange, occurs at the terminal alveolar capillary system. Gases are exchanged between the air and blood via the dense network of capillaries in the respiratory portion of the lungs and the thin alveolar walls.

Internal and external respiration

Internal respiration: Internal respiration is exchange of O2 and CO2 between capillaries and tissues

External respiration is the process of gas exchange between alveoli and tissues.

3- Diffusion: - is the movement of gas or particles from areas of higher pressure or concentration to areas of lower pressure or concentration.

4- Perfusion: - oxygenated capillary blood passes through the tissues of the body in the process called perfusion. The amount of blood flowing through the lungs is a factor in the amount of oxygen and other gases that are exchanged.

Hypoxia: is a condition in which an inadequate amount of oxygen is available to cells. The most common symptoms of hypoxia are

1-dyspnea (difficulty breathing),

2-elevated blood pressure,

3-increased respiratory and pulse rates,

4-pallor,

5-cyanosis,

6-Anxiety,

7-restlessness,

8-confusion.

The Name of Muscle Groups of Inhalation

A. Main respiratory muscles

1- Diaphragm:

2- External intercostal muscles

B. Accessory muscles assist in elevating ribs:

1. sternocleidomastiod
2. serratus anterior
3. pectoralis minor
4. scalene muscles

Factors Affecting Respiratory Functioning

1- Presence of disease: - people with renal or cardiac disorders often have compromised respiratory functioning.

2- Developmental Considerations: -The respiratory rate is more rapid in infants than at any other age.

3-Medications: - Opioids are chemical agents that depress the respiratory center.

4- Lifestyle:

a) People who exercise three to six times/week can better respond to stressors.

b) Cigarette smoking is a major contributor to lung and respiratory distress.

5- Environment: - Occupational exposure to asbestos, silica, or coal dust, as well as environmental pollution, can lead to chronic pulmonary disease.

6- Psychological Health: - Many psychological factors and conditions can affect the respiratory system (Anxiety and stress).

Assessing oxygenation (diagnostic tests)

1- Pulmonary Function Studies: - are a group of tests used to evaluate patients with respiratory disorders

Exercise testing: helps evaluate dyspnea during exertion.

Spirometry: - measures the volume of air in liters exhaled or inhaled by a patient.

2- Sputum Culture to detect infection.

3- Arterial Blood gasses (ABG): arterial blood gasses include O2, CO2, and pH. of the blood.

4- Chest X-ray

5- Pulse Oximetry: - is a noninvasive technique that measures the arterial oxyhemoglobin saturation (SaO2 or SpO2) of arterial blood.

Manifestations of Altered Respiratory Function: -

1) Cough
2) Sputum Production
3) Shortness of Breath
4) Chest Pain
5) Abnormal Breath Sounds
6) Accessory Muscle Use
7) Cyanosis
8) Clubbing fingers.

Nursing care for patient with respiratory disorder

1.Airway maintenance

trachea, bronchi, and large airway should be free from obstruction, this include:

1) Humidification
2) Nebulization
3) Cough & deep-breathing techniques
4) Chest physiotherapy (percussion, vibration, and postural drainage).
5) Suctioning techniques
6) Artificial airway (endotracheal tube, tracheostomy, and oral airway)

2- Maintaining & promoting oxygenation

Oxygen therapy; oxygen is supplied to the patient bedside either by oxygen tank or through a permanent wall-piped system.

Method of oxygen delivery: - (face mask, nasal canula, T-peace, venture mask, and nonrebreather mask with reservoir bag

3- Positioning

A proper position allows free movement of the diaphragm and expansion of the chest wall.

4- Restoration of cardiopulmonary function: Cardiopulmonary resuscitation (CPR) performed for patient with cardiac arrest

Basic CPR consist of cardiac massage & mouth to mouth or mouth to nose breathing

Advanced CPR consist of: - cardiac massage, mouth to mouth or mouth to nose breathing, defibrillation, and medication

Fourteenth Week

Learning Objective

The student should be able to identify

1.To Defines the Nutrients (Food or Diet)

2. To Determine the Basal Metabolism Requirements:

3. To Determine the Requirement of the Foods

4. To Determine the Fluids and Electrolytes

5. To Describe the Primary Functions of Water

6. To Identify the Nasogastric intubation

7. To Determine the Gastric gavages and Nursing care

8. To Determine the Gastric lavage and Nursing care

Lecture Duration: 2 hours of theory + 4 hours of practice

Activities used

1. Classroom Interactive Explanation

2. Brainstorming Techniques Questions

3. Group Assignment

Evaluation Methods:

1. Immediate feedback

2. Involving students in self-assessment (correcting their own mistakes).

3. Solving the quiz questions as a class activity at the end of the lecture.

Enteral Feeding

Nutrients (Food or Diet) are specific biochemical substances used by the body for growth, development, activity, reproduction, lactation, health maintenance and recovery from illness or injury.

There are six classes of nutrients, Supply-energy group (carbohydrates, protein and lipids), and regulation of body processes group (vitamins, minerals and water).

Basic Metabolic Requirements

Basic Metabolism

is the amount of energy required to carry on the involuntary activities of the body at rest, as maintaining body temperature and muscle tone, producing and releasing secretions, gastro-intestinal movements, inflating the lungs and beating heart.

Males have a higher basal metabolic rate than females, because of their larger muscle mass and hormones.

The Requirement of the Foods: it depends on:

1. The demands of the body for growth and tissue repair.
2. Developmental considerations.
3. Sex (Gender).
4. Activity and climate.
5. Emotional status.
6. Pregnancy.
7. Elevated some hormones (e.g. Adrenaline and thyroid hormones).
8. Health status.
9. Medications administered.
10. Socio-cultural and Psychological factors.

Appetite

Is a natural first defense against hunger.

Hunger

Is a sensation, which tells us that our body needs nourishment.

Fluids and Electrolytes

Water is important to maintain fluid balance in the body.

Water is the primary body fluid; it is the most important nutrient of life, although life can be sustained for many days without food, humans can survive for only a few days without water.

Primary Functions of Water

1. Provide medium for transporting nutrients to cells and wastes from cells and for transporting substances as hormones, enzymes and blood cells.
2. Facilitate cellular metabolism and chemical functioning.
3. Consider solvent for electrolytes and non-electrolytes.
4. Help maintain normal body temperature.
5. Facilitate digestion and promote elimination.
6. Act as a tissue lubricant.

Urinary Elimination; Elimination from the urinary tract helps to rid the body from waste products. Nurse assist the patient with urination problems to resolve his/her problem related to urination.

The urinary system composes of two kidneys, two ureters, bladder and urethra.

Micturition: is the process of emptying the bladder.

Anuria: The 24 hours urine voided is less than 100 ml (The normal daily urine amount is 1500-2000 ml).

Oliguria- decreased urine voided to (100-400 ml) daily.

Dysuria- Difficult urination.

Polyuria- increased urine excreted.

Urgency- Strong desire to urinate.

Glycosuria- Presence of sugar in urine.

Proteinuria- Presence of protein in urine.

Hematuria- Presence of blood in urine.

Nasogastric intubation: is a medical process involving the insertion of a plastic tube (nasogastric tube, NG tube) through the nose, past the throat, and down into the stomach.

Uses

1. Feeding and administering of drugs. For medication and feeding, a syringe is used for injection into the tube.
2. Treatment for severe anorexia nervosa can include nasogastric feeding to stabilize body weight.
3. Remove gastric secretions patients with gastrointestinal obstructions.
4. in cases of poisoning when a potentially toxic liquid has been ingested,
5. To extract samples of gastric liquid for investigation.

Technique

The health care provider must measure the tube Then the tube is marked at this level to ensure that the tube has been inserted far enough into the patient's stomach.

1. The end of a plastic tube is lubricated (local anesthetic, such as 2% xylocaine gel,
2. Inserted into one of the patient's anterior nostrils. The tube should be directed aiming down and back as it is moved through the nasal cavity and down into the throat.
3. When the tube enters the oropharynx and glides down the posterior pharyngeal wall.
4. Must asked to mimic swallowing while the tube continues to be inserted as the patient swallows.
5. Once the tube is past the pharynx and enters the esophagus, it is easily inserted down into the stomach.
6. Great care must be taken to ensure that the tube has not passed through the larynx into the trachea and down into the bronchi.
7. To ensure proper placement it is recommended to inject of air into the tube, if the air is heard in the stomach with a stethoscope, then the tube is in the correct position.

Gastric gavages: Is a process of feeding the patient through a tube passed into the esophagus and stomach by way of the mouth or nose.

Purpose:

1. To provide food or fluid to patient who is unable to take nourishment by mouth in case of:
   a. Unconsciousness.
   b. Fracture of jaw.
   c. Cleft palate.
   d. Psychosis and delirium patient.
   e. Operations on the mouth or patient with nausea and vomiting.

2. To provide for maximal nutritional recovering from disease for injury.

Important points:

1. Tube feeding must be refrigerated for 15 -20 min.
2. Put patient in semi sitting position.
3. The food given must be fluids or semi-fluids.

Nursing care:

1. Clean the nostril and gastric tube with moistened cotton.
2. Apply water-soluble lubricant to the nostril if it dries.
3. Giving frequent mouth care.
4. Record the intake and output liquid that gives to the patient.
5. Administer some amount of water after feeding to prevent closure of the tube by food particles.

Gastric lavage: it means emptying the content of the stomach by insertion of N.G. Tube from mouth or nose to the stomach.

The solution used for gastric lavage are physiological saline, 1% sodium bicarbonate, plain water or a specific antidote for the poison.

The procedure is performed before and after surgery to remove irritants or toxic substances and possibly before such examinations as endoscopy or gastroscopy.

Nursing care:

1. Clean the noise and mouth before and after procedure.
2. Collecting the specimens to measuring.
3. Return the procedure until solution from the stomach is clean.
4. Clean the equipment that used in procedure.
5. Record the time of procedure and abnormal signs of patient in chart.

Fifteenth Week

Learning Objective

The student should be able to identify

1.To Defines the Urinary Catheterization

2. To Determine the Purposes of Urinary Catheterization

3. To Determine the Urinary Catheter Sizes

4. To Describe the Types of urinary catheters,

5. To Determine the Hazards of Catheterization;

6. To Describe the Nursing Performance and Care

Lecture Duration: 2 hours of theory + 4 hours of practice

Activities used

1. Classroom Interactive Explanation

2. Brainstorming Techniques Questions

3. Group Assignment

Evaluation Methods:

1. Immediate feedback

2. Involving students in self-assessment (correcting their own mistakes).

3. Solving the quiz questions as a class activity at the end of the lecture.

Urinary Catheterization

Urinary catheterization is the insertion of a catheter through the urethra into the urinary bladder.

Purposes of Urinary Catheterization

1. To relieve discomfort due to a physical obstruction to urine flow, such as a urinary tract stone, a bladder tumor or an enlarged prostate.
2. To drain urine when the bladder's muscles or nerves are not working properly.
3. Measurement of urine output for critically ill patients such as unconscious and comatose.
4. To obtain a clean urine sample is that is not contaminate with bacteria from the patient's hands or genitals.
5. To collect urine during diagnostic studies of the urinary tract.
6. To empty the bladder completely prior to surgery.

Urinary Catheter Sizes

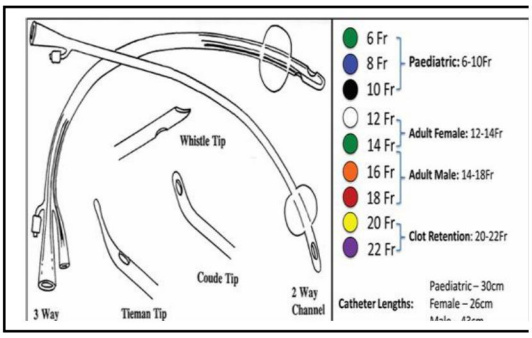
The French scale is used to denote the size of Catheters come in various sizes:

a. Number 8 - 10 Fr. used for children.

b. Number 12 - 14 Fr. used for female adults.

c. Number 14 - 18 Fr. used for male adults.

d. Number 20 - 22Fr. used for clot retention.

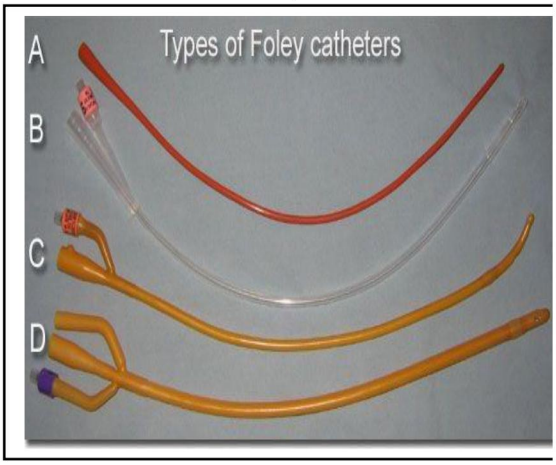


A larger sized catheter is used for a male because it is stiffer, thus easier to push the distance of the male urethra.

Types of urinary catheters, including:

1.Internal urinary catheter

fixed Catheters, This type may be used for a long or short period according to the patient's need.



The catheter is inserted in one of the following two ways:

The first: by inserting it through the urethra.

The second: by inserting it into an opening through the abdomen.

2.External Urinary Catheters or Condom Catheters

This catheter is similar to a condom, but is attached to the head of the penis only. It is often used for those who suffer from mental retardation.

This type is better than the previous one because

It does not cause skin inflammation like internal catheters.

Easier to install and remove.

Less likely to develop a bacterial infection.

Hazards of Catheterization;

1. Inflammation of the urinary tract
2. Sepsis
3. Trauma, Injury (males).

Nursing Performance and Care:

1. Explain to the client what to do and wash hands and depend sterile technique.
2. Provide for client privacy with in the appropriate and comfortable posture.
3. Place a waterproof drape under the patient buttocks
4. Wear gloves, apply 10-15ml of xylocaine gel to the opening of the penis, and wait 5 minutes for the gel to take effect before inserting the catheter.
5. Lubricate the catheter (1 - 2 inches for females, 6 – 7 inches for males) and place it with the drainage end inside the urine collection bottle.
6. Attach the syringe to the indwelling catheter inflation hub and test the balloon to ensure suitability.
7. Cleanse the entryway

for female

* use the nondominant hand to spread the labia.
* cleansing by cotton ball with the forceps in your dominant hand and wipe one side of the labia major.

For Male

* Use nondominant hand to grasp the penis just below the glans.

* Hold it upright with slight tension.

* cleansing cotton ball with the forceps in your dominant hand and wipe from circular motion around the glans,

8. Insert the catheter;

* Grasp the catheter firmly 2-3 inches from the tip, and ask the client to take a slow deep breath and insert the catheter as the client exhales.

* Advance the catheter 2 inches further after the urine begins to follow through it to be sure that it is in the bladder.

9. Secure the catheter tubing to the inner thigh of the patient or clients hang the urine bag below the level of the bladder.

10. Document the catheterization process including catheter size and results in the client record.