Nursing Practical III

NSG 324

University of Ibadan Distance Learning Centre
Open and Distance Learning Course Series Development

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Vice-Chancellor's Message

The Distance Learning Centre is building on a solid tradition of over two decades of service in the provision of External Studies Programme and now Distance Learning Education in Nigeria and beyond. The Distance Learning mode to which we are committed is providing access to many deserving Nigerians in having access to higher education especially those who by the nature of their engagement do not have the luxury of full time education. Recently, it is contributing in no small measure to providing places for teeming Nigerian youths who for one reason or the other could not get admission into the conventional universities.

These course materials have been written by writers specially trained in ODL course delivery. The writers have made great efforts to provide up to date information, knowledge and skills in the different disciplines and ensure that the materials are user-friendly.

In addition to provision of course materials in print and e-format, a lot of Information Technology input has also gone into the deployment of course materials. Most of them can be downloaded from the DLC website and are available in audio format which you can also download into your mobile phones, IPod, MP3 among other devices to allow you listen to the audio study sessions. Some of the study session materials have been scripted and are being broadcast on the university's Diamond Radio FM 101.1, while others have been delivered and captured in audio-visual format in a classroom environment for use by our students. Detailed information on availability and access is available on the website. We will continue in our efforts to provide and review course materials for our courses.

However, for you to take advantage of these formats, you will need to improve on your I.T. skills and develop requisite distance learning Culture. It is well known that, for efficient and effective provision of Distance learning education, availability of appropriate and relevant course materials is a *sine qua non*. So also, is the availability of multiple plat form for the convenience of our students. It is in fulfilment of this, that series of course materials are being written to enable our students study at their own pace and convenience.

It is our hope that you will put these course materials to the best use.

Prof. Abel Idowu Olayinka
Vice-Chancellor

Foreword

As part of its vision of providing education for "Liberty and Development" for Nigerians and the International Community, the University of Ibadan, Distance Learning Centre has recently embarked on a vigorous repositioning agenda which aimed at embracing a holistic and all encompassing approach to the delivery of its Open Distance Learning (ODL) programmes. Thus we are committed to global best practices in distance learning provision. Apart from providing an efficient administrative and academic support for our students, we are committed to providing educational resource materials for the use of our students. We are convinced that, without an up-to-date, learner-friendly and distance learning compliant course materials, there cannot be any basis to lay claim to being a provider of distance learning education. Indeed, availability of appropriate course materials in multiple formats is the hub of any distance learning provision worldwide.

In view of the above, we are vigorously pursuing as a matter of priority, the provision of credible, learner-friendly and interactive course materials for all our courses. We commissioned the authoring of, and review of course materials to teams of experts and their outputs were subjected to rigorous peer review to ensure standard. The approach not only emphasizes cognitive knowledge, but also skills and humane values which are at the core of education, even in an ICT age.

The development of the materials which is on-going also had input from experienced editors and illustrators who have ensured that they are accurate, current and learner-friendly. They are specially written with distance learners in mind. This is very important because, distance learning involves non-residential students who can often feel isolated from the community of learners.

It is important to note that, for a distance learner to excel there is the need to source and read relevant materials apart from this course material. Therefore, adequate supplementary reading materials as well as other information sources are suggested in the course materials.

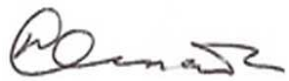
Apart from the responsibility for you to read this course material with others, you are also advised to seek assistance from your course facilitators especially academic advisors during your study even before the interactive session which is by design for revision. Your academic advisors will assist you using convenient technology including Google Hang Out, You Tube, Talk Fusion, etc. but you have to take advantage of these. It is also going to be of immense advantage if you complete assignments as at when due so as to have necessary feedbacks as a guide.

The implication of the above is that, a distance learner has a responsibility to develop requisite distance learning culture which includes diligent and disciplined self-study, seeking available administrative and academic support and acquisition of basic information technology skills. This is why you are encouraged to develop your computer skills by availing yourself the opportunity of training that the Centre's provide and put these into use.

In conclusion, it is envisaged that the course materials would also be useful for the regular students of tertiary institutions in Nigeria who are faced with a dearth of high quality textbooks. We are therefore, delighted to present these titles to both our distance learning students and the university's regular students. We are confident that the materials will be an invaluable resource to all.

We would like to thank all our authors, reviewers and production staff for the high quality of work.

Best wishes.



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Course Information

Course Code & Course Name: NSG 324: Nursing Practical III

Year: 300-Level

Semester: First & Second Semester
About the Course: This course is designed to help students acquire basic clinical knowledge and practical skills related gastrointestinal system.
Lecturer Information:

- **Facilitators:** Mrs. Helen N. Obilor and Mrs. Akinwaare
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- **Consultation:** Through SMS, email and facebook.

Introduction to the Course:
You are welcome to NSG 324. This is an online course that runs in the distance learning mode. It is a compulsory course open to all nursing students and it is a 3-unit course that has 45 hours of interaction among teachers and learners for the period of the course.
Aim: The course aims at introducing nursing procedures specific to the gastrointestinal system through the use of a nursing process.

Table of Contents

Study Session 1: Assessment of the Abdomen

Introduction

Abdomen constitutes the part of the body between the thorax and pelvis: in humans and in other mammals. The region enclosed by the abdomen is termed the abdominal cavity. In this study session you will learn how to: locate and describe abdominal organs, prepare the client for the procedure and carryout abdominal examination.
This study session is a follow up to study session 1 of NSG 217, where you have learnt about the components of health assessment and assessment techniques (Inspection, palpation, percussion and auscultation). This study session will conclude with a demonstration of this procedure on a client (volunteer/mannequin).

Learning Outcomes for Study Session 1

When you have studied this session, you should be able to:

1.1 Describe the classification of abdominal organs into regions and quadrants
1.2 Describe the sequence of abdominal examination and its rationale
1.3 Describe the nursing procedure of the components of abdominal assessment

1.1 Classification of the Abdominal Organs

To locate and describe the abdominal organs, there are two methods of subdividing the abdomen that may be used: namely the **quadrants** and **region**.

To divide the abdomen into quadrant: A vertical imaginary line from the xiphoid process to the pubic symphysis and a horizontal line across the umbilicus, divides the abdomen into four quadrants: right upper quadrant, left upper quadrant, right lower quadrant and left lower quadrant (see figure 1.1).

To divide the abdomen into regions: Using this method, the abdomen is divided into nine regions namely the right hypochondriac, right lumber, right inguinal, epigastric, umbilical, hypogastric, left hypochondriac, left lumbar, left inguinal by two imaginary vertical lines that extend superiorly from the midpoints of the inguinal ligaments, and two horizontal lines, one at the level of the edge of the lower ribs and the other at the level of the iliac crests (see figure 1.2).

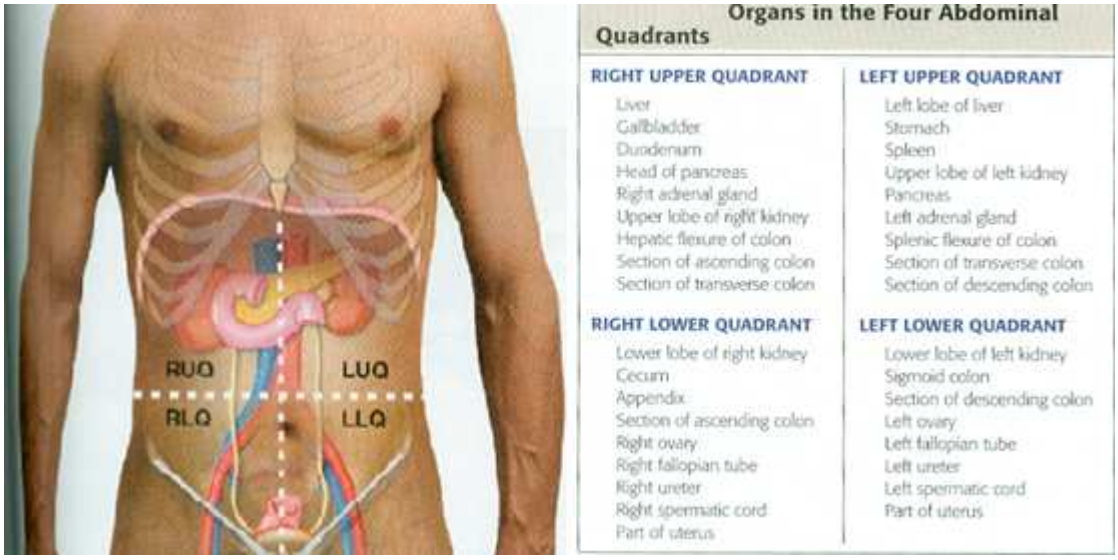


Figure 1.1: *The four abdominal quadrant & the underlying organs*
Source:*Berman, Snyder, Kozier and Erb, 2008*

1.2 Sequence of Abdominal Examination

To assess the abdomen, all the techniques of physical examinations are involved. You the assessment starts with inspection, followed by auscultation, percussion and palpation.

Rationale: Auscultation is done before percussion and palpation because of the movement or stimulation of the bowel during percussion and palpation which can increase the bowel motility and heighten the bowel sounds, thereby altering result.

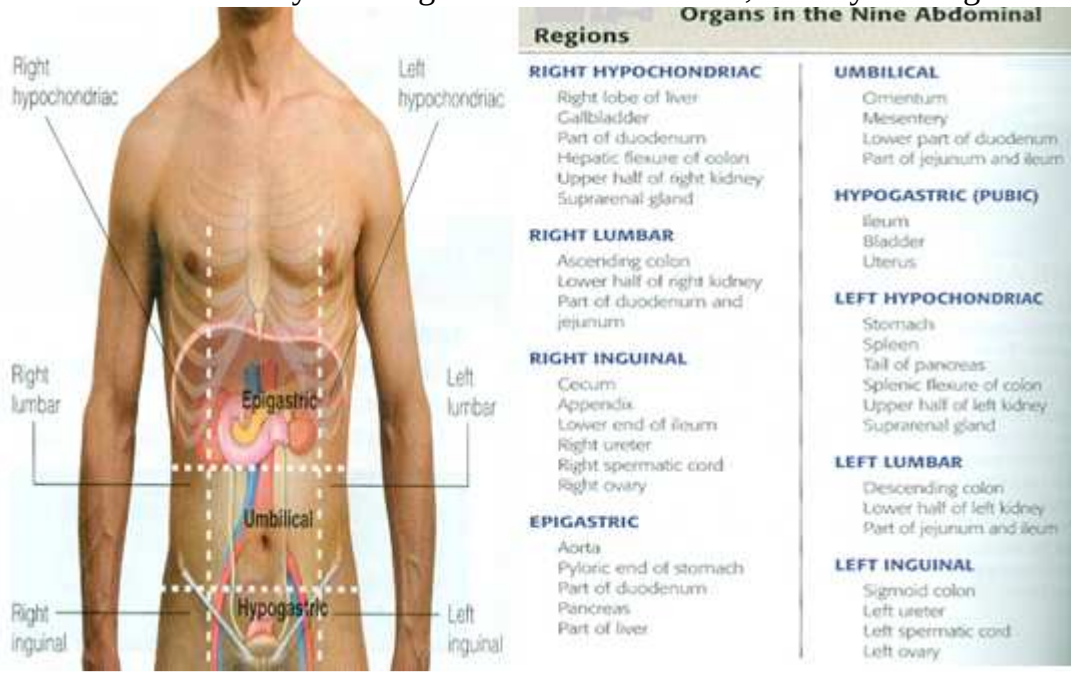


Figure 1.2: *The four abdominal quadrant & the underlying organs*
Source:*Berman, Snyder, Kozier and Erb, 2008*

So far, it is anticipated that you have learnt the classification of abdominal organs into regions and quadrants and then understandthe sequence of abdominal examination. You may now proceed to study the nursing procedure for abdominal assessment.

In-text question
Write out the order of abdominal examination

In-text answer
Inspection
Auscultation
Percussion and
Palpation.

1.3 Abdominal Assessment Procedure

The abdominal assessment procedure is made up of two components: history taking and physical examination. What you need to know and assess under these components will be discussed under implementation.

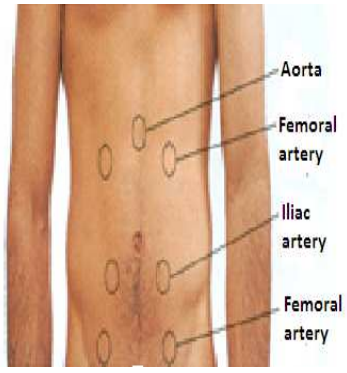
1.3.1 Requirement

1. Drape
2. Stethoscope
3. Tape rule
4. Water soluble skin marking pencil
5. Examining light

1.3.2 Implementation

1. Prior the procedure,
   A. Introduce self and explain the procedure to the client
   B. Ask the client to urinate
   Rationale: Empty bladder makes the assessment more comfortable for the client.
   C. Ensure that the room is warm since the client will be exposed
   D. Wash hands
   E. Provide privacy for the client
2. Obtain client's history on any of the following:
   A. Incidence of abdominal pain: its location, onset, pattern, quality, frequency and associated symptom (e.g. nausea, vomiting, diarrhoea).
   B. Bowel habits: incidence of constipation or diarrhoea
   C. Change in appetite, food intolerances, and foods ingested in the last 24 hours
   D. Specific gastrointestinal signs and symptoms (e.g., heartburn, flatulence and/belching, difficulty swallowing, hematemesis, blood or mucous in stool, and aggravating and alleviating factors).
   E. Previous health problems and treatment (e.g., stomach ulcer, gallbladder surgery, history of jaundice).
3. Assist the client to a supine position, with the arms placed comfortably at the sides.
4. Place small pillows beneath the knees and the head
   Rationale: to reduce tension in the abdominal muscles.
5. Expose the client's abdomen only from the chest line to the pubic area
   Rationale: To avoid shilling and shivering which can tense the abdominal muscles, and also to avoid undue exposure of the client's body.

PHYSICAL EXAMINATION OF THE ABDOMEN		
	Normal Findings	**Deviation from normal**
Inspection of the abdomen 6. Inspect the abdomen for skin integrity	Unblemished skin, Uniform colour, stretch mark or surgical scars	Rashes, skin lesions, Tense glistening skin (may indicate ascites, oedema.
7. Inspect the abdomen for contour and symmetry • Observe the abdominal contour which is between the anterior rib margin and the pubic bone, while standing at the client side.	Flat, rounded (convex), or scaphoid (concave)	Distended
• Ask the client to take deep breath and hold it. **Rationale:** This makes an enlarged liver or spleen more obvious	No evidence of liver or spleen enlargement	Evidence of liver or spleen enlargement
• Assess the symmetry of the contour while standing at the foot of the bed. • If distention is present, measure the abdominal girth by placing a tape rule around the abdomen at the level of umbilicus.	Symmetric contour	Asymmetric contour, e.g., localized protrusions (hernia, tumour)
8. Observe abdominal movements associated with respiration, peristalsis, or aortic pulsations.	• Symmetric movement caused by respiration. • Visible peristalsis in very lean individuals. • Aortic pulsations in thin persons at the epigastric region.	• Limited movement due to pain or disease. • Visible peristalsis in non-lean clients (possible bowel obstruction). • Marked aortic pulsations
9. Observe the vascular pattern	No visible vascular pattern	Visible vascular pattern (dilated vein is associated with liver disease, ascites, and venocaval obstruction.
Auscultation of the abdomen 10. Auscultate the abdomen for bowel sounds, vascular sounds, and peritoneal fiction rubs. **NB:** Warm the hands and the stethoscope diaphragms. **Rationale:**Cold hands and a cold stethoscope may cause the client to contract the abdominal	• Audible bowel sounds • Absence of arterial bruits • Absence of friction rub	• Hypoactive, i.e. extremely soft and infrequent (e.g., one per minute) Hypoactive sounds indicate decreased motility and are usually associated with manipulation of the bowel

muscles, and these contractions may be heard during auscultation. **For Bowel Sounds** • Use the diaphragm of the stethoscope • **Rationale:**Intestinal sounds are relatively high pitched and best accentuated by the diaphragm. Light pressure with the stethoscope is adequate. • Ask when the client last ate. **Rationale:**Shortly after or long after eating, bowel sounds may normally increase. They are loudest when a meal is long overdue. ***NB:*** Four to 7 hours after a meal, bowelsounds may be heard continuously over the ileocecal valve area while the digestive contents from the small intestine empty through the valve into the large intestine. • Place diaphragm of the stetho-scope in each of the four quadrants of the abdomen. • Listen for active bowel sounds-irregular gurgling noises occurring about every 5 to 20 seconds. The duration of a single sound may range from less than a second to more than several second (see figure 1.3). **For Vascular Sounds** • Use the bell of the stethoscope over the aorta, renal arteries, iliac arteries, and femoral arteries (see figure 1.4). • Listen for bruits. These are "swishing" sounds heard over major arteries during systole or, less commonly, systole and diastole. **Peritoneal Friction Rubs** • Peritoneal friction rubs are	 **Figure 1.3:** Auscultating the abdomen for bowel sound source: Berman, Snyder, Kozier and Erb, 20008  **Figure 1.4:** Abdominal site	during surgery, inflammation, paralytic ileus, or late bowel obstruction. • Hyperactive/increased, i.e., high pitched/loud. Hyperactive sounds indicate increased intestinal motility and are usually associated with diarrhoea, an early bowel obstruction, or the use of laxatives. • True absence of sounds (none heard in 3 to 5 minutes) indicates a cessation of intestinal motility. • Loud bruit over aortic area (possible aneurysm) • Bruit over renal or iliac arteries

rough, grating sounds like two pieces of leather rubbing together. Friction rubs may be caused by inflammation, infection, or abnormal growth. • To auscultate the splenic site, place the stethoscope over the left lower rib cage in the anterior axillary line, and ask the client to take a deep breath. A deep breath may accentuate the sound of a friction rub area. • To auscultate the liver site, place the stethoscope over the lower right rib cage.	for the auscultation of the vascular sound **source:** Berman, Snyder, Kozier and Erb, 20008	
Percussion of the abdomen 11. Percuss several areas in each of the four quadrants to determine presence of tympany (gas in stomach and intestines) and dullness (decrease, absence, or flatness of resonance over solid masses or fluid). Use a systematic pattern: Begin in the lower right quadrant, proceed to the upper right quadrant, the upper left quadrant, and the lower left quadrant.	Tympany over the stomach and gas-filled bowels; dullness, especially over the liver and spleen, or a full bladder.	Large dull areas (associated with presence of fluid or a tumour)
12. Percuss the liver to determine its size.		Enlarged size (associated with liver disease)
Palpation of the Abdomen 13. Perform light palpation first to detect areas of tenderness and/or muscle guarding. Systematically explore all four quadrants. Ensure that the client's position is appropriate for relaxation of the abdominal muscles, and warm the hands. **Rationale:**Cold hands can elicit muscle tension and thus impede palpatory evaluation.	6 to 12cm (2.5 - 3.5 inches) in the mid-clavicular line; 4 to 8cm (1.5 - 3.5) at the mid-sternal line No tenderness, relaxed abdomen with smooth, consistent tension	Tenderness and hypersensitivity superficial masses. Localized areas of increased tension
Light Palpation		

• Hold the palm of your hand slightly above the client's abdomen, with your fingers parallel to the abdomen. • Depress the abdominal wall lightly, about 1 cm or to the depth of the subcutaneous tissue, with the pads of your fingers. • Move the finger pads in a slight circular motion. • Note areas of tenderness or superficial pain, masses, and muscle guarding. To determine areas of tenderness, ask the client to tell you about them and watch for changes in the client's facial expression. • If the client is excessively ticklish, begin by pressing your hand ontop of the client's hand while pressing lightly. Then slide your hand off the client's and onto the abdomen to continue the examination. 14. Perform deep palpation over all four quadrants. • Palpate sensitive areas last. • Press the distal half of the palmar surface of the finger of into the abdominal wall. **Or** Use the bimanual method of palpation (in which the non-dominant hand placed over and superimposed on the extended dominant hand on the client body part). • Depress the abdominal wall about 4 to 5cm (1 ½ to 2 in). • Note masses and the structure of underlying contents. If a mass is present, determine it size, location, mobility contour, consistency and tenderness. Normal abdominal structures that may be mistaken for masses include the lateral borders of	Tenderness may be present near xiphoid process, over cecum, and over sigmoid colon	Generalized or localized areas of tenderness. Mobile or fixed masses

the rectus abdominis muscles, the faeces-filled colon, the aorta, and the uterus. • Check for rebound tenderness in areas where the client complains of pain. With one hand, press slowly and deeply over the area indicated and then lift the hand quickly. If the client does not complain of pain during the deep pressure but indicates pain at the release of the pressure, rebound tenderness is present. This can indicate peritoneal inflammation and should be reported to the primary care provider immediately. 15. Palpate the liver to detect enlargement and tenderness. • Stand on the client's right side. • Place your left hand on the posterior thorax at about the nth or 12th rib. This hand is used to push upward and provide support of underlying structures for the subsequent anterior palpation. • Place your right hand along the rib cage at about a 45° angle to the right of the rectus abdominus muscle or parallel to the rectus muscle with the fingers pointing toward the rib cage. • While the client exhales, exert a gradual and gentle downward and forward pressure beneath the costal margin until you reach a depth of 4 to 5 cm (1 1/2 to 2 in.). During expiration, the abdominal wall relaxes, facilitating deep palpation. • Maintain your hand position, and ask the client to inhale deeply. This makes the liver border descend and	• May not be palpable • Border feels smooth	Enlarged (abnormal finding even if liver is smooth and not tender) Smooth but tender, nodular or hard

moves the liver into a palpable position, • While the client inhales, feel the liver border move against your hand. It should feed firm and have a regular contour. If you do not palpate the liver initially, ask the client to take two or three more deep breaths while you maintain or apply slightly more palpation pressure. Livers are harder to palpate in obese, tense, or very physically fit people. • If the liver is enlarged (i.e., Palpable below the costal margin), measure the number of centimetres it extends below the coastal region. **16.** Palpate the bladder by palpating the area above the public symphysis if the client's history indicates possible urinary retention **17.** Document findings in the client record.	Not palpable	Distended and palpable as smooth, round, tense mass (indicates urinary retention)

1.3.3 Evaluation

Relate findings of abdominal assessment to previous assessment data if available.

Activity 1.1

Take a moment to reflect on what you have read so far and seen in the video demonstrations. Based on your nursing experience, what are the components of health assessment that you will focus on a patient with the complaints of abdominal pain and increased bowel movement?

In order to carry out effective abdominal assessment on patients, some important points must be borne in mind. These are highlighted in Box 1.1

Box 1.1: The Abdominal Assessment Skill

It is necessary to explain the procedure to the patients, and ensure that clients empty the bladder, and the examination room kept warm so as to gain their cooperation.

The sequence of abdominal examination is inspection, auscultation, percussion and palpation.

At the end of procedure, it is important to document the procedure and report findings.

Summary of Study Session 1

In study session 1, you have learned that:

1. The abdomen and its underlying organs can be located and described using two methods of classification: regions and quadrants.
2. The sequence of abdominal examination and its rationale
3. The nursing procedure of the abdominal assessment components

Self-Assessment Questions (SAQs) for Study Session 1

Now that you have completed this study session, you can assess how well you have achieved its Learning Outcomes by answering these questions. You can check your answers with the Notes on the Self-Assessment Questions at the end of this Module.

SAQ 1.1

Describe the classification of abdomen into quadrants and regions.

SAQ 1.2

State the sequence of physical examination of the abdomen

SAQ 1.3

State the components of an abdominal assessment procedure?

Notes on Self Assessment Questions for Study Session 1

SAQ 1.1

The abdomen is divided into four quadrants using one vertical and horizontal imaginary line, which are the right upper quadrant, left upper quadrant, right lower quadrant and left lower quadrant. While the abdomen is divided into nine regions using two vertical and horizontal imaginary lines, the right hypochondriac, right lumber, right inguinal, epigastric, umbilical, hypogastric, left hypochondriac, left lumbar, left inguinal.

SAQ 1.2

The sequence of abdominal examination is inspection, auscultation, percussion and palpation.

SAQ 1.3

History taking and physical examination

Study Session 2: Nutrition Methods and Procedures

Introduction

Nutrition is the process of absorbing nutrients from consumed food and processing the nutrients in the body in order to provide energy, maintain/repair tissue integrity and regulate body process. There are many nursing methods and procedures in nutrition.
This study session will focus on optimal nutrition for clients, hospital diets in patient's care and finally, alternative feeding methods.

Learning Outcome of Study Session 2

When you have studied this session, you should be able to:
2.1 Identify nursing interventions needed for optimal nutrition for clients
2.2 Identify the terms used to describe the different hospital diets in patients' care
2.3 State the different alternative feeding methods, its purpose and indications

2.1 Optimal Nutrition

Nutrition is the process of absorbing nutrients from consumed food and processing the nutrients in the body in order to provide energy, maintain/repair tissue integrity and regulate body process. The consumed food can be ingested orally through the mouth, through a Nasogastric tube inserted directly into the stomach/intestine, gastrostomy/jejunostomy, and intravenously in parenteral nutrition.
To maintain health and facilitate patients' recovery from illness, nurses therefore have the responsibility to promote optimal nutrition and a balanced diet for the clients. In this light, nursing intervention includes the following:

1. Provision of an atmosphere that encourages eating
2. Serving of meal/diet to the client
3. Assisting or feeding the client with the served meal
4. Monitoring clients' appetite and food intake
5. Administering enteral and parenteral feedings
6. Monitoring and evaluating for possible signs of nutrition problems
7. Collaborating with physician and dietician about diet order and information on patients' diet respectively.

2.2 Hospital diet

Different terms are used to describe the diets served in the hospital in the management of patients, namely:
Regular diet/standard diet: this is a balanced diet served to a hospitalized client who has no special diet needs in relation to the treatment of a disease process. This diet supplies the metabolic requirement equivalent to that of a sedentary person, which is about 2,000 Kcal.

Special diet: This is a dietthat has been altered or modified either in texture, kilocalories, specific nutrients or consistency for the management of a disease process e.g. diabetes mellitus, renal failure.

Light diet: This is a plainly cooked diet with a minimal amount of fat and fibre designed for clients who are not ready for regular diet and postoperative patients.
Soft diet: This is a low fibre diet that is easily chewed and digested, and ordered for clients who have difficulty with chewing and swallowing.

Clear liquid diet: This diet is limited to water, tea, beverages, clear fruit juice and so on, that is provided for client after certain surgeries or acute gastrointestinal tract (GIT) infection usually to relieve thirst, prevent dehydration and minimize the stimulation of GIT.

Full liquid diet: This is a liquid food/diet at room temperature, provided to clients who have GIT disturbances or clients who cannot tolerate solid or semisolid foods.

Diet as tolerated: This is diet ordered based on clients' appetite, ability to eat and tolerance for certain food.

In-text question
What do you understand by special diet?

In-text answer
Special dietis a dietthat has been altered or modified either in texture, kilocalories, specific nutrients or consistency for the management of a disease process e.g. diabetes mellitus, renal failure.

2.3 Alternative Feeding

This is a feeding method that is used to ensure adequate nutrition when the clients are unable to ingest their food. There are two types of alternative feeding methods, namely: Enteral feeding method and parenteral feeding method.

2.3.1 Enteral Feeding Method

This is achieved by means a nasogastric tube, nasoenteric tubes/nasointestinal tube, and gastrostomy or jejunostomy tube.
Nasogastric tube: It is inserted from one of the nostrils, down the nasopharynx, and into the alimentary tract.
Nasoenteric tubes/nasointestinal tube: It is inserted from one of the nostrils down into the upper small intestine. It is longer the nasogastric tube (at least 40 inches for an adult).
Gastrostomy tube: It placed surgically or by laparoscopy through the abdominal wall into the stomach.
Jejunostomy tube: It placed surgically or by laparoscopy through the abdominal wall into the stomach.

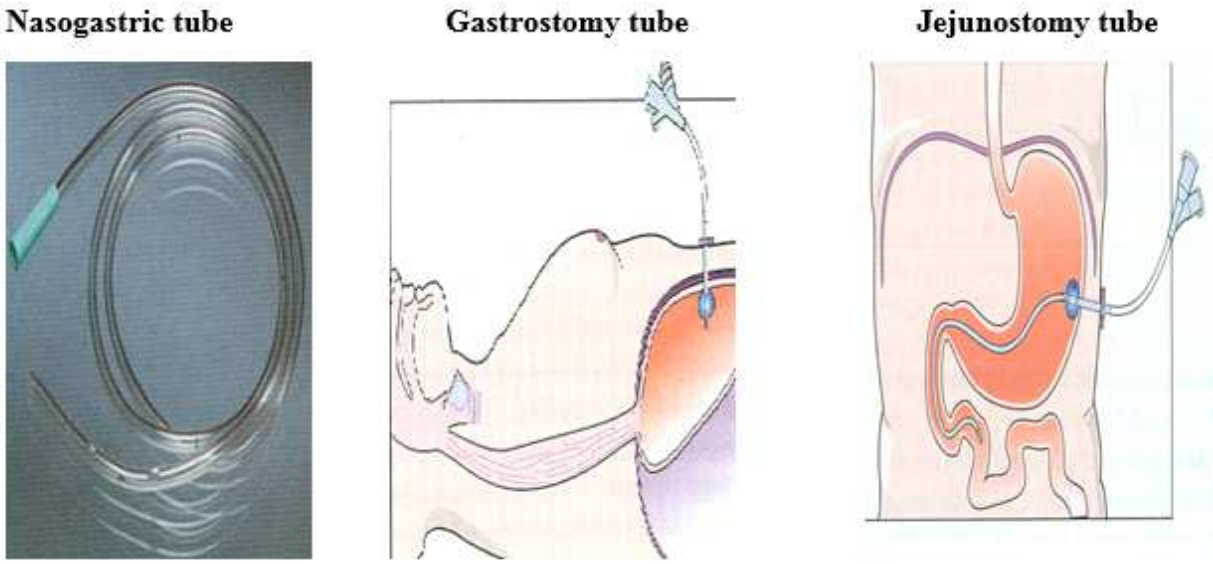


Figure 2.1: *Enteral feeding tubes*
Source: Berman, Snyder, Kozier and Erb, 2008

Purpose of enteral nutrition

- To provide adequate nutrition for patients.

Indication for enteral nutrition

- For client who is unable to ingest foods
- For client with impaired upper gastrointestinal tract
- For client with impaired/interrupted food transport into the small intestine.

Enteral feedings areliquid mixtures of carbohydrate, protein, fat, minerals vitamins and water in required/specified proportions. To achieve optimal nutrition, enteral feedings must be a balanced diet. In this setting, enteral feedings can be prepared/mixed by the nurses in accordance to the clients' body need or physician order using locally available menu/diet such as Maize pap, milk, sugar.
Also the normal/regular diet can be blended with water e.g. Rice and beans with fish. There are also prepared standard formulas that are commercially prepared. Enteral feedings can be administered intermittently or continuously through an open system (feeding barrel/syringe) or closed system (prefilled bottle with drip chamber).

2.2.2 Parenteral Feeding Method

It is the intravenous administration of nutrient-based solutions of dextrose, water, fat, amino acid, electrolytes, vitamins and trace elements through a venous access device. Parenteral nutrition can be administered through a central venous access (often the superior vena cava), and usually for duration of seven days or more.
It can also be administered through a peripheral venous access which is indicated for patients requiring parenteral nutrition for less than seven days

Purpose

- To provide nutrients required for the normal metabolism, tissue maintenance/repair and energy demands in clients who are unable to receive or tolerate adequate nutrition through the GIT.

Indication for parenteral nutrition

It is indicated in the following conditions:

- Gastrointestinal tract malfunctioning due interruption in its continuity or impairment in its absorptive capacity.
    1. Paralytic ileus
    2. Intestinal obstruction
    3. Inflammatory bowel disease
    4. Ulcerative colitis
    5. Short bowel syndrome
    6. Malabsorption
    7. Gastrointestinal fistula
    8. Persistent vomiting
    9. Hepatic failure
    10. Acute pancreatitis
- In hyper metabolic state for which enteral nutrition is not possible or inadequate
    1. Severe burn injury
    2. Acute renal failure
    3. Multiple fracture
    4. Tumour of the GIT tract
    5. Major surgeries with Nil per oral order for more than 5 days
- Patients at risk for malnutrition because of:
    1. Metastatic cancer
    2. Gross underweight (more than 80% below standard)
    3. Nil per oral order for more than 5 days

Having taking you through the overview of patient's nutrition, it is anticipated that you can now identify nursing interventions needed for optimal nutrition for clients, alternative feeding methods and terminologies used to describe hospital diets.

Activity 2.1

Take a moment to reflect on what you have read so far on the overview of nutrition in the hospital setting. Based on your nursing experience, develop a 24-hour food menu plan (breakfast, lunch and dinner) for a client on enteral nutrition through NGT.

For an effective understanding of overview of patient's nutrition, the following points must be borne in mind. These are highlighted in Box 2.1.

Box 2.1: Overview of patient's nutrition
Nurses have a responsibility to maintain health and facilitate patients' recovery from illness through promotion of optimal nutrition and provision of a balanced diet to the clients To achieve nutritional-based set goal in clients' care, collaboration with physician and dietitian is very essential A balanced diet can be obtained through the use of locally available food.

Summary of Study Session 2

In study session 2, you have learned about:

1. Nutrition based nursing intervention that can help to promote optimal nutrition in hospitalized clients.
2. Different terms used to describe the diets served in the hospital in patients' management.
3. Alternative feeding methods which is divided into enteral and parenteral nutrition.

Self-Assessment Questions (SAQs) for Study Session 2

Now that you have completed this study session, you can assess how well you have achieved its Learning Outcomes by answering these questions. You can check your answers with the Notes on the Self-Assessment Questions at the end of this unit.

SAQ 2.1

State four nursing interventions needed for optimal nutrition for a hospitalized clients

SAQ 2.2

Describe a special diet

SAQ 2.3

What is a parenteral nutrition?

Notes on Self Assessment Questions for Study Session 2

SAQ 2.1

- Provision of an atmosphere that encourages eating
- Serving of meal/diet to the client
- Assisting or feeding the client with the served meal
- Monitoring clients' appetite and food intake

SAQ 2.2

Special diet is a dietthat has been altered or modified either in texture, kilocalories, specific nutrients or consistency for the management of a disease process e.g. diabetes mellitus, renal failure.

SAQ 2.3

It is the intravenous administration of nutrient-based solutions of dextrose, water, fat, amino acid, electrolytes, vitamins and trace elements through a venous access device in order to provide nutrients required for the normal metabolism, tissue maintenance/repair and energy demands in clients who are unable to receive or tolerate adequate nutrition through the GIT.

Study Session 3: Serving and Feeding the Client with Diet

Introduction

Serving of client diet is a nursing intervention directed towards meeting the nutritional needs of clients in the hospital and also to promote optimal nutrition while Feeding of client with the served diet is a nursing intervention directed towards assisting clients who are unable to feed themselves in order to meet their nutritional needs.

In this study session, you will be learning about the nursing actions/rationales involved in serving and feeding of a client.

Learning outcome for Study Session 3

When you have studied this session, you should be able to:

3.1 Identify the nursing actions involved in the serving of client's diet

3.2 Identify the nursing actions/rationales involved in the feeding of client

3.1 Serving of Client's Diet

Serving of client diet is a nursing intervention directed towards meeting the nutritional needs of clients in the hospital and also to promote optimal nutrition.

3.1.1 Assessment

As part of the of client's admission protocol into the ward and subsequently, the client's nutritional assessment should be carried out to obtain information on the following:

1. Food preferences, allergies or restriction to diet
2. Diet history in relation to food and fluid intake
3. Weight and other signs of nutritional deficiencies e.g. inflammation of the mouth, sparse hair etc.
4. Medical/surgical health problem associated with food and fluid intake and nutrition requirement such as difficulty in chewing and swallowing, constipation, diarrhoea etc.
5. Medication history to determine if medication will be administered before, during or after meal. Also to determine the possibility food-drug interaction.
6. Physical activity level to determine the level of assistance needed
7. Prescribed food order

3.1.2 Nursing Diagnosis

- Imbalanced nutrition: more than body requirement.
- Imbalanced nutrition: Less than body requirement.
- Risk for Imbalanced nutrition: more than body requirement.

3.1.3 Plan

Requirements

- A tray containing the prepared diet.
- Feeding utensils e.g. Spoon, table knife fork and straw for drinking
- A cup of drinking water or any other client's preferred fluid choice such as juice.

In-text question

List out the 3 nursing diagnosis of the clients

In-text answer

- Imbalanced nutrition: more than body requirement
- Imbalanced nutrition: Less than body requirement
- Risk for Imbalanced nutrition: more than body requirement

3.1.4 Implementation or Action

Procedure

1. Inform client about the arrival of diet and assess the clients readiness to eat

Rationale: to prepare the client's mind about diet and to determine when to serve the client's meal.

2. Wash hands

Rationale: Reduce the risk of transmission of microorganisms

3. Instruct/assist client to wash hand in preparation for eating.

Rationale: This promotes patients comfort and also reduces the risk of transmission of microorganisms

4. Remove any unpleasant visual stimuli such as bedpans and urinal in the client's surroundings

Rationale: Unpleasant sight and smell can decrease a patient's appetite.

5. If not contraindicated raise the head of the patient's bed or instruct/assist the client to sit in a chair.

Rationale: Upright position reduces the risk of aspiration and reflux.

6. Check and ensure that diet correspond to the prescribed order

Rationale: This ensures that the client's take the right type of diet

7. Arrange food in a tray with required feeding utensils and fluid choice and place on the over-bed table or in a manner convenient for the client to eat (See figure 3.1).

Rationale: This promotes comfort and brings the food close to client's easy access or reach.

Fig. 3.1: *Setting of food on the over-bed table for client to eat.*
Source: *http://www.dailymail.co.uk/news/article-2218758/Hospital-spends-just-73p-meal patients--aside-feed-prisoners.html*

8. If required assist the client to cut food to smaller pieces

Rationale: This provides necessary assistance needed with food.

9. Allow the client to make choices about the order in which food is eaten, the speed at which food is eaten, and the amount of food that will be eaten.

Rationale: This facilitate client's independence

10. Do not hurry the patient through the meal

Rationale: This may facilitates client's enjoyment of the food.

11. Communicate with the client in the course of the meal (optional) but not on stressful event.

Rationale: This improves interpersonal relationship, while discussion of stressful life event at meal time can decrease appetite and delay digestion.

12. Encourage the client to eat if you observed that the client is not eating the meal as required

Rationale: This improves clients' appetite and food consumption.

13. Remove the tray when client is done with the meal
14. Encourage the patient to remain in sitting position for at least 15 minutes after meal.

Rationale: This decreases the risk of reflux and aspiration

15. Assist the client to clean up after meal with hands and other body parts as required.

Rationale: This helps to promote client's body comfort.

16. Wash hands.

Rationale: This reduce the risk of transmission of microorganisms

17. Record the time, type, amount of food and tolerance to food.

In-text question

What is the rationale for not hurrying the patient through the meal?

In-text answer

This may facilitates client's enjoyment of the food.

3.1.5 Evaluation

Carry out an evaluation of the client on the following:

1. Tolerance to feeding (e.g., nausea, cramping) and satisfaction with meal
2. Regurgitation and feelings of fullness after feedings
3. Weight gain or loss
4. Faecal elimination pattern (e.g., diarrhoea, flatulence, constipation)
5. Hydration status e.g., skin turgor
6. Urine output and specific gravity

Relate findings to previous assessment data if available. Report significant deviations from normal to the physician.

So far you have been taken through the nursing actions involved in the serving of client's diet, it is anticipated that in your next clinical placement you should be able to carry out this procedure.

Activity 3.1

Take a moment to reflect on what you have read. Based on your nursing experience, how can you improve the eaten pattern of a client with reduced appetite?

For an effective understanding of discussed procedure, the following points must be borne in mind in order to meet client's nutritional needs. These are highlighted in Box 3.1

Box 3.1: Serving of client diet
Assessment is an important phase of nutrition based intervention-serving of client diet. The food must be prepared and presented in an appealing or attractive manner to the client's senses. Unpleasant visual stimuli and stressful life event must be avoided during the course of eating.

3.2 Feeding of Client

Feeding of client with the served diet is a nursing intervention directed towards assisting clients who are unable to feed themselves in order to meet their nutritional needs.

3.2.1 Assessment

As part of the of client's admission protocol into the ward and subsequently, the client's nutritional assessment should be carried out to obtain information on the following:

1. Food preferences, allergies or restriction to diet
2. Diet history in relation to food and fluid intake
3. Weight and other signs of nutritional deficiencies e.g. inflammation of the mouth, sparse hair etc.
4. Medical/surgical health problem associated with food and fluid intake and nutrition requirement such as difficulty in chewing and swallowing, constipation, diarrhoea etc.
5. Medication history to determine if medication will be administered before, during or after meal. Also to determine the possibility food-drug interaction.
6. Physical activity level to determine the level of assistance needed
7. Prescribed food order.

3.2.2 Nursing Diagnosis

- Imbalanced nutrition: more than body requirement
- Imbalanced nutrition: Less than body requirement
- Risk for Imbalanced nutrition: more than body requirement

3.2.3 Plan

Requirements

- A tray containing the prepared diet.
- Feeding utensils e.g. Spoon, table knife fork and straw for drinking
- A cup of drinking water or any other client's preferred fluid choice such as juice
- A bowl of water to wash patient's hands
- Napkin or paper serviette

In-text question

List any 3 requirements for the nursing plan in feeding a client

In-text answer

- A tray containing the prepared diet.
- Feeding utensils e.g. Spoon, table knife fork and straw for drinking
- A cup of drinking water or any other client's preferred fluid choice such as juice

3.2.4 Implementation or Action

Procedure

1. Inform client about the arrival of meal and assess the clients readiness to eat

Rationale: to prepare the client's mind about diet and to determine when to serve the client's meal.

2. Explain feeding procedure to the client and determine the level of client participation

Rationale: To facilitate client's cooperation

3. Position the patient comfortably, if not contraindicated position client in fowler's position.

Rationale: To promote comfort and fowler's position reduces the risk of aspiration

4. Assist the client to wash hands in the bowl containing water.

Rationale: Thisreduces the risk of transmission of microorganisms.

5. Place napkin over chest and around the neck (optional).

Rationale: This prevents client's cloths from soiling

6. Check and ensure that diet correspond to the prescribed order

Rationale: This ensures that the client's take the right type of diet

7. Create a pleasant environment by removing any unpleasant visual stimuli

Rationale: This enhances client's appetite.

8. Wash hands

Rationale: This prevent cross infection

9. Arrange food in a tray with required feeding utensils and fluid choice on the over-bed table; or in a manner convenient for the nurse and client. Stand or sit at the side of the client (see figure 3.2).

Figure 3.2: *Setting of food tray and feeding of client*
Source*:http://www.youtube.com/watch?v=TFhbmeS3FZc*

10. Allow the client to make choices about the order in which food is eaten and the amount of food that will be eaten.

Rationale: This enhances client's cooperation and independence.

11. Feed the client in small bits using an appropriate feeding utensil (e.g., spoon). Wait for the client to chew and swallow the food before the next.

Rationale: Taking the food in small bits at a time helps for effective chewing and reduces the risk of aspiration

12. Give water in between if client's prefer

Rationale: This relieves obstruction if any and helps in swallowing

13. Encourage the client to eat but do not use force.

Rationale: Forcing the client to eat may cause vomiting.

14. Encourage the client participation in the feeding procedure as much as possible.

Rationale: This facilitates client's independence

15. When client is through with food or feels satisfied, stop feeding and give water if client prefers.
16. Clean up the client lips with napkin or serviette and wash hand if required.

Rationale: This promotes comfort.

17. Remove the tray and other articles, and wash hands.
18. Record the time, type, amount and tolerance to food. If client is on intake and output (I/O) monitoring, record the amount of fluid taken in the I/O chart.

Rationale: This ensures accurate documentation.

3.2.5 Evaluation

Carry out an evaluation of the client on the following:

1. Tolerance to feeding (e.g., nausea, cramping) and satisfaction with meal
2. Regurgitation and feelings of fullness after feedings
3. Weight gain or loss
4. Faecal elimination pattern (e.g., diarrhoea, flatulence, constipation)
5. Hydration status e.g., skin turgor
6. Urine output and specific gravity

Relate findings to previous assessment data if available. Report significant deviations from normal to the physician.

So far you have been taken through the nursing actions and rationale involved in feeding of client serving, it is anticipated that in your next clinical placement you should be able to carry out this procedure.

Activity 3.2

Take a moment to reflect on what you have read. Based on your nursing experience, which area of your practice in relation to client's feeding would you want to improve?
For an effective understanding of discussed procedure, the following points must be borne in mind in order to meet client's nutritional needs. These are highlighted in Box 3.2

Box 3.2: Serving of client diet
Assessment is an important phase of nutrition based intervention-serving of client diet. The food must be prepared and presented in an appealing or attractive manner to the client's senses. Unpleasant visual stimuli and stressful life event must be avoided during the course of eating.

Summary of Study Session 3

In study session 3, you have learned about:

1. The nursing procedure/actions in relation to the serving of client's diet.
2. The different rationales behind nursing actions in relation to the serving of client's diet
3. The nursing procedure/actions in relation to the feeding of client.
4. The different rationales behind nursing actions in relation to the feeding of client.

Self-Assessment Questions (SAQs) for Study Session 3

Now that you have completed this study session, you can assess how well you have achieved its Learning Outcome by answering the question below. You can check your answers with the Notes on the Self-Assessment Questions at the end of this Module.

SAQ 3.1

As a nurse, what will you assess the client on prior to the serving of food in the hospital setting?

SAQ 3.2

What are the requirements for feeding a client in the hospital?

Notes on Self Assessment Questions for Study Session 3

SAQ 3.1

- Diet history
- Food preferences, allergies or restriction to diet
- Weight and other signs of nutritional deficiencies
- Medical/surgical health problem associated with nutrition.
- Medication history
- Physical activity level
- Prescribed food order

SAQ 3.2:

- A tray containing the prepared diet.
- Feeding utensils e.g. Spoon, table knife fork and straw for drinking
- A cup of drinking water or any other client's preferred fluid choice such as juice
- A bowl of water to wash patient's hands
- Napkin or paper serviette

Study Session 4: Nasogastric Tube (NGT) and Jejunostomy Feeding

Introduction

A nasogastric tube is a narrow bore tube passed into the stomach via the nose. It is used for short- or medium-term nutritional support, and also for aspiration of stomach contents - e.g., for decompression of intestinal obstruction. A wide bore tube is used if drainage is needed; otherwise, a finer bore tube is used. Fine bore feeding tubes cause less discomfort and less risk of rhinitis, pharyngitis or oesophageal erosion.

In this study session, you will be learning about nasogastric tube, the purpose of insertion, requirement before insertion, actions involve in insertion and removal. You will also learn about gastrostomy feeding administration.

Learning outcome of Study Session 4

When you have studied this session, you should be able to:

4.1 Identify the purpose for insertion of a NGT
4.2 Highlight the requirement needed for the insertion of a NGT
4.3 Discuss the nursing actions/rationales involved in the insertion of a NGT
4.4 Explain the nursing actions/rationales involved the removal of a NGT
4.5 Identify the nursing actions/rationales involved in NGT feeding administration
4.6 Discuss the nursing actions/rationales involved in ajejunostomy feeding administration

4.1 Purpose for Insertion of a NGT

NGT is a plastic or rubber-bore tube with hole(s) near the tip of various sizes (diameter measured in Fr.) inserted into the stomach for the following purposes in clients' care:

1. To administer feeds to client who are unable to ingest food
2. To administer medication
3. To decompress the stomach of fluids and or gases
4. To prevent nausea, vomiting and gastric distention following surgery or traumatic event by decompressing the stomach
5. For diagnostic studies needed to remove the stomach content for examination and analysis
6. To lavage or irrigate the stomach in cases of poisoning or medication overdose

Examples of NG tubes are Levin's tube, Ryle's tube and Salem sump tube.

Figure 4.1: *Levin type and ViasysCorflo NG tubes*
Source:*http://en.wikipedia.org/wiki/Nasogastric_intubation*

4.2 Requirement Needed for the Insertion of a NGT

- Observe client alertness and awareness of the surrounding and ability to communicate with the nurse
  Rationale: Identifies clients' ability to understand and cooperate.
- Determine the purpose of the intubation.
  Rationale: Indicates the type of equipment to be used.
- Determine client's ability to breathe through his/her nostrils. Instruct client to blow his nose. Close one nostril with a finger, tell the client to exhale. Repeat with the other nostril and compare the force of exhalations.
  Rationale: Determines the nostril to be used. If one nostril is completely blocked, the tube should be passed through the mouth.
- Ask client to look up or hyperextend the head; examine the inside of the nostrils with a small flashlight, observe for obstruction and intactness of the tissues of the nostrils, including any irritations.
- Review clients health history for nasal trauma, bleeding or nasal surgery.
  Rationale: Suggest closed nostril. A deviated septum may permit easy passage of air but be painful for the client when tube is passed.
- Ask the client to open his mouth and stick out the tongue; tap the soft palate at the back of the tongue blade and see if the gag reflex is present.

Rationale: Alerts the nurse to possible blocks from scar tissue or to friable nasal tissue.

Indicates the client is able to assist with the passage of the tube by swallowing liquid. The gag reflex protects one from aspirating liquid as it is being swallowed.

Table 4.1:the Nursing diagnosis and related factors

Nursing Diagnosis	**Related Factors**
Altered Nutrition: less than body requirement.	Evidence of insufficient intake of nutrients to meet metabolic needs

NURSING PLAN

Objectives

Client will have adequate nutrition as evidenced by overall change in status.

Table 4.2: Items and rationale for insertion of NGT

Requirements	
Items	**Rationale**
Correct size of Nasogastric tube	Ensures correct functioning
Topical anesthetic agent	Provides topical anesthesia
Cotton-tipped applicator	Applies anesthetic agent
Glass of water and straw	Assist the client to swallow the tube
Water soluble lubricant	Permits easier passage of the tube
Towel	Protects the clothing and linens
Tissues	Wipe tears or saliva from the client's face, if necessary
Clamp	Closes tube after insertion, if necessary
Stethoscope	Auscultates epigastrium to determine accurate placement of tube
20mls syringe	Withdraws stomach content to check accurate positioning
Suction source or feeding bag and equipment	Connects to the tube after placement of tube
Clean gloves	Protects the nurse's hand from contamination
Non allergenic tape	Anchors the external and of the tube on the nose
Scissor	To cut tape in appropriate size and shape
Tongue blade	To test for gag reflex
Emesis basin	To collect vomitus

4.3 Actions/Rationales involved in the Insertion of a NGT

Preparation

Before starting a tube feeding:

- Introduce self and verify the client's identify. Explain to the client what the procedure is about and why it is necessary and how he/she can cooperate.
  Rationale: This facilitates the client's understanding and tolerance of the procedure as the passage of a NGT is unpleasant due to gag reflex is activated during insertion
- Establish a method for the client to indicate distress and a desire to pause the insertion such as raising a finger or hand to alert the nurse.
- Assist the client to high fowler's position if not contraindicated, and support the head on a pillow. Also place a towel/disposable pad around the client's chest and have an emesis basin and tissues handy.
  Rationale: Upright position facilitates easy swallowing and prevents aspiration if client should vomit. Passage of tube may stimulate gagging and tearing of eyes.

Action

1. Perform hand hygiene.

Rationale: Hand washing deters the spread of micro-organisms.

2. Provide privacy for client.
3. Prepare the tube by straightening it out to facilitate easy insertion

4. Determine the length of the tube to be inserted by placing the tip of the NGT at client's nostril extending it to the tip of earlobe and then to the tip of xiphoid process (see figure4.2).
   Mark the tube with a piece of tape if the tube does not have marking.

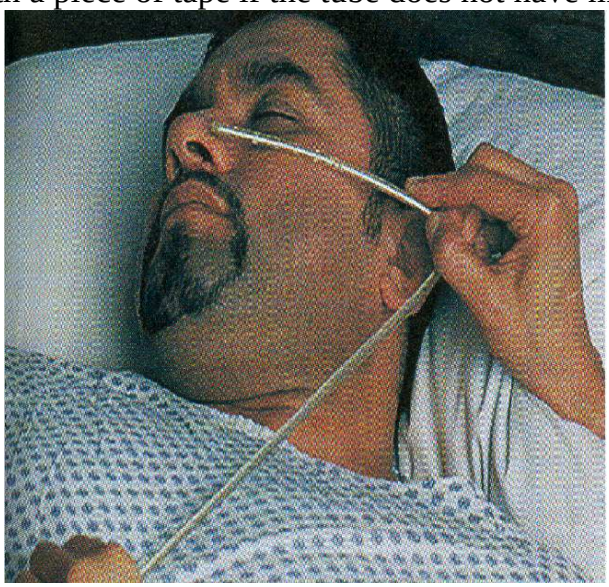


Figure 4.2: *Determining the length of the NGT to be inserted*
Source: *Berman, Synder, Kozier and Erb 2008*

Rationale: This measurement approximates the distance/length from the nares to the stomach and ensures that the tube will be long enough to reach the client's stomach.

5. Put on gloves
6. Lubricate the first 10-20cm (4-8in) of the tube with a water-soluble lubricant.

Rationale: Lubrication reduces friction and facilitates passage of the tube into the stomach. Water-soluble lubricant will not cause respiratory complications if tube enters the lungs.

7. Ask the client to lift his head, and insert the tube into the nostril while directing the tube downward and backward following the natural curve. The client may gag when the tube reaches the pharynx.

Rationale: Hyperextension of the neck reduces the curvature of the nasopharyngeal junction. Also following the normal contour of nasal passage while inserting the tube reduces irritation and the likelihood of mucosal injury. The gag reflex is readily stimulated by the tube.

8. Instruct the client to keep head in upright or normal eating position. Encourage him or her to swallow even if no fluids are permitted. Advance the tube in a downward and backward direction when the client swallows. Stop when the client breathes.

Provide tissues for tearing or watering of eyes. If gagging and coughing persist, check placement of tube with a tongue blade and flashlight, keep advancing the tube until the tape marking is reached. Do not use force: Rotate the tube if it meets resistance.

Rationale: Bringing the head forward helps close the trachea and open the oesophagus. Swallowing helps advance the tube, causes the epiglottis to cover the opening of the trachea, and helps to eliminate gagging and coughing. Tears are a natural response as the tube passes into the nasopharynx. Excessive coughing and gagging may occur if the tube has curled in the back of throat. Forcing the tube may injure mucous membrane.

9. Discontinue the procedure and remove the tube if there are signs of distress, such as gasping, coughing, cyanosis and the inability to speak or hum.

Rationale: The tube is not in the oesophagus if the client shows signs of distress and is unable to speak or hum.

10. Determine that the tube is in the client's stomach (these methods are appropriate for large-bore tubes but may be ineffective to check placement of small-bore, pliable tubes.

a. Attach the syringe to the end of the tube and aspirate 10-20ml of stomach contents

Rationale: Tube is in the stomach if its content can be aspirated.

b. Measure the pH of aspirated fluid.

Rationale: The PH of gastric contents is acidic (1 to 5), compared with an average pH of 6.0 or greater for respiratory fluid or intestinal tract content. Because PH of intestinal fluid also is slightly basic, this method will not effectively differentiate between intestinal fluid and pleural fluid.

c. Place 10-20m1 of air in syringe and inject air into the tube. Simultaneously auscultate over the epigastric area with a stethoscope.

Rationale: A whooshing sound can be heard when the air enters the stomach through the tube.

d. Place the end of the tube in a kidney dish with water.

Rationale: A bubbles are seen if tube is in the lungs.

11. Secure the tube with tape to the client's face (figure 4.3). Be careful not to pull the tube too tightly against the nose:

a. Cut a 4 inch piece of tape and split bottom 2 inches.	**Rationale:** Constant pressure of the tube against the skin and mucous membranes causes tissue injury.
b. Place unsplit end over bridge of client's nose.	
c. Wrap split ends under the tubing and up and over onto the nose.	

Figure 4.3: *Securing the NGT with a tape to the client face*
Source:*http://www.mountainside-medical.com/nasogastric-tube-holder.html*

12. Attach tube to suction/drainage bag or cock the end of the tube.

Rationale: Suction provides for decompression of stomach and drainage of gastric contents. Closure of tube at the end prevents the entrance of air if the tube is meant for feeding.

13. Secure tube to the client's gown by using a rubber band or tape and a safety pin.

Rationale: This prevents tension and tugging on the tube.

14. Wash hands. Remove all equipment and make client comfortable. Then carryout the Following:
    a. Observation
    b. Teaching
    c. Documentation of the procedure.
15. Establish a plan for providing daily NGT care.
    a. Inspect the nostril for discharge and irritation.
    b. Clean the nostril and tube with moistened cotton-tipped applicators.
    c. Apply water-soluble lubricant to the nostril if it appears dry or encrusted.
    d. Change the adhesive tape as required
    e. Give frequent mouth care. Due to the presence of the tube, the client may breathe through the mouth.

Evaluation

At the end of the procedure evaluate the client on the following:

1. Degree of comfort
2. Tolerance of the NGT
3. Correct placement of the NGT in the stomach
4. Client understanding of retiction
5. Colour and amount of gastric content if attached to a suction or stomach content if aspirated

Activity 4.1

Take a moment to reflect on what you have read so far on the insertion of a NGT. Based on your nursing experience, how would you prepare and what instruction you will give to the client to facilitate easy insertion of a NGT.

For an effective understanding of the discussed procedure, the following points highlighted in Box 4.1 must be borne in mind.

Box 4.1: Insertion of NGT
Client's preparation and instruction on specific details such as neck positioning and swallowing of the tube when in the throat rather retching may enhance client's cooperation and an easy insertion. The length of the tube before insertion must be measured and marked from tip of nostrils to the tip of the earlobe and then to the tip of the xiphoid process. After insertion, the placement of the tube in the stomach must be ascertained

4.4 Removing a Nasogastric Tube

Assessment

- Assess for the presence of bowel sound
- Assess for the absence of nausea or vomiting when tube is clamped.

Requirements

- Disposable pad or towel
- Tissues
- Clean gloves
- 50 ml syringe (optional)
- Plastic bag or destructor bowl

IMPLEMENTATION

Preparation

- Confirm the physician order to discontinue or remove the NGT
- Introduce self and verify the client's identify. Explain to the client what the procedure is about and why it is necessary and he/she can cooperate.
  Rationale: This facilitates the client's understanding and tolerance of the procedure
- Assist the client to a sitting position if not contraindicated
- Place the disposable pad or towel across the client's chest to collect any spillage of secretions from the tube.
- Provide tissues to the client to wipe the nose and mouth after tube removal.

Action

1. Perform hand hygiene
   Rationale: Hand washing deters the spread of micro-organisms.
2. Provide privacy for the client
3. Detach the tube:
   - Disconnect the nasogastric tube from the suction apparatus, if present
   - Unpin the tube from the client's gown
   - Remove the adhesive tape securing the tube to the nose.
4. Remove the nasogastric tube:
   - Put on clean gloves
   - Instil 50ml of air into the tube.

Rationale: This clears the tube of any contents such as feeding or gastric drainage

- Ask the client to take a deep breath and hold it.

Rationale: This closes the glottis, thereby preventing accidental aspiration of any gastric contents

- Pinch the tube with the gloved hand.

Rationale: Pinching the tube prevents any contents inside the tube from draining into the client's throat.

- Smoothly, withdraw the tube
- Place the tube in the plastic bag/destructor bowl.

Rationale: Placing the tube immediately in the bag/destructor bowl prevents the transfer of microorganisms from tube to other articles or people

- Observe the intactness of the tube

Rationale: To identify if any part of the tube is broken.

5. Ensure client's comfort
    - Provide mouth care if desired
    - Assist the client as required to blow the nose.

Rationale: Excessive secretions may have accumulated in the nasal passage

6. Dispose the equipment properly to prevent transmission of microorganism
7. Document the procedure, the amount and appearance of any drainage if connected to suction, and other necessary assessment findings on the client.

Evaluation

- Carry out a follow-up examination to evaluate the presence of bowel sound, absence of nausea or vomiting, and intactness of tissues of the nares.
- Relate the findings to previous assessment data if available
- Report significant deviations from normal to the physician

Activity 4.2

Take a moment to reflect on what you have read so far on removal of a NGT. Based on your nursing experience, what preparation would you want to put in place to implement this procedure?

4.5 Administering a Nasogastric Tube (NGT) Feeding

It is an enteral method of feeding carried out to ensure adequate nutrition through a NGT inserted from one of the nostrils into the alimentary tract. It is important to note that NGT feeding is carried out in client who have adequate gastric emptying, and require short-term feedings.

Assessment

- For any clinical signs of malnutrition or dehydration
- For allergies to any food in the feeding
- For presence of bowel sounds
- For any problems that suggests lack of tolerance of previous feeding (e.g. delayed gastric emptying, abdominal distention, diarrhoea, cramping, or constipation).

Requirement/Equipment

a. Correct type and amount of feeding solution
b. Feeding barrel/50ml Syringe
c. Measuring container from which to pour the feeding
d. Water in a cup at room temperature
e. Kidney dish
f. Clean gloves (optional)
g. 20ml syringe
h. pH test strip or meter

IMPLEMENTATION

Preparation

Before starting a tube feeding:

- Identify the client and check the client's treatment sheet for any prescribed order regarding NGT feeding.
- Determine the type, amount, and frequency of feeding.
- Assist the client to a Fowler's position (at least 30 degrees elevation) in bed or a sitting position in a chair, the normal position for eating. If a sitting position is contraindicated, a slightly elevated right side-lying position is acceptable.
  Rationale: These positions enhance the gravitational flow of the solution and prevent aspiration of fluid into the lungs.

Action

1. Introduce self and explain to the client the procedure, its importance, and how he or she can cooperate. Inform the client that the feeding should not cause any discomfort but may cause a feeling of fullness.
2. Perform hand hygiene and put on a clean glove (optional).
3. Provide privacy for this procedure if the client desires it. Tube feedings are embarrassing to some people.
4. Assess tube placement.
   - Deep the end of the NGT in a kidney dish with water for air bubbles.
     Rationale: Air bubbles are seen if tube is in the lungs
   - Or check the pH by attaching a syringe to the open end of the tube and aspirate.
   - Allow 1 hour to elapse before testing the pH if the client has received a medication.
5. Assess residual feeding contents.
   - If the tube is placed in the stomach, aspirate all contents and measure the amount before administering the feeding.
     Rationale: This is done to evaluate absorption of the last feeding; that is whetherundigested formula from a previous feeding remains. If thetube is in the small intestine, residual contents cannot be aspirated.
   - If 100 ml (or more than half the last feeding) is withdrawn, check with the nurse in charge or refer to agency policy before proceeding. The precise amount is usually determined by the physician order or by agency policy.
     Rationale: At some agencies, a feeding is delayed when the specified amount or more of formula remains in the stomach.

   Or

- Re-instil the gastric contents into the stomach if this allowed by the hospital policy or the prescribed order.
  Rationale: Removal of the content could disturb the client's electrolyte balance.
- If the client is on a continuous feeding, check the gastric residual every 6 hours or according to the hospital policy.

6. Administer the feeding.
   - Before administering feeding:
     – Check the expiration date of the feeding.
     – Warm the feeding to room temperature.
     Rationale: An excessively cold feeding may cause abdominal cramps.
   - If syringe is used, remove the plunger from the syringe and connect the syringe/feeding barrel to a pinched or clamped nasogastric tube.
     Rationale: Pinching or clamping the tube prevent excess air from entering the stomach and causing distention,
   - Add the feeding to the syringe barrel (See figure 4.4).

Figure 4.4*: Feeding with the NGT*
Source: *http://visihow.com/Give_Food_via_Nasogastric_Tube*

   - Permit the feeding to flow in slowly at the prescribed rate. Raise or lower the syringe to adjust the flow as needed. Pinch or clamp the tubing to stop the flow for a minute if the client experiences discomfort.
     Rationale: Quickly administered feedings can cause flatus, cramps, and/or vomiting.

7. Add water before the feeding solution has drained from the neck of a syringe or from the tubing of an administration set.
   Rationale: Adding water before the syringe or tubing is empty prevents the instillation of air into the stomach or intestine and thus prevents unnecessary distention.

8. Clamp the feeding tube before all the water is completely instilled/drained.
   Rationale: Clamping prevents leakage and air from entering the tube if done before all the water is instilled.

9. Ensure client comfort and safety.
   - Secure the tubing to the client's gown.
     Rationale: This minimizes pulling of the tube, thus preventing discomfort and dislodgment

- Ask the client to remain sitting upright in Fowler's position or in a slightly elevated right lateral position for at least 30 minutes.
  Rationale: These positions facilitate digestion and movement of the feeding from the stomach along the alimentary tract and prevent the potential aspiration of the feeding into the lungs.

10. Dispose of equipment appropriately.
    - If the equipment is to be reused, wash it thoroughly with soap and water so that it is ready for reuse.
    - Change the equipment every 24 hours or according to hospital policy.
11. Document all relevant information.
    - Document the feeding, including amount and kind of solution taken, duration of the feeding, and assessments of the client
    - Record the volume of the feeding and water administered on the client's intake and output record.
12. Monitor the client for possible problems
    - Carefully assess clients receiving tube feedings for problems.
    - To prevent dehydration, give the client supplemental water in addition to the prescribed tube feeding as ordered,

Evaluation

The evaluation should include urine analysis for glucose acetone

Activity 4.3

Take a moment to reflect on what you have read. Based on your nursing experience, what precaution would you want to observe in order to ensure a safe administration of NGT feeding?

For an effective understanding of discussed procedure, the following points must be borne in mind. These are highlighted in Box 4.3

Box 4.3: Administration of NGT feeding

To enhance client's cooperation explain to the client that NGT feeding does not cause any discomfort but may cause a feeling of fullness.

For a safe administration of NGT feeding, the client must be assessed prior to the procedure for the tube placement, residual feeding content and tolerance to previous feeds.

During the NGT feeding, you must prevent the instillation of air so as not to cause GIT distension.

4.6 Administering a Gastrostomy or Jejunostomy Feeding

It is an enteral method of feeding that is carried out to ensure adequate nutrition through a gastrostomy or jejunostomy devices. Theassessment is similar to that of the nasogastric tube.

Equipment

- Correct amount of feeding solution
- Graduated container and tubing with clamp to hold the feeding
- Feeding barrel/50ml syringe

For a tube that remains in place

- Mild soap and water
- Clean gloves
- Petrolatum, zinc oxide ointment, or other skin protectant
- Pre-cut 4 inches x 4 inches gauze squares
- Uncut 4 inches x 4 inches gauze squares

For tube insertion

- Clean gloves
- Moisture-proof bag
- Water-soluble lubricant
- Feeding tube (If needed)

Implementation/Procedure

Preparation

Before starting a gastrostomy or jejunostomy feeding:

- Identify the client and check the client's treatment sheet for any prescribed order regarding gastrostomy or jejunostomy feeding.
- Determine the type, amount, and frequency of feeding.
- Obtain any pertinent information about previous feeding such as the position in which the client best tolerate the feeding.

Action

1. Introduce self and explain to the client the procedure, why it is necessary and how the client can cooperate.
3. Perform hand hygiene
4. Provide privacy for the client.
5. Insert a feeding tube, if one is not already in place.
    - Put on clean gloves, remove the dressing. Then discard the dressing and gloves in the moisture-proof bag/destructor bowl.
    - Put on new clean gloves.
    - Lubricate the end of the tube by dropping an adequate amount of water soluble on the tip of the tube. Ensure that the lubricant container do not have any direct contact with the tube.
      Rationale: this prevents the contamination of the tube.
    - Insert the tube into the ostomy opening 10 to 15 cm (4 to 6 inches).
6. Check the location and patency of a tube that is already in place.
    - Determine correct placement of the tube by aspirating secretions and checking the pH
    - Follow the hospital policy for amount of residual formula. This may include withholding the feeding, rechecking in 3 to 4 hours, or notifying the nurse in charge or the physician if a large residual remains.
    - For continuous feedings, check the residual every 4 to 6 hours and hold feedings according to agency policy.
    - Remove the syringe plunger. Pour 15 to 30 ml of water into the syringe, remove the tube clamp, and allow the water to flow into the tube.
      Rationale: This determines the patency of the tube, if water flows freely, the tube is patent.

- If the water does not flow freely, notify the nurse in charge and/or physician.

7. Administer the feeding.
   - Hold the feeding barrel/syringe 7 to 15 cm (3 to 6 in.) above the ostomy opening.
   - Slowly pour the solution into the syringe and allow it to flow through the tube by gravity.
   - Just before all the formula has run through and the syringe is empty, add 30 ml of water.
     Rationale: Water flushes the tube and preserves its potency
   - If the tube is to remain in place, hold it upright, remove the syringe, and then clamp or plug the tube to prevent leakage.
   - If a catheter was inserted for the feeding remove it,
8. Ensure client comfort and safety.
   - After the feeding, ask the client to remain in the sitting position or a slightly elevated right lateral position for at least 30 minutes.
     Rationale: This minimizes the risk of aspiration.
   - Assess status of peristomal skin.
     Rationale: Gastric or jejunal drainage contains digestive enzymes that can irritate the skin. Document any redness arc Broken skin areas.
   - Check orders about cleaning the peristomal skin, apply a skin protectant and appropriate dressings. Generally, the peristomal skin is washed with mild soap and water at least once daily. The tube may be rotated between thumb and forefinger to release any sticking and promote tract formation.
     Petrolatum, zinc oxide ointment, or other skin protectant may be applied around the stoma, and pre-cut 4-inch x 4-inch gauze squares may be placed around the tube. The pre-cut squares are then covered with regular 4-inch x 4-inch gauze squares, and the tube is coiled over them.
   - Observe for common complications of enteral feedings, aspiration, hyperglycaemia, abdominal distention, diarrhoea, and faecal impaction. Report findings to the nurse in charge/physician. Often, a change in formula or rate of administration can correct problems.
   - When appropriate, teach the client how to administer feedings and when to notify the health care provider concerning problems.
9. Document all assessments findings and interventions.

Evaluation

The evaluation should include peristomal skin condition in addition to the evaluation step done in earlier stages

Activity 4.4

Take a moment to reflect on what you have read. Based on your nursing experience, how would you want to promote client's comfort and safety in relation to a gastrostomy or jejunostomy feeding administration?

For an effective understanding of discussed procedure, the following points must be borne in mind. These are highlighted in Box 4.3

Box 4.3: Administration of jejunostomy feeding

To facilitate easy insertion of the tube into the ostomy opening, the end of the gastrostomy or jejunostomy tube must be adequately lubricated.

Prior feeding it is very important to ascertain the patency of the gastrostomy or jejunostomy tube.

The peristomal skin should be assessed and dressed regularly with a skin protectant in order to prevent it from breaking down.

Summary of Study Session 4

In study session 4, you have learned about:

1. The purpose for insertion of a NGT in client's care
2. The requirement needed for a NGT insertion procedure
3. Identify the nursing actions/rationales involved in the insertion of a NGT
4. The requirement needed for NGT removal
5. Identify the nursing actions/rationales involved in the removal NGT
6. The nursing procedure/actions in relation to the administration of NGT feeding.
7. The different rationales behind nursing actions in relation to the administration of NGT feeding.
8. The nursing procedure/actions in relation to the administration gastrostomy or jejunostomy feeding.
9. The different rationales behind the nursing actions in the administration gastrostomy or jejunostomy feeding.

Self-Assessment Questions (SAQs) for Study Session 4

Now that you have completed this study session, you can assess how well you have achieved its Learning Outcomes by answering these questions. You can check your answers with the Notes on the Self-Assessment Questions at the end of this Module.

SAQ 4.1

State three reasons for insertion of a NGT.

SAQ 4.2

What type of a lubricant will be required in the insertion of a NGT and why?

SAQ 4.3

How will you determine the length of a NGT to be inserted?

SAQ 4.4

List the items required for the removal of a NGT

SAQ 4.5

How will you assess for residual feeding contents before the administration of a NGT feeding?

SAQ 4.6

How will you promote client's comfort and safety after a gastrostomy or Jejunostomy feeding?

Notes on Self Assessment Questions for Study Session 4

SAQ 4.1:

- To administer feeds to client who are unable to ingest food
- To administer medication
- To lavage or irrigate the stomach in cases of poisoning or medication overdose

SAQ 4.2:

A water-soluble lubricant will be used this is becauselubrication reduces friction and facilitates passage of the tube into the stomach. Water-soluble lubricant will dissolve and will not cause respiratory complication if the tube accidentally enters the lungs.

SAQ 4.3:

The length of the tube to be inserted will be determined by placing the tip of the NGT at client's nostril extending it to the tip of earlobe and then to the tip of xiphoid process. Mark the tube with a piece of tape if the tube does not have marking.

SAQ 4.4:

- Disposable pad or towel
- Tissues
- Clean gloves
- 50 ml syringe (optional)
- Plastic bag or destructor bowl

SAQ 4.5:

Aspirate all gastric contents and measure the amount in order to evaluate the absorption of the last feeding and whetherundigested formula from a previous feeding remains. If aspirated gastric contents is more than half of the last feeding that is more than 100mls, check with the nurse in charge or refer to hospital policy before proceeding.

SAQ 4.6

- Instruct the client to remain in the sitting position or a slightly elevated right lateral position for at least 30 minutes if not contraindicated in order to minimize the risk of aspiration.
- Carry out an assessment of peristomal skin condition.
- Clean the peristomal skin and rotate the tube between thumb and forefinger to release any sticking and promote tract formation.
- Apply a skin protectant and appropriate dressings around the peristomal skin.
- Observe client for common complications of enteral feedings e.g. aspiration, abdominal distentionetc.

Study Session 5: Colostomy Care and Irrigation

Introduction

Colostomy is a surgical procedure that brings one end of the large intestine out through an opening (stoma) made in the abdominal wall. Stools moving through the intestine drain through the stoma into a bag attached to the abdomen. The colostomy may be short-term or permanent.

In this study session, you will be learning about colostomy care and colostomy with irrigation.

Learning Outcome for Study Session 5

When you have studied this session, you should be able to:

5.1 State the purpose of colostomy care for client
5.2 Carry out client's assessment prior a colostomy care
5.3 Identify the nursing actions/rationales involved in a colostomy
5.4 Define and state the purpose of colostomy irrigation
5.5 Carry out client's assessment prior colostomy irrigation
5.6 Identify the nursing actions/rationales involved in colostomy irrigation

5.1 Colostomy

An **ostomy** is an opening from the gastrointestinal, urinary or respiratory tract onto the skin. A **colostomy** is an opening from the colon onto the skin. The piece of intestine that is brought out onto the client's abdomen is called a **stoma**. After surgical diversion, it is necessary to place an ostomy appliance over the newly created stoma.

An ostomy appliance or pouching system which consists of a skin barrier and pouch (e.g. colostomy bag) collects all effluent/stool, protects the skin from irritating drainage and controls odour. The pouching system can be a one-piece (a pouch with already attached skin barrier) or a two-piece ostomy appliance (a pouch with a separate skin barrier/flange/wafer).

The pouch is fastened to the barrier at the flange, and so can be removed without removing the skin barrier) [see figure 5.1].

Colostomy care is the maintenance of hygiene by emptying of the colostomy bag regularly and cleaning the colostomy site. The purposes of colostomy care are stated below:

- To prevent leakage and drainage of effluent.
- To control odour
- To prevent excoriation of skin and stoma
- To observe stoma and surrounding skin

Figure 5.1*: One-piece and two-piece ostomy appliance*
Source*:http://www.exmed.net/p-3009-hollister-new-image-colostomyileostomy-flexwearkit.aspx*

5.2 Assessment before Colostomy Care

1. Auscultate for bowel sounds.
   Rationale: Documents presence of peristalsis
2. Observe skin barrier and pouch for leakage and length of time in place. Depending upon type of pouching system used (such as with an opaque pouch), the nurse may have to remove the pouch in order to fully observe the stoma. Clear pouches permit the viewing of the stoma without their removal.
3. Observe stoma for colour, swelling, trauma, and healing; stoma should be moist and reddish-pink. Assess type of stoma. Stomas can be flush with the skin or be a budlike protrusion on the abdomen. An example of a normal bud stoma can be found in the illustration.
   Rationale: Stoma characteristics should be one of the factors to consider when selecting an appropriate pouching system.
4. Observe abdominal incision (if present)
   Rationale: Relationship to stoma determines proper placement of pouch.
5. Observe effluent from stoma and keep a record of intake and output. Ask client about skin tenderness.
6. Assessing peristomal skin for ulceration and irritation.
7. Assess the pouching system for leakage.
   Rationale: May indicate need for different type of pouch or sealant.
8. Assess abdomen for best type of pouching system to use. Consider:

a)Contour and peristomal plane	**Rationale**
b) Presence of scars, incisions	Determines pouching system selection and need for other equipment.
c)Location and type of stoma	

9. After skin barrier and pouch removal, assess skin around stoma, noting scars, folds, skin breakdown, and peristomal suture line if present.
   Rationale: Determines need for the barrier paste to increase adherence of pouch to skin or to fill in irregularities.

10. Determine client's emotional response and knowledge and understanding of an ostomy and its care.
    Rationale: Assists in determining extent to which client is able to participate in care and need for teaching and information clarification.

In-text question
What is the rationale for assessing the pouching system for leakage?

In-text answer
It may indicate need for different type of pouch or sealant.

Possible Nursing Diagnosis
- Constipation
- Diarrhoea
- Risk for impaired skin integrity
- Ineffective individual coping
- Knowledge deficit regarding ostomy self-care
- Pain

Related factors are individualized based on a client's condition or needs.

Equipment/Requirements
- Drainable colostomy bag or any other type supplied/available
- Pouch closure device/clamp
- Clean disposable gloves
- Wash cloth (flannel)
- Medium sized towel
- Mackintosh
- Gauze pads
- Bowl with warm tap water
- Scissors
- Skin barrier such as sealant wipes
- Ostomy deodorant (optional)
- Bed pan

5.3 Implementation

Preparation prior colostomy care:

1. Explain procedure to client; encourage client's interaction and questions.
   Rationale: Lessens anxiety and promotes client's participation
2. Assemble equipment
   Rationale: Optimizes use of time; conserves client's and nurse's energy.
3. Provides privacy by using the screen or close the room curtains and/or door.

Actions

1. Position client either standing or supine and drape. If seated position either on or in front of the toilet.
   Rationale: When client is supine fewer wrinkles allow for ease of application of pouching system; maintains client's dignity.

2. Wash hands and don disposable gloves.
   Rationale: Reduces transmission of micro organisms.
3. Place towel or covered mackintosh under the client.
   Rationale: Protects bed linen.
4. Remove used pouch and skin barrier gently by pushing the skin away from the barrier. An adhesive remover may be used to facilitate removal of the skin barrier.
   Rationale: Red tears.
5. Clean peristomal skin gently with warm tap water using clean washcloth (see fig 5.2); do not scrub the skin; dry completely by patting the skin with gauze or towel. After, assess the stoma and peristomal skin for redness, bleeding, ulceration and irritation.
   Rationale: Avoid use of soap since it leaves a residue on the skin that interferes with pouch adhesion to the skin. Skin must be dry as skin barrier-pouch does not adhere to wet skin. If blood appears on the gauze pad, do not be alarmed; the stoma, if rubbed, may ooze some blood from the cleaning process. Bleeding into the pouch is abnormal. The stoma's surface is highly vascular mucous membrane.

Figure 5.2: *Cleaning the stoma and the peristomal skin*
Source: Berman, Synder, Kozier and Erb, 2008

6. Prepare the skin barrier of colostomy pouch needed
   - Determine the size of the stoma using the manufacturer's guide (see fig 5.3).
     Rationale: Ensures accuracy in determining correct skin barrier size needed. Stoma shrinks and does not reach usual size for 6 to 8 weeks.

Figure 5.3: *Manufacturing guide for measuring stoma size*
Source: http://www.eakin.eu/preventing-leakage-with-eatin-cohesive

- On the backing of the skin barrier, trace a circle the same size as the stomal opening.
  Rationale: Size of pouch opening keeps drainage off skin and lessens risk of damage to stoma during peristalsis or activity.
- Cut out the traced stoma pattern to make an opening in the skin barrier not more than 1/8 to 1/4 inch larger than the measured stoma (see fig 5.4).
  Rationale: This allows space for the stoma to expand slightly when functioning and minimizes the risk of stool contacting peristomal skin
- Remove the backing to expose the sticky adhesive side. The backing can be saved and used as a pattern when making an opening for future skin barriers.

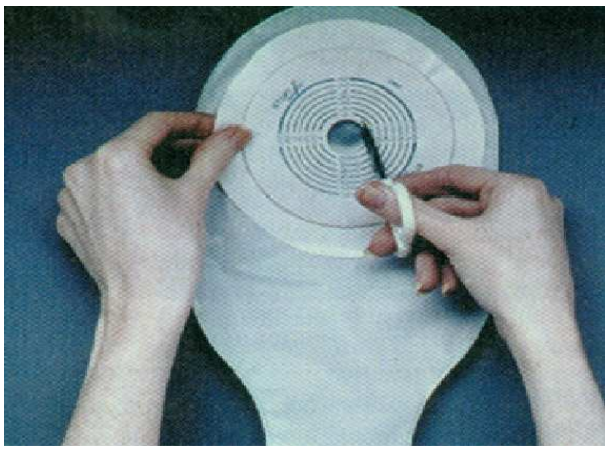


Figure 5.4: *Cutting an opening on the colostomy*
Source: *Berman, Synder, Koizer and Erb, 2008*

7. Apply thin circle of barrier paste around opening in pouch; allow to dry
   Rationale: The paste facilitates seal and protects skin.
8. Apply the skin barrier and pouch. If creases next to stoma occur, use barrier paste to fill in; let dry 1 to 2 minutes.

NB: When applying a skin barrier to a stoma that is close to a client's abdominal incision, the skin barrier may have to be trimmed in order for it to fit.

a. Use skin sealant wipes on skin directly under adhesive skin barrier or pouch; allow to dry.
b. Centre the one-piece skin barrier and pouch over the stoma and gently press the adhesive backing of the pouch and/or skin barrier smoothly onto the client's skin (see fig 5.5), starting from the bottom and working up and around the sides.

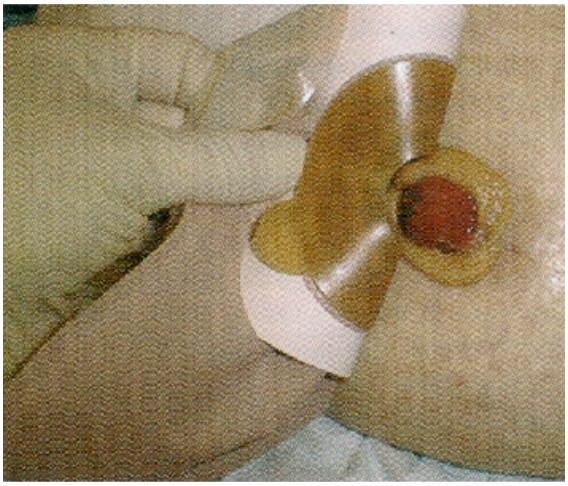


Figure 5.5: *Centring the skin barrier over the soma*
Source: Berman, Snyder, Kozier and Erb, (2008).

c. Maintain gentle finger pressure around the barrier for 30 seconds to 1 minute (see 5.6).
Rationale: The pressure helps to activate the adhesives in the skin barrier.

Figure 5.6: *Pressing and applying pressure on the skin barrier*
Source: Berman, Snyder, Kozier and Erb, (2008).

If using a two-piece pouching system:

- Centre the skin barrier over the stoma and gently press it onto the client skin and maintain finger pressure as described in steps above for one-piece system (see figure 5.7).
- Then snap the pouch onto the skin barrier
  NB: make sure a client who chooses to wear an ostomy belt does not have the belt too tight. To check for appropriate tightness, two fingers should be able to be placed between belt and skin.

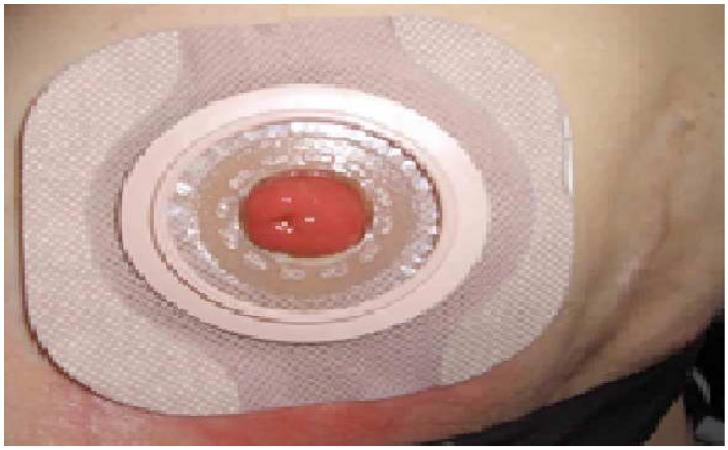


Figure 5.7: *Centring the skin barrier of two-piece ostomy appliance over the stoma*
Source: *http://www.eakin.eu/preventing-leakage-with-eatin-cohesive*

9. Although many ostomy pouches are odour-proof, some nurses and clients like to add a small amount of ostomy deodorant into the pouch. Do not use "home remedies", which can harm the stoma, to control ostomy odour.
   NB: Aspirin should never be added to the ostomy pouch. It can cause stoma bleeding.
10. Fold bottom of drainable open-ended pouches up once and close using a closure device such as a clamp (or follow manufacturers' instructions for closure).
    Rationale: Maintains secure seal to prevent leaking
1. Properly dispose of old pouch and soiled equipment. Consider spraying deodorant in room if needed.
   Rationale: Lessens odours in room.
2. Remove gloves and wash hands.
   Rationale: Reduces transmission of microorganisms.
13. Change pouch every 3 to 7 days unless leaking; pouch can remain in place for tub bath or shower; after bath, pat adhesive dry.
    NB: Sometimes the non-allergic paper tape needs to be reapplied after showering or bathing.
    Rationale: Avoid unnecessary trauma to skin from too frequent changes. Drying ensures adhesion of pouch.

Evaluation

1. Ask if client feels discomfort around stoma
   Rationale: Determines presence of skin irritation.
2. Note appearance of stoma around skin and existing incision (if present) while pouch is removed and skin is cleansed. Re-inspect condition of skin barrier and adhesive.

Rationale: Determines condition of tissues and progress of healing. Determines presence of leaks.

3. Auscultate bowel sounds and observe characteristics of stool
   Rationale: Determines return of peristalsis and bowel elimination.

Activity 5.1

Take a moment to reflect on what you have read so far on colostomy care. Based on your nursing experience, how would promote client's dignity during colostomy care.
For an effective understanding of colostomy care procedure, the following points must be borne in mind. These are highlighted in Box 5.1

Box 5.1: Colostomy care

The stool or effluent is alkaline and can irritate the skin, also the faecal bacteria can colonize on the skin and increase risk of infection, therefore the ostomy and peristomal skin should be cleaned and the pouch and skin barrier changed whenever there is leakage.

The pouch and skin barrier should be changed when client is comfortable usually before a meal since this prevents increased peristalsis and the chance of evacuation during the pouch change.

To minimize skin irritation, avoid unnecessary changing of the entire pouching system. A one-piece pouch with attached skin barriers or the skin barrier of a two-piece pouching system should be changed every 3 to 7 days, not daily.

Pouches should be emptied when one third to half full because the weight of contents may dislodge the skin seal, and ostomy drainage in irritating to the skin.

The pouch collects flatus (gas), which needs to be expelled since it can disrupt the skin seal.

5.4 Colostomy Irrigation

Colostomy irrigation is a procedure similar to enema that is carried out to cleanse the lower colon. It is also a form of stoma management used only for client with sigmoid or descending colostomy. It is a simple procedure which the client can learn and it consists of an enema given through a colostomy. The purposes of colostomy irrigation are:

- To distend the bowel sufficiently so as to stimulate peristalsis
- To establish regular pattern of bowel elimination after ostomy surgery
- To relieve constipation
- To cleanse the bowel of faeces before tests or surgical procedures

5.5 Assessment

1. Assess frequency of defaecation, character of stool, and placement of stoma, as well as nutritional pattern.
   Rationale: May indicate need to irrigate to stimulate elimination function, consistency of stool varies along length of GI tract.
2. Assess time when client normally irrigates colostomy. In the case of a new ostomy, discuss with physician about when irrigations can begin. Obtain written order. Discuss with client for best time to irrigate.
   Rationale: Maintains established routine for bowel emptying. Irrigation initiates attempt to establish regular bowel emptying. Bowel must be totally healed so irrigation fluid will not cause perforation. This usually occurs 3 to 7 days after surgery.
3. Review orders for diagnostic or surgical procedures involving the bowel.
   Rationale: Procedures may indicate need to cleanse bowel of faecal contents or delay starting irrigation procedure.
4. Assess client's understanding of procedure and ability to perform techniques.
   Rationale: Determines level of participation to expect from client and level of explanations nurse should provide and if irrigation is appropriate for client.

Nursing Diagnosis

- Anxiety
- Constipation
- Knowledge deficit regarding irrigation management

Related factors are individualized based on a client's condition or needs.

Requirement/Equipment

- Ostomy irrigation set that consists of an irrigation solution bag and tubing with a fluid control clamp and cone tip.
- Irrigation sleeve (with belt tabs or stick-on ring and end-closure device)
- Water-soluble lubricant
- Ostomy pouch and skin barrier or stoma cap cover
- Clean disposable gloves

Toilet facilities that include:

- A flushable toilet
- A hook or some device to hold the irrigation container
- Toilet tissue
- Running water (that is suitable for use)

For clients who are bedridden:

- Bedpan
- Towels
- Mackintosh

In-text question

What is the rationale for assessing the frequency of defaecation, character of stool, and placement of stoma, as well as nutritional pattern?

In-text answer
It May indicate need to irrigate to stimulate elimination function, consistency of stool varies along length of GI tract.

5.6 Implementation of Colostomy Irrigation

Prior to the procedure

1. Review prescribed order related to colostomy irrigation
2. Explain procedure and anticipated responses (e.g., some abdominal cramping) to client, encourage client's participation and questions.
   Rationale: Lessens anxiety and promotes client's participation.
3. Assemble equipment
   Rationale: Optimizes use of time; conserves client's and nurse's energy.
4. Provides privacy by using the screen or close the room curtains and/or door.

Action

1. Position client:
   a) On toilet or in chair in front of toilet, if ambulatory.
   b) On side, with head slightly elevated, if unable to get out of bed.
   Rationale: Allows for placement of irrigation sleeve into toilet or bedpan.
2. Apply disposable gloves.
   Rationale: Reduces transmission of microorganisms.
3. For adult clients, fill irrigation bag with 500 to 1000ml warm irrigation solution (either tap water or normal saline); clear tubing of air. 500 to 1000ml is sufficient to distend the colon and effect evacuation. Start with 500ml.
   Rationale: Allows solution to slowly enter colon and avoids cramping. Cold irrigation solution could trigger syncope; hot water could damage stoma and intestinal mucosa. Air entering the colon may trigger cramping.
4. Hang the irrigation solution container on a hook so that the end of the bag is not higher than client's shoulder height when sitting or 18 to 20 inches (45 to 50cm) above stoma.
   Note: Assess if client is capable of sitting on the toilet. Make sure the end of the irrigation sleeve can sufficiently reach into the toilet to prevent stool from getting on the floor or the client.
   Rationale: This position allows the solution to slowly enter the colon and prevents too high a pressure which can cause cramping and possible bowel damage.
5. Remove used pouch by gently pushing skin from adhesive and barrier; properly dispose of used pouch (save clamp, if attached to pouch) and remove gloves and wash hands.
   Rationale: Prevents skin irritation; controls odour in room.
6. Apply irrigation sleeve over stoma. Distal end of the sleeve should rest in water in toilet or in bedpan.
   Rationale: Directs flow of stool into toilet or bedpan and also controls odour and splashing.
7. Don clean gloves. Lubricate cone tip. Through the irrigation sleeve, hold the tip of the cone snugly against stomal opening. Do not force the cone into the

stoma. Start inflow of solution. Adjust direction of cone to facilitate inflow of solution (see figure 5.8 and 5.9).

Figure 5.8: *Inserting a cone into stoma*
Source: *http://www.mountnittany.org/articles/healthsheets/861*

Note: Only use a cone tip to do irrigations. Do not use a tube without a cone tip. It carries a higher risk for perforation of colon.
Rationale: Prevents trauma to stoma; cone tip avoids perforation of bowel. Cone aids in retaining solution during inflow. Aiming flow of solution toward direction of bowel aids inflow.

Figure 5.9: *Irrigating Colostomy with sleeve in place*
Source: *http://www.mountnittany.org/articles/healthsheets/861*

8. Allow solution to flow in over 5 to 10 minute period.
Rationale: Avoids rapid distention of bowel; if cramping or nausea occurs, stop the inflow of solution until either subsides; have client take a few slow, deep breaths.

9. After the desired amount of solution has entered the colon, clamp the tubing and wait 15 seconds before removing the cone. Discard gloves. Close the top of the irrigation sleeve.
   Rationale: Avoids sudden backflow of solution from the stoma.
10. Allow 15 to 20 minutes for initial evacuation; don gloves. Dry tip of irrigation sleeve and close bottom (use ostomy pouch clamp or rubber band). Fold the sleeve up and cover the top as per manufacturer's specific directions for each brand of irrigation sleeve, leave in place for 30 to 45 minutes. Discard gloves. Client may walk around.
    Rationale: Prevents leakage; optimizes evacuation of stool.
11. After 30 to 45 minutes, don clean gloves; unclamp the sleeve, empty any faecal contents; remove sleeve. Rinse with liquid cleanser and cool water. Hang sleeve to dry.
    Rationale: Maintains sleeve in clean condition for future use.
    Note: The entire procedure should take approximately 1 hour. Assists in evacuation stool. Also most irrigation sleeves are meant to be reused. Do not throw out reusable irrigation sleeves after each use. This is very costly.
12. Apply new colostomy pouch or stoma cap covering per procedure.
13. Remove gloves and wash hands.
14. Document the procedure: time of irrigation, volume and type of solution, amount and type or return, clients' tolerance to procedure.
15. Document the reapplication of pouch and condition of stoma and skin
16. Report symptoms of extreme discomfort, onset of severe diarrhoea, excessive bleeding to the nurse in charge or physician, as this could indicate the need for additional therapy.

Evaluation

1. Inspect volume and character of faecal material and fluid that returns after irrigation. **Rationale:** Determines if solution is retained. If client is dehydrated, bowel may absorb irrigation solution and faecal output will be limited or nil. Character and amount of stool reveal success in evacuation.
2. Note client's response during irrigation. Assess client's radical pulse. Ask if cramping or abdominal pain is felt.
   Rationale: Reveals tolerance of irrigation.
3. Ask client to describe steps of procedure.
   Rationale: Evaluates client's learning.

Activity 5.2

Take a moment to reflect on what you have read so far on colostomy irrigation. Based on your nursing experience, what precaution would you take during a colostomy irrigation?

For an effective understanding of colostomy irrigation, the following points must be borne in mind. These are highlighted in Box 5.2

Box 5.2: Colostomy irrigation
Colostomy irrigation is carried out only for client with sigmoid or descending colostomy. The ostomy irrigation tubing should be type with a cone tip so as not to perforate the colon. During the procedure observe client's tolerance and report any untoward sign to the appropriate authority.

Summary of Study Session 5

In study session 5, you have learned about:

1. The definition and purpose of colostomy care
2. How to assess a client prior colostomy care
3. The nursing actions/rationales involved in a colostomy
4. The definition and purpose of colostomy irrigation
5. How to assess a client prior colostomy irrigation
6. Identify the nursing actions/rationales involved in colostomy irrigation

Self-Assessment Questions (SAQs) for Study Session 5

Now that you have completed this study session, you can assess how well you have achieved its Learning Outcomes by answering these questions. You can check your answers with the Notes on the Self-Assessment Questions at the end of this Module.

SAQ 5.1

State the purpose of colostomy care for client

SAQ 5.2

Identify four points you will like to assess in a client prior colostomy

SAQ 5.3

How will prepare skin barrier of an ostomy appliance during a colostomy care?

SAQ 5.4

What is colostomy irrigation?

SAQ 5.5

Why do you have to assess client's understanding of procedure and ability to perform techniques?

SAQ 5.6

Why do you hang the irrigation solution container on a height not higher than client's shoulder height when sitting or 18 to 20 inches above stoma?

Notes on Self Assessment Question for Study Session 5

SAQ 5.1:

- To prevent leakage and drainage of effluent.
- To control odour
- To prevent excoriation of skin and stoma
- To observe stoma and surrounding skin

SAQ 5.2:

- Observe skin barrier and pouch for leakage and length of time in place
- Observe stoma for colour, swelling, trauma, and healing.

- Observe peristomal skin for ulceration and irritation
- Assess client's knowledge and understanding of an ostomy and its care

SAQ 5.3:

- Measure and determine the size of the stoma using a measuring guide.
- Trace a circle of the same size as the stomal opening on the skin barrier back cover.
- Cut out the traced stoma pattern to make an opening in the skin barrier not more than 1/8 to 1/4 inch larger than the measured stoma.
- Remove the skin barrier back cover to expose the sticky adhesive side.

SAQ 5.4:

Colostomy irrigation is a procedure similar to enema that is carried out by instilling warm solution into the lower colon for the purpose of cleansing and evacuation of the lower colon.

SAQ 5.5:

- To determine the level of participation to be expected from client during the procedure
- To determine the level of information needed by the client in relation to the procedure
- To determine client's need for teaching and ability to perform the procedure.

SAQ 5.6:

Positioning the irrigation solution container at the specified height allows the solution to slowly enter the colon and prevents too high a pressure which can cause cramping and possible bowel damage.

Study Session 6: Administration of an Enema

Introduction

An enema is a fluid injected into the lower bowel by way of the rectum. The most frequent use of enema is as a cleansing enema which is given to relieve constipation or for bowel cleansing before a medical examination or procedure.

In standard medicine, an enema may also be employed as a lower gastrointestinal series, to check diarrhoea, as a vehicle for the administration of food, water or medicine, and as a stimulant to the general system.

In this study session, you will be learning about the purpose of enema administration, assessment of client prior to enema administration and finally the actions involved in enema administration.

Learning outcome for Study Session 6

When you have studied this session, you should be able to:

6.1 Identify the purpose of enema administration

6.2 Carry out client's assessment prior enema administration

6.3 Identify the nursing actions/rationales involved in enema administration

6.1 Enema

An enema is a solution introduced or instillation into the rectum and large intestine in order to distend the intestine thereby increasing peristalsis and the excretion of faeces and flatus. Enema is categorized into four, namely:

- **Cleansing enema:** helps to remove faeces.
- **Carminative enema:** helps to expel flatus.
- **Retention enema:** introduces oil, medication or nutritive solution into the rectum and sigmoid colon. An oil retention enema acts to soften the faeces and lubricate the rectum and anal canal, thus facilitating passage of faeces. Medication-based enema is administered to treat local infection e.g. antibiotic and anthelmintic enema. While nutritive enema administer fluid and nutrients to the rectum.
- **Return-flow enema:** helps to expel flatus.

Purpose of enema administration

1. To relieve constipation or faecal impaction.
2. To expel flatus
3. To prevent involuntary escape of faecal matter during surgical procedure and delivery.
4. To promote visualization of intestinal tract during radiographic or instrumental examination.
5. To help establish regular bowel function during a bowel training programme.
6. Preoperative preparation for bowel surgeries

Types of enema solution:

1. Hypotonic e.g. tap water
2. Hypertonic e.g. sodium phosphate solution
3. Isotonic e.g. normal saline
4. Soap solution e.g. soapsuds
5. Oil e.g. olive oil, mineral

6.2 Assessment of Client before Enema Administration

1. Assess status of client: last bowel movement, level of awareness, normal bowel patterns, haemorrhoids, mobility, external sphincter control, abdominal pain.
   Rationale: Determines factors indicating need for enema and influencing the type of enema used. Particular care must be taken when inserting rectal tube to reduce irritation of haemorrhoidal tissues; use generous amount of lubricating jelly to reduce friction when passing rectal tube.
2. Determine client's level of understanding of purpose of enema.
   Rationale: Allows nurse to plan for appropriate teaching measures.
3. Check client's case note to clarify the rationale for the enema.
   Rationale: Determines purpose of enema administration: preparation for special procedure or relief of constipation.
4. Review physician's order for enema.
   Rationale: Order by physician is usually required for hospitalized client. Used to determine how many enemas client will require, type of enema to be given (e.g., oil retention, carminative, medicated).

Possible Nursing Diagnosis

1. Constipation
2. Pain

Related factors are individualized on a client's condition or needs.

Equipment (Using a trolley)

A. - Disposable gloves
- Mackintosh and towel
- Toilet paper
- Bath towel
- Bed pan/commode
- Clean gloves
- Water soluble lubricant if tubing not pre-lubricated
- Wash basin, wash cloths, towel and soap.

B. -Enema can/bag for administration large-volume enema: other requirements are:
- Jug containing water or solution when enema can is to be used
- Enema can/Enema bag.
- Tubing and clamp
- Appropriate size rectal tube: adult: 22-30Fr. Child: 12 – 18fr.
- Correct volume of warm solution. Adult: 750 – 1000ml;

Child: (a) 150 – 250ml for infants (b) 250 – 350ml for toddlers
(c) 300 – 500ml for school age.

- Bath thermometer

C. - Or pre-packaged enema for administration large volume enema
- Pre-packaged container of enema solution with lubricated tip

6.3 Implementation

Prior to the procedure

1. Explain procedure and anticipated responses (e.g., some abdominal cramping) to client, encourage client's participation and questions.
   Rationale: Lessens anxiety and promotes client's participation.
2. Assemble equipment
   Rationale: Optimizes use of time; conserves client's and nurse's energy.
3. Provides privacy by using the screen or close the room curtains and/or door.
   Rationale: Reduces embarrassment for client.

Actions

1. Wash hands and apply gloves.
   Rationale: Reduces transmission of microorganisms.
2. Raise bed to appropriate working height for nurse; raise side rail on opposite side.
   Rationale: Promotes good body mechanics and client safety.
4. Assist client into left side-lying (Sims') position with right knee flexed. Children may also be placed in dorsal recumbent position.
   Note: If client is suspected of having poor sphincter control, position the client on the bedpan in comfortable dorsal recumbent position. Clients with poor sphincter control cannot retain all of enema solution.
   Rationale: Allows enema solution to flow downward by gravity along natural curve of sigmoid colon and rectum, thus improving retention of solution.

5 Place mackintosh under hips and buttocks.
   Rationale: Prevents soiling of linen.

6 Cover client with bath towel, exposing only rectal area, clearly visualizing anus.
   Rationale: Provides warmth, reduces exposure of body parts, allows client to feel more relaxed and comfortable.

7 Place bedpan or commode in easily accessible position. If client will be expelling contents in toilet, ensure that toilet is free. (If client will be getting up to bathroom to expel enema, place client's slippers and bathrobe in easily accessible position).
   Rationale: Used in case client is unable to retain enema solution.

8. Administering enema using pre-packaged container of enema (see fig 6.1):
   a. Remove plastic cap from rectal tip. Tip is already lubricated, but more jelly can be applied as needed.
      Rationale: Lubrication provides for smooth insertion of rectal tube without causing rectal irritation or trauma.
   b. Gently separate buttocks and locate rectum. Instruct client to relax by breathing out slowly through mouth.

Rationale: Breathing out promotes relaxation of external rectal sphincter.

c. Insert tip of bottle gently into rectum.
   Adult: 7.5 to 10 cm (3 to 4 inches)
   Child: 5 to 7.5 cm (2 to 3 inches)
   Infant: 2.5 to 3.75 cm (1 to 1½ inches)
   Rationale: Gentle insertion prevents trauma to rectal mucosa
d. Squeeze bottle until all of solution has entered rectum and colon. (Most bottles contain approximately 250 ml of solution). Hypertonic solutions require only small volumes to stimulate defecation. Instruct client to retain solution until the urge to defecate occurs, usually 2 to 5 minutes.

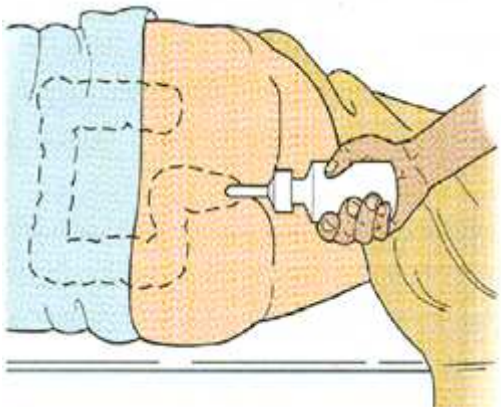


Figure 6.1: *Administering enema using pre-packaged container of enema*
Source: *Berman, Snyder, Kozier and Erb, 2008*

9. Administer enema using enema bag/can (see fig 6.2):
   a. Add warm solution to enema bag/can. Warm tap water as it flows from faucet. Place saline container in basin of hot water before adding saline to enema bag, check temperature of solution with bath thermometer or by pouring small amount of solution over the wrist.
      Rationale: Hot water can burn intestinal mucosa. Cold water can cause abdominal cramping and is difficult to retain.

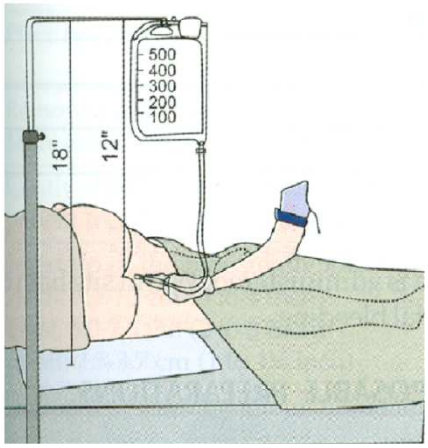


Figure 6.2: Inserting a rectal tube in enema administration using enema bag
Source: Annamma, Rekha and Jadhav, 2010

b. Raise enema container, release clamp, and allow solution to flow long enough to fill tubing.

Rationale: Removes air from tubing.

c. Reclamp tubing.

Rationale: Prevents further loss of solution.

d. Lubricate 6 to 8 cm (3 to 4 inches) of tip of rectal tube with lubricating jelly.

Rationale: Allows smooth insertion of rectal tube without risk of irritation or trauma to mucosa.

e. Gently separate buttocks and locate anus. Instruct client to relax by breathing out slowly through mouth.

Rationale: Breathing out promotes relaxation of external anal sphincter.

f. Insert tip of rectal tube slowly by pointing tip in direction of client's umbilicus. Length of insertion varies:

Adult: 7.5 to 10 cm (3 to 4 inches)

Child: 5 to 7.5 cm (2 to 3 inches)

Infant: 2.5 to 3.75 cm (1 to 1½ inches)

Rationale: Careful insertion prevents trauma to rectal mucosa from accidental lodging of tube against rectal wall. Insertion beyond proper limit can cause bowel perforation.

g. Hold tubing in rectum constantly until the end of fluid instillation.

Rationale: Bowel contraction can cause expulsion of rectal tube.

h. Open regulating clamp and allow solution to enter slowly with container at client's hip level.

Rationale: Rapid instillation can stimulate evacuation of rectal tube.

i. Raise height of enema container slowly to appropriate level above anus:

- 30 to 45 cm (12 to 18 inches) for high enema; which cleanse as much of the colon as possible.
- 30 cm (12 inches) for low enema; which cleanse the rectum and sigmoid colon only.
- 7.5 cm (3 inches) for infant.

Rationale: Allows for continuous, slow instillation of solution. Raising container too high causes rapid instillation and possible painful distention of colon. High pressure can cause rupture of bowel in infant.

Note: Instillation time depends on the volume of solution to be administered (e.g., 1L in 10 min) and client's ability to withstand given infusion rate.

j. Lower container or clamp tubing if client complains of cramping or if fluid escapes around rectal tube.

Rationale: Temporary cessation of instillation decreases the possibility of intestinal spasm and premature ejection of the solution.

k. Clamp tubing after all solution is instilled.

Rationale: Prevents entrance of air into rectum.

10. Place layers of toilet tissue around tube at anus and gently withdraw rectal tube.

Rationale: Provides for client's comfort and cleanliness

11. Explain to client that feeling of distention is normal. Ask client to retain solution as long as possible while lying quietly in bed. (For infant or young child, gently hold buttocks together for few minutes).

Rationale: Solution distends bowel. Length of retention varies with type of enema and client's ability to contract rectal sphincter. Longer retention promotes more effective stimulation of peristalsis and defecation.

12. Discard enema container and tubing in proper receptacle or rinse out thoroughly with warm soap and water if container is to be reused.
    Rationale: Reduces transmission and growth of microorganisms.
13. Assist client to bathroom or help to position client on bedpan/commode.
    Rationale: Normal squatting position promotes defaecation.
14. Observe character of faeces and solution (caution client against flushing toilet before inspection).
    Note: When enemas are ordered "until clear," it is essential to observe contents of solution passed. The enema return is considered "clear" when no solid faecal material exists, but the solution may be coloured.
    Rationale: Normal squatting position promotes defaecation.
15. Assist client as needed to wash anal area with warm soap and water (if perineal care is to be administered, use gloves).
    Rationale: Faecal contents can irritate skin. Hygiene promotes client's comfort.
16. Remove and discard gloves and wash hands.
    Rationale: Reduces transmission of microorganisms.

Evaluation

1. Inspect colour, consistency, amount of stool and fluid passed.
   Rationale: Determines if stool is evacuated or fluid is retained. Note abnormalities such as presence of blood or mucus.
2. Assess condition of abdomen.
   Rationale: Determines if distention is relieved
3. Unexpected outcomes that may occur include:
   - Abdomen is rigid and distended.

   Rationale: Results from perforation of bowel. Enemas should never be given when appendicitis or bowel obstruction is suspected.
   - Abdominal cramping occurs.

   Rationale: Results from excessive volume or incorrect temperature of instilled solution.

Recording and Reporting

1. Record pertinent information:
   a) Type and volume of enema given
   b) Characteristics of results.

Rationale: Communicates pertinent information to all members of health care team. Improves documentation of treatment results.

2. Report failure of client to defecate to physician.

Rationale: May indicate need for further therapies.

Follow-up-activities

1. Stop enema if severe cramping, bleeding or sudden abdominal pain occurs. Physician should be notified of any adverse effect.

Activity 6.1

Take a moment to reflect on what you have read so far on enema administration. Based on your nursing experience, what type of soap will you use in an enema administration involving soap solution?

For an effective understanding of enema administration, the following points must be borne in mind. These are highlighted in Box 6.1

Box 6.1: Enema administration

Proper positioning of client in sim's position is very important in the instillation and retention of enema solution.

In cases of severe cramping, bleeding or sudden abdominal pain during enema administration, the procedure should be stopped and reported to the physician.

Tap water is a hypotonic solution can be retained within interstitial space because it exerts lower osmotic pressure than the interstitial space which can lead to circulatory overload. Therefore precaution must be taken and should not be repeated after the initial administration.

Summary of Study Session 6

In study session 6, you have learned about:

1. The purpose of enema administration
2. How to assess a client prior enema administration
3. The nursing actions/rationales involved in enema administration

Self-Assessment Questions (SAQs) for Study Session 6

Now that you have completed this study session, you can now assess how well you have achieved its Learning Outcomes by answering these questions. You can check your answers with the Notes on the Self-Assessment Questions at the end of this Module.

SAQ 6.1

State three purpose of enema administration

SAQ 6.2

List four points you will like to assess prior enema administration in relation client bowel movement and bowel structure

SAQ 6.3

After administration of enema what will you document about the procedure?

Notes

SAQ 6.1:

- To relieve constipation or faecal impaction.
- To expel flatus
- To prevent involuntary escape of faecal matter during surgical procedure and delivery.

SAQ 6.2:

- Last bowel movement and its characteristics,
- Normal bowel patterns
- Presence of haemorrhoids
- External sphincter control

SAQ 6.3:

- Type and volume of enema give
- Characteristics of evacuated stool or fluid
- Client’s tolerance to the procedure
- Unusual outcome such as bleeding

Study Session 7: Anatomy of the Female External Genitalia and Antenatal Booking

Introduction

As a midwife, there is a need to learn about the female genitalia, antenatal care and booking. The female external genitalia are the breasts and the structures in the pelvic bone. They are organs that play important roles in pregnancy.

In this session, you will learn about the breast, how to describe both the external and internal structures of the female breast. You will also be learning about the pelvis, its contents and how the contents are arranged. This study session will be concluded by learning about the screening tests carried out during booking and /or subsequent antenatal care visit.

Learning Outcomes for Study Session 7

When you have studied this session, you should be able to:

7.1 Discuss the anatomy of the female breast
7.2 Discuss the anatomy of the female pelvis
7.3 Explain the Antenatal care and booking
7.4 Describe the Midwife's History

7.1 Anatomy of the Female Breasts

The breasts are two secreting glands in form of hemispherical swellings at the anterior chest wall lying over **pectoralis major muscle**, extending to **serratus anterior** and **external oblique muscle.** The female breast is situated between the 2nd and 6th ribs and middle margin of **sternum** and**mid-axilla**.

7.1.1 Description of the Female Breast

You should hold the breast model in anatomical position on one hand and hold the pointer (which can be a ruler or a pen) on the other hand. Use the pointer to point on the external structures of the breast and describe as follows:

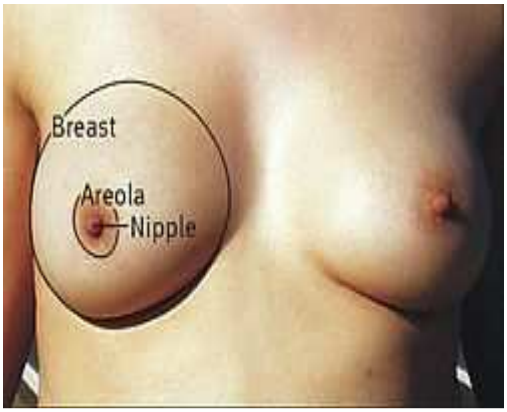


Figure 7.1: *The female breast*
Source: *http://en.wikipedia.org/wiki/Breast*

The nipple: This is a flat topped erectile protuberance at the centre of the breast. It is 6mm in length, situated at the level of the fourth intercostal space, perforated by 18 – 20 nipple ducts.
Areola: This is a circular pigmented area, pink or black at the base of the nipple. It measures 2.5cm in diameter.
Sebaceous glands: These are 18 small glands within the areola, they become **Montgomery tubercles**. They produce oily substance (sebum) which acts as lubricant during pregnancy and throughout breast feeding.
In-text question
Based on what you have read so far, any injury or infection that affects the fourth intercostal space is likely to affect which part of the external structure of the breast and why?
In-text answer
The nipple. This is because nipple is situated at the level of the fourth intercostal space.

7.1.2 Internal or Microscopic Structure of the Female Breast

You should now open the model and identify ducts and lobes with your pointer as follows:

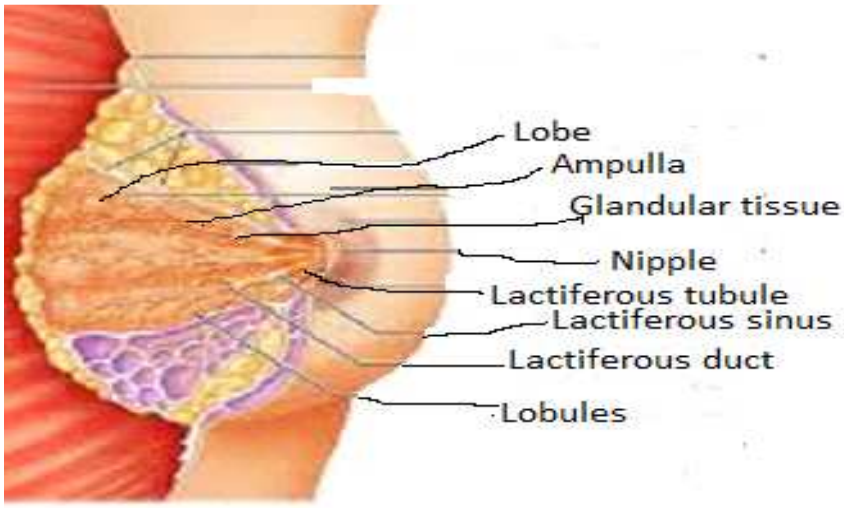


Figure 7.2: Internal structures of the female breast

Glandular tissue: This is the main substance of the breast, partitioned by fibrous band into **lobes** which are 18 – 20 in number. Each lobe is a complete unit and does not communicate with another. Lobes are sub-divided into lobules.
Lobules: These are made up of milk excreting units, which are alveoli and ducts. Each alveolus consists of milk-forming cells called acini cells, surrounded by myoepithelial cells which contracts and propels the milk out.
Lactiferous ducts: The lactiferous ducts carrying milk from the alveoli unite to form larger ducts; one larger duct leaves each lobeand widen to form **a lactiferous sinus** or **ampulla** for storage of milk. A **lactiferous tubule** from each sinus emerges on the surface of the nipple.

7.1.3 Blood Supply, Venous Drainage, Lymph Drainage and Functions of Breast

The blood supply to the breast is through the internal and external mammary arteries, as well as upper intercostal arteries. The veins form a circular network around nipple and drain to the internal mammary and axillary veins.

Lymph drains into the axillary glands in both axillae, glands in the anterior mediastinum and glands in the portal fissure of the liver.

The functions of the breast include; for breast feeding and for cosmetic purposes.

7.2 Anatomy of the Female Pelvis

The pelvis is gutter-shaped, its outlet is filled with the pelvic floor muscle. It is pierced through by the urethra, the vagina and the anus. It is arranged in layers as follows from within:

- Peritoneum (Broad ligament)
- Pelvic fascia (Cervical ligament)
- Deep pelvic muscle layer (LevatorAni)
- Superficial pelvic muscle layer (Perineal muscles)
- Fat
- Skin

7.2.1 Muscles of the Superficial Layer (Perineal muscles)

Now, hold the model of the pelvic floor muscles correctly (in anatomical position) and use your pointer (which can either be a ruler or a pen) to identify the superficial pelvic muscles as follows:

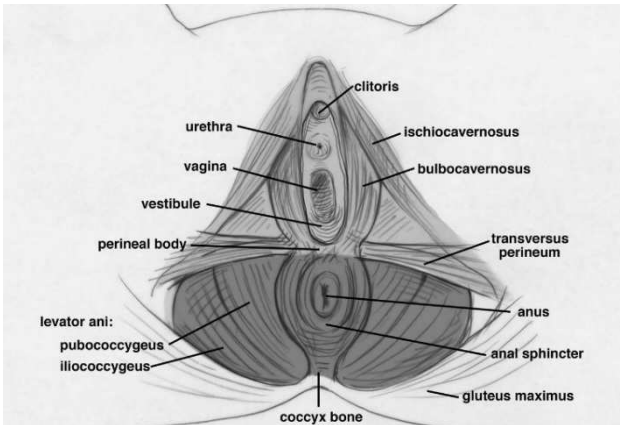


Figure 7.2: *Superficial layer muscles of the pelvic floor*

Source: *http://www.beyondbasicsphysicaltherapy.com/images/Stein-Illustration2.jpg*

The superficial layer muscles, also known as the perineal muscles are five in number. They are:

The external anal sphincter: this encircles the anus and is attached behind to the coccyx by a few fibres.

Transverse perineal muscle: it passes from the ischia tuberosity to the centre of the perineum.

Bulbocavernosus muscle: it passes from the perineum forwards around to the corpora cavernosa of the clitoris.

Ischiocavernosus muscle: it passes from the ischia tuberosity along the pubic arch to the corpora cavernosa.

Membranous sphincter of the urethra: it is composed of muscle fibres passing above and below the urethra and attached to the pubic bones.
Note that these perineal muscles are very important to midwives because they are liable to injuries during childbirth.

7.2.2 Muscles of the deep layer

These are three pairs of muscles which together are known as the **LevatorAni.** They are so called because they lift or elevate the anus. They are:
Pubococcygeus muscle: it passes from the pubis to the coccyx.
Illiococcygeus muscle: it passes from the fascia covering the obturatorinternus muscle to the coccyx.
Ischiococcygeus muscle: it passes from the ischia spine to the coccyx.

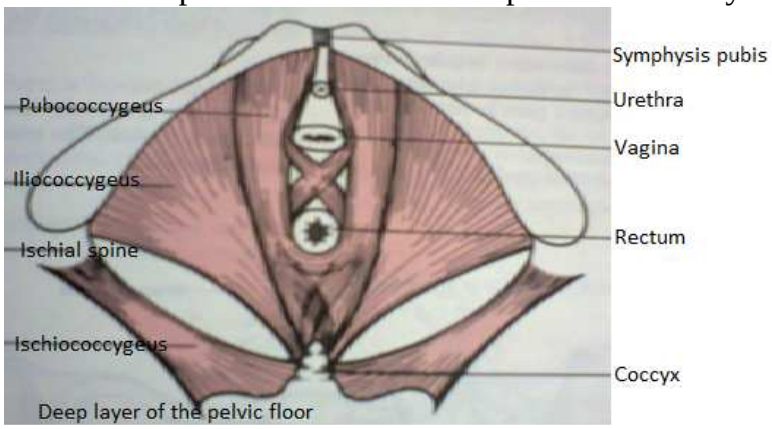


Figure 7.3: *Muscles of the deep layer*

You should note that all these three pairs of muscles have their insertion at the coccyx.

7.3 Antenatal Booking and Antenatal Care

Booking can be referred to as the registration of a pregnant woman during her first visit to the hospital or at her first contact with the midwife. It is very important for a pregnant woman to register early enough in the hospital, as soon as she missed her menstruation for two consecutive months and pregnancy is confirmed through pregnancy test.
Antenatal care can be described as a series of intervention a midwife offers to a pregnant woman throughout the pregnancy period. It is equally very important to attend antenatal clinic regularly. Therefore you as a midwife must know that since the pregnant woman will be visiting the hospital for the first time for booking, the reception she receives at this interview is likely to colour the rest of her experience; you should remember, “first impression lasts longer”.
In order for the client to have good impression about you as a midwife, you must possess the following qualities:

- You must be friendly and approachable
- You must have good listening skills (showing interest in the woman as a person)
- You must be able to analyse information
- You must respect your client's privacy.

7.3.1 Importance/Aims of Antenatal Care visit

The importance/aims of ANC are as follows:

- To enable you as a midwife to take relevant history that will allow you to identify possible problems early and solve them
- To assist you in identifying any risk factor and take appropriate action
- To guide you in monitoring the growth of the foetus as well as the health of the mother
- To be able to provide necessary and appropriate health information to your client.

7.3.2 Components of ANC

The components of ANC are as follows:

- Midwife's history
- Screening procedures
- Physical examination
- Health talk.

7.4 Midwife's History

You as a midwife will take the midwife's history, using the antepartum risk assessment/intervention form.

Antepartum risk assessment/intervention form helps you as a midwife to monitor the woman during the antenatal period. This can be achieved by keeping good record of information about the client, as well as good history taking. The history to be taken includes:

Social history: This includes; client's name, age, habit like smoking or alcohol, educational level. You should ask questions like; is the partner supportive? – If the partner is not supportive, the client is more likely to have problems getting good diet, therefore, she might be at risk of anaemia. Is the mother employed? – If the mother is unemployed, she might be financially handicapped to settle hospital bills, therefore she might plan not to deliver in the hospital.

Medical/surgical history: It is important for you to have a complete medical and surgical history. If she should have a history of sickle cell disease, diabetes, heart disease or epilepsy, she needs to see a doctor during this pregnancy.

Note that women with any of these conditions can develop complications and die. Therefore, you as a midwife should work closely with the doctor, so as to agree on her treatment plan. If she had previous surgery, it is important to determine if it might cause complications during this pregnancy.

Family history: You should take history of some genetic conditions like hypertension and diabetes mellitus. Also, you should take family history of multiple pregnancies.

Previous obstetrical history: In this section, you ask a lot of questions about her previous pregnancies. If she has had many pregnancies (more than five) closely spaced pregnancies (less than two years) or previous haemorrhages, she will have risk of having anaemia during this pregnancy. She is also at higher risk of post-partum haemorrhage with the present pregnancy.
Therefore, it is important for you as midwife to monitor her closely. Also, if your client has a history of hypertension or if she is pregnant for the first time, she is more likely to develop pregnancy induced hypertension. Therefore, you need to monitor her closely.
Menstrual history: You need to take history of her last menstrual period (LMP), so as to be able to calculate her expected date of delivery (EDD). Also, if she has a history of heavy or frequent periods, watch her closely for anaemia. If her periods are not regular, it will be important to try to calculate her EDD using size of the uterus combined with best history you can get.

In-text question

What is the importance of midwife's history taking?

In-text answer

It helps you as a midwife to monitor the woman during the antenatal period. This can be achieved by keeping good record of information about the client.

7.4.1 How to calculate the Expected Date of Delivery (EDD)

There are many ways of calculating the EDD, but the considered simplest way will be discussed here. To calculate the EDD take the following steps:
Step 1: add 7 to the day. (If result is more than 30, minus 30 and carry it over as a month)
Step 2: add 9 to the month. (If result is greater than 12, minus 12 and carry it over as a year).
Examples:
1. Calculate the EDD for LMP of 4/2/13 (day/month/year)
Add 7 to the day and 9 to the month
4+7/2+9/13 = 11/11/13.
2. Calculate the EDD for LMP of 25/4/13
Add 7 to the day and 9 to the month
25+7/4+9/13 = (32-30)=**2**/(1+13; 14-12)=**2**/1+13=**14**
EDD = 2/2/14.
Note: You need to inform your client that the exact day of delivery can be any day within 2 weeks plus or minus the EDD. Hence, the need for her to know signs of labour, so as to report promptly at the hospital whenever she notices any sign of labour.

Summary of Study Session 7

In study session 7, you have learned that:

1. Female breast lies over muscles of the anterior chest wall and located between the 2^{nd} and the 6^{th} ribs.
2. The nipple, the areola and the sebaceous glands are the external structures of the female breast.

3. When you open the breast model, you can identify the internal or the microscopic structures of the breast.
4. Major functions of the female breast are; for breast feeding and for cosmetic purpose.
5. The outlet of the pelvis is filled with pelvic floor muscles
6. Layers of the pelvic floor are arranged orderly; specifically its arrangement from within.
7. There are five muscles of the superficial layer of the pelvic floor.
8. Deep pelvic muscle are also known as the levatorani.
9. A midwife must possess some qualities to be able to get adequate and appropriate history from her client.
10. Booking and regular antenatal care visit is important for safe delivery.
11. There are four major components of antenatal care visit
2. You can take adequate midwife's history using antepartum risk assessment/intervention form.

Self-Assessment Questions (SAQs) for Study Session 7

Now that you have completed this study session, you can assess how well you have achieved its Learning Outcomes by answering these questions. You can check your answers with the notes on the Self-Assessment Questions at the end of this Unit.

SAQ 7.1

State the location of the breast

Mention two major functions of the female breast.

SAQ 7.2

1. List the content of the pelvis as arranged from within.
2. Mention the structures that pierce through the pelvic floor.

SAQ 7.3

1. What do you understand by booking during antenatal care visit?
2. What are the qualities a midwife should possess while taking history?
3. Mention the importance or aims of antenatal care visit

SAQ 7.4

What tool do you use in taking midwife's history?

Notes on Self Assessment Questions for Study Session 7

SAQ 7.1

1. The breast is located between the 2^{nd} and 6^{th} ribs and middle margin of sternum and mid-axilla.
2. The major two functions of female breast are:
(i) For breast feeding and
(ii) For cosmetic purpose.

SAQ 7.2

1. The content of the pelvis as arranged in layers from within is as follows:
a. Peritoneum
b. Pelvic fascia
c. Deep pelvic muscle
d. Superficial pelvic muscles

e. Fat
f. Skin

2. The structures that pierce through the pelvic floor are:
The urethral
Vagina
Anus

SAQ 7.4

1. **Booking** can be referred to as the registration of a pregnant woman during her first visit to the hospital or at her first contact with the midwife.
2. In order for the client to have good impression about you as a midwife, you must possess the following qualities:

You must be friendly and approachable
You must have good listening skills (showing interest in the woman as a person)
You must be able to analyse information
You must respect your client's privacy.

3. The importance/aims of ANC are as follows:

To enable you as a midwife to take relevant history that will allow you to identify possible problems early and solve them
To assist you in identifying any risk factor and take appropriate action
To guide you in monitoring the growth of the foetus as well as the health of the mother
To be able to provide necessary and appropriate health information to you

SAQ 7.4

Antepartum Risk Assessment/Intervention Form is used for taking midwife's history.

Study Session 8: Antenatal Screening Tests and Physical Examination of a Pregnant Woman

Introduction
After learning about antenatal booking and care, you will be learning about the various antenatal screening tests. There are many tests that are done in the antenatal. As a midwife, you should also know how to perform physical examination of a pregnant woman.

In this study session you will learn about the screening tests carried out during booking and /or subsequent antenatal care visit and the main purpose of physical examination of a pregnant woman. It will also discuss the reason for the screening tests as well as explaining the difference between the screening tests and diagnostic tests.
This study session will end by outlining the roles of a midwife in screening tests and how you can do detailed abdominal examination for a pregnant woman.

Learning Outcomes for Study Session 8
When you have studied this session, you should be able to:
8.1 Discuss the reasons for Antenatal Screening tests
8.2 Highlight the various Laboratory Screening tests
8.3 Discuss the meaning of Physical Examination of a Pregnant Woman
8.4 Highlight the various process involve in the abdominal Examination of a Pregnant Woman

8.1 Reason for Antenatal Screening Tests
You do screening tests in order to ascertain normalcy. A number of tests are suggested by you as a midwife for all pregnant women as part of routine prenatal care. These tests can help find conditions that can increase the risk for the mother and /or the foetus.

8.1.1 Screening Procedures during Antenatal Booking
You as a midwife will carry out some screening procedures on your client during antenatal booking. Thereafter, you will send her for other tests which also form part of the screening tests. The screening procedures include:

Height measurement: height over 160cm gives information of a normal sized pelvis.

Weighing: obesity can lead to an increased risk of gestational diabetes mellitus. Note that total weight during pregnancy is 10 – 14kg (2kg during the 1st week and 0.5kg per week until term).

Urinalysis: check for the presence of protein and/or glucose in the urine sample collected from your client.
Measurement of blood pressure: note that this may be falsely evaluated if the woman is anxious or if the apparatus is faulty.

Figure 8.1: *Antenatal screening*

8.2 Screening tests

The following tests are done early in pregnancy:
Complete blood count (CBC): A CBC counts the number of different types of cells that makes up your blood. The number of red blood cells can show a certain type of anaemia. The number of white blood cells shows how many disease-fighting cells are in the blood, and the number of platelets can reveal any problem with blood clotting.

Blood type: Result from the blood type can show you whether your client has **Rhesus factor.** The Rh factor is a protein that can be present on the surface of the red blood cells. Most people have Rh factor; therefore, they are Rh positive.
Others do not have Rh factor; therefore, they are Rh negative. If the foetus is Rh positive and the mother is Rh negative, the mother's body can make antibodies against the Rh factor. In a future pregnancy, these antibodies can damage the foetus's red blood cells.

Urinalysis: You will test the urine sample for glucose. High level might be indicative of diabetes mellitus. You will also test the urine for protein and if present, the amount should be measured. The presence of protein in the urine might be indicative of preeclampsia. You can also do urine culture test for bacteria, and if present, this can be a sign of urinary tract infection.

Rubella test: Rubella (sometimes called German measles) can cause birth defect if a woman is infected during pregnancy. You might need to initiate your client's blood

test to check whether she has had past infection with rubella or if she has been vaccinated against this disease.
If she has not had rubella previously or if she has not been vaccinated against the disease, you should educate her on the importance of avoiding contact with any infected person while pregnant, because this disease is highly contagious.
If your client has not been vaccinated, she should not be vaccinated while she is pregnant; hence, she should get the vaccine after delivery of her baby, even if she is breastfeeding.

Sexually Transmitted Disease (STD) test: All pregnant women are tested for syphilis and chlamydia early in pregnancy. Syphilis and Chlamydia can cause complication for both mother and foetus, therefore your client should be treated if infected with any of these STDs. Also, if your client has risk factor for gonorrhoea, she will be tested for STD.
Your client should also be tested for Human Immunodeficiency Virus (HIV) after you have gained her informed consent. If a pregnant woman is infected with HIV, there is chance of passing the virus to her baby. A pregnant woman infected with HIV can be given medications. You can also educated her on other steps to take in order to reduce the risk of passing the virus to her baby.

Hepatitis test: All pregnant women are tested for hepatitis B virus. If your client has risk factors, she may also be tested for hepatitis C virus. You need to educate your clients that any pregnant woman infected with hepatitis B or Hepatitis C can pass the virus to her babies.

The following tests are to be done later in pregnancy:
Repeat complete blood count.

Rh antibody test: If your client is Rh negative, her blood should be tested for Rh antibodies between 28 weeks and 29 weeks of pregnancy, if she does not have Rh antibodies, she will receive Rh immunoglobulin. This will prevent her from making antibodies for the rest of her pregnancy. If she has antibodies, she may need special care.

Glucose screening test: this test measures the level of glucose (sugar) in the blood. A high glucose level may be a sign of **gestational diabetes.** The test is usually done between 24 weeks and 28 weeks of pregnancy. If your client has risk factors for diabetes, or had gestational diabetes in previous pregnancy, the test can be done during the first trimester.

Group B Streptococci (GBS) test: GBS is a type of bacteria that lives in the vagina and rectum. GBS can be passed to a baby during birth and many women carrying GBS do not have any symptom. Most babies who get GBS do not have any problem, however, few of them become ill.

The illness can cause serious health problems or even death in new-born babies. To detect GBS during routine screening test, a swab is used to take samples from the vagina and rectum between 35 weeks and 37 weeks of pregnancy.
If your client's GBS test result is positive, you will need to discuss the result with her obstetrician, who will prescribe antibiotics to be administered during labour to help prevent the baby from being infected.

Difference between screening tests and diagnostic tests for birth defects
Screening tests are done during pregnancy to assess the risk of the foetus to certain common birth defects. A screening test cannot tell whether the baby actually has a birth defect. There is no risk associating with screening tests. Screening for birth defects begins by assessing your client's risk factors while taking midwife's history.
Diagnostic tests can actually detect many, but not all, birth defects caused by a defect in a gene or chromosomes. Some diagnostic tests are associated with some risks, including a small risk of pregnancy loss.

8.2.1 Roles of a Midwife in Screening Tests

1. Your roles as a midwife as regarding screening tests include:
2. You should explain the need to have the screening tests done to your client.
3. You should carry out the screening procedures like checking the height, the weight and the blood pressure of your client.
4. You should advocate and initiate tests for your client.
5. You should be able to interpret the test results to your client.
6. You should keep adequate record of your client's result for proper monitoring, such as the urinalysis result, the blood pressure and the weight.

In-text question
Reflect on what you have read so far, what are the screening procedures you as a midwife will carry out on your client during antenatal booking.

In-text answer
The screening procedures you will carry out on your client during antenatal booking before sending her for other tests are:

1. Height measurement
2. Weighing
3. Check the blood pressure
4. Check for protein in her urine
5. Check for glucose in her urine

8.3 Meaning of Physical Examination of a Pregnant Woman

Physical examination of a pregnant woman is the assessment of a pregnant woman from head to toe with emphasis on the abdomen in order to have an idea of the general state of health of the woman and the foetus. A midwife must possess the skill of assessment or examination of a pregnant woman to be able to detect any abnormality early enough during pregnancy.

8.3.1 Objectives of Physical Examination of a Pregnant Woman

You should be able to achieve the following objectives while conducting physical examination on a pregnant woman:

1. To observe for signs of pregnancy
2. To assess the health of the woman
3. To assess the foetal size and monitor its growth
4. To detect any risk factor to either the mother or the foetus
5. To detect any deviation from normal.

For the purpose of this class, the physical examination of a pregnant woman shall be divided into two:

- Physical examination of head to toe without the abdomen
- Physical examination of the abdomen

8.3.2 Physical examination of head to toe without the abdomen

Nursing action Rationale

General appearance

Note the way she walks Detect postural deformity

Note whether she is overweight or underweight Predisposes to high blood pressure or denotes malnutrition

Note her height and the shape of her legs Average height and straight legs denote adequacy of the pelvis for normal delivery

Skin

Inspect the skin for pallor, jaundice and skin Detects abnormalities
Infections

Head and neck

Examine the hair for neatness and lice Ensures that the patient maintains body cleanliness

Examine the eyes for pallor, discharge and Detects abnormalities
Jaundice

Examine the ears and nostrils for discharge Detects abnormalities

Examine both gum and teeth for decay and Assesses need for immediate and/or
Missing teeth long term dental care.

Palpate the neck for enlargement of the thyroid Rules out thyrotoxicosis Gland.

Breasts

Inspect the nipples for adequacy for breastfeeding Initiates correction of abnormal nipple Palpate the breasts to determine regularity and for Detects abnormalities and for early Breast lumps. Referral if needed.

Chest

Assess the symmetry of the chest wall and degree ascertains her exercise tolerance gauge of expansion.

Extremities
Note any deformity or restriction of movement Ensures that there is no injury in the past of the legs, arms and check for equality of the that could have indirect bearing on the limbs pelvis
Check for varicosities of the lower limbs reveals a source of major discomfort or even embolism during pregnancy or the pueperium

Figure 8.2: *Varicosities of the lower limbs*
Source: *DLC, University of Ibadan*

Check for oedema of fingers, arms, pretibial Presence may indicates cardiac or renal Region and internal malleolus disease; or pregnancy induced hypertension

Back
Examine the spinal column Rules out scoliosis or kyphosis

In-text question
Reflect on what you have read so far, mention two major things you will look out for while examining the breast of a pregnant woman.

In-text answer
Two major things you must look out for while examining the breast of a pregnant woman are:
Inspect the nipple for adequacy for breast feeding
Palpate the breasts to determine their regularity, as well as to detect any breast lump.

8.4 Abdominal Examination of a Pregnant Woman

Abdominal examination of a pregnant woman is a systematic examination of the abdomen during pregnancy and labour. This is done step by step as follows:

- Inspection
- Palpation
- Auscultation

8.4.1 Objectives

1. The following are the objectives of abdominal examination of a pregnant woman:
2. To note the general contour of the abdomen, paying special attention to its shape and size. As well as presence of scar and foetal movement.

3. To assess fundal height and determine the lie and presentation; relationship of presenting part to the pelvic brim and the condition of the foetus.

8.4.2 Equipment's

Cover sheet
Foetal stethoscope (Pinnard's stethoscope or Doppler device)
Tape measure
Watch with "second hand"

8.4.3 Preparation

1. Ask client to empty her bladder in 30 minutes before examination. This is to ensure closer accuracy, because full bladder displaces uterus.
2. Explain the procedure to the client, so as to allay her anxiety and to be able to get her cooperation.
3. Ask client to lie in dorsal position with her hands by her side on the couch or bed, with her head supported with one pillow.
4. Screen the bed, so as to provide privacy.
5. Stand on the right side of the patient (if you are a right-handed person). This will ensure easy access to the client.
6. Expose abdomen from pelvis to xiphisternum.
7. Wash your hands, then rub your palms together to generate heat. Touching your client with cold hands can induce contraction of the abdominal muscles and causes discomfort to your client.

8.4.4 Inspection

Observe for any damage to the skin integrity aside from stretch marks, such as the lineanigra and the striaegravidarum.
Observe the abdomen for presence of lineanigra, striaegravidarum and scar.

Figure 8.3: *Showing Linea Nigra and StriaeGravidarum*

Observe the size, shape and contour. Note that multiple pregnancy or polyhydraminous will enlarge both in length and breadth of the uterus, while a large baby increases only the length. The shape is longer than breadth in longitudinal lie, as it occurs in 99.5% of cases. If transverse, the uterus is low and broad.
Observe for a saucer-like depression below the umbilicus, which is a sign of occipito-posterior position.
Observe for foetal movements. This is an evidence of a live foetus.

8.4.5 Palpation

This includes the fundal palpation, lateral palpation and pelvic palpation.

Fundal palpation: Face the client, use both hands to palpate the fundus while watching the reaction of the woman. Place both hands on the sides of the abdomen, with your fingers closed together and curving round the upper border of the uterus.

Figure 8.4: *Fundal Palpation*

Apply gentle deliberate pressure using the palmer surface of the fingers to determine the presentation of the foetus. Use the ulnar border of the left hand to gently outline the highest point of the fundus, then measure the distance highest point of the fundus to the symphysis pubis using a tape measure.

Place the lower edge of the tape measure on the symphysis pubis and stretch it to the highest point of the fundus with the "inches mark" uppermost (to avoid bias), then turn the tape to read in centimetre.

Lateral palpation: Still facing your client, place your hands on both sides of the abdomen and palpate the fundus (use the pads of your fingers). If the gestation is 36 weeks and over, then begin to palpate from the pelvic region upwards. Continue down on both sides of the uterus.

You may also steady the uterus with one hand; use a rotary movement of the opposite hand to map out the back as a continuous smooth, resistant mass. On the other side, the same movement reveals the limbs as small parts that slip about under the examining fingers.

Figure 8.5: *Lateral Palpation*

Pelvic palpation: Palpate the lower pole of the uterus just above the pelvis and this should not cause discomfort to the woman. Turn to face the client's feet, tell the client to take a deep breath and on expiration, use both hands to palpate the lower abdomen. Face your client, use the right hand to grasp the lower pole of the uterus gently (Pawlick's grip) while the left hand steadies the uterus. This is to determine the presentation of the foetus and engagement of the head. You can ballot the head between the fingertips of the two hands because of the free movement of the neck.

8.4.6 Auscultation

Place your Pinnard's foetal stethoscope on the mother's abdomen at right angle to it, then place your ear firmly in close contact with the stethoscope but your hand should not touch it while listening. This is to avoid extraneous sounds. You can move the stethoscope until the point of maximum intensity is located, where the foetal heart can be heard most clearly.

It is like the ticking of a clock under a pillow. Use your watch with "second hand" to count the foetal heart rate for 1 minute and compare with maternal pulse. This is to ensure that you are not taking the maternal pulse for the foetal heart rate. The foetal heart sound is usually more rapid than the maternal pulse.

***Figure 8.6**: Using Pinnard's foetal stethoscope for Auscultation*

You can also use digital Doppler device to count the foetal heart rate.

***Figure 8.7:** Using Doppler device for Auscultation*

Summary of Study Session 8

In study session 8, you have learned that:

1. Screening tests are done for all pregnant women during antenatal booking and during subsequent antenatal care visit.
2. There is a reason for carrying out screening tests for pregnant women.
3. There is different between screening tests and diagnostic tests

4. You have roles to play as a midwife before, during and after screening tests.
5. Physical examination of a pregnant woman includes head to toe examination with emphasis on the abdomen.
6. Abdominal examination of a pregnant woman is very important and has to be done step by step. It also has to be done in detail.
7. There is need to prepare your client for physical examination, especially the abdominal examination.
8. Necessary precautions need to be taken while conducting abdominal examination for your client.

Self-Assessment Questions (SAQs) for Study Session 8

Now that you have completed this study session, you can assess how well you have achieved its Learning Outcomes by answering these questions. You can check your answers with the Notes on the Self-Assessment Questions at the end of this Module.

SAQ 8.1

1. Outline the screening tests that you will do for your client early in pregnancy.
2. What can the result of urinalysis show?

SAQ 8.2

1. Mention 2 objectives of conducting abdominal examination for a pregnant woman
2. Outline 3 major things you will out for while inspecting the abdomen of a pregnant woman

Notes on Self Assessment Questions for Study Session 8

1. The screening tests done early in pregnancy are:
Complete blood count
Blood type
Urinalysis
Rubella test
Sexually transmitted Diseases test
Hepatitis test.
2. Result of urinalysis can show; presence of glucose and/or presence of protein. The result of urine culture test can also show presence of bacteria.

SAQ 8.2

Objectives f abdominal examination of a pregnant woman include:
1. To note the contour, the shape and the size of the abdomen.
2. To observe for the presence of scar and foetal movement.
3. To assess fundal height.
4. To determine the lie and presentation of the foetus. (Any 2)

Major things to look out for while inspecting the abdomen of a pregnant woman include:
Its shape and size
Presence of lineanigra and striaegravidarum
Presence of scar.

Study Session 9: Prenatal Health Education and High Vagina Swab

Introduction

The midwives play a significant role in the process of providing patient education during pregnancy. A pregnant woman, especially the first-time mother, may have many questions and concerns about this period in her life. Much of the information she may have is probably inaccurate or incomplete.

You, as a midwife must provide accurate and complete information. This information include; personal and environmental hygiene, diet in pregnancy, preparation for labour and delivery, immunization, as well as family planning.

In this study session you will learn about prenatal health education, the definition of High Vaginal Swab (HVS), the objective of this procedure, as well as the equipment needed for this procedure.

Learning Outcomes for Study Session 9

When you have studied this session, you should be able to:

9.1 Highlight the Types of Education for Prenatal Clients Preparing for Parenthood
9.2 Discuss Layette Planning
9.3 Outline the various topics for prenatal planning
9.4 Discuss the concept of High Vaginal Swab

9.1 Types of Education for Prenatal Clients Preparing for Parenthood

Individual teaching and counselling, information groups, discussion or counselling groups, and prepared childbirth groups are the types of education that are presented in this study session.

Figure 9.1: *Individual teaching and counselling*
Source: *http://livingstoncatholiccharities.org/?page_id=82*

a. **Individual Teaching and Counselling**.

1. One-to-one teaching. This type of teaching is used in all nursing settings. It teaches on an individual basis as needed. One-to-one teaching is beneficial in teaching patients to understand and to adapt to health problems with a pregnancy.
2. Counselling. This entails an interchange of opinions or giving of advice. It is more personal and feeling-oriented. When counselling is used in combination with facts, it enhances learning. It takes into account the patient's feelings.

b. **Information Groups**.

1. These are planned groups to serve everyone in the community. It provides information on the physiology of childbearing, general hygiene, nutrition during pregnancy and lactation, preparations for the baby, and care of the mother and baby after delivery.
2. Methods of presentation include lecture, films and slides, questions and discussion, and tours of appropriate areas (labour and delivery, new-born, and postpartum).
3. These groups are organized by the American National Red Cross, the YWCA, Public Health Departments, Adult Education Programs at community schools/colleges, hospitals, and groups of physicians.

Figure 9.2: *Group Counselling*

c. **Discussion or Counselling Groups**.

1. There is no structured curriculum for this type of teaching. Discussion is developed from the contributions of group members. The group leader must be knowledgeable and able to discuss all topics concerning obstetric and new-born care.
2. This type of instruction has the advantage of not limiting the discussion to certain topics as done in class groups. It allows for more participation and involvement by the parents. Remember, it takes a highly qualified individual who is good at listening but who is also capable to keep the discussion going.

d. **Prepared Childbirth Groups**.

1. This is a form of informational instruction but includes active participation by the group to prevent the fear-tension-pain mechanism of labour. It is designed to eliminate fear during pregnancy.
2. Facts taught concern:
   a. Anatomy and physiology of childbearing.

b. Appropriate care of the pregnant woman.
c. Sensations likely to accompany labour.
d. Methods to work cooperatively with the sensations.
e. Exercises to strengthen muscles in labour.
f. Breathing techniques to develop relaxation during labour.
g. Needs of the baby after birth.
h. Information about growth and development.

9.2 Layette Planning

A layette is considered as the clothing and supplies needed to care for the infant following birth. Parents in classes are encouraged to prepare for the infant's arrival before birth. Baby showers are usually given by the family and friends to help provide some of the necessary items. Some clothing and care items are taken to the hospital to bring the infant home.

It is important to remind new parents that infants grow quickly. Encourage them to not buy a lot of new-born items; infants outgrow clothes very quickly, and in some cases, the clothes are never worn.

Table 9.1 shows items that are commonly found in a layette.

Clothing	Supplies
Diapers (disposable or cloth) Nightgowns, clothing sets Sweaters, cap, booties	crib, bassinette, or cradle Diaper pail, may be diaper plan Bottles, nipples, formula(when necessary) Car seat, blankets, crib sheets Diaper pins, rubber sheets Towels, washcloths, bath lotion

9.3 Various Topics for Prenatal Education

Principles of Proper Nutrition

a. **Good Nutrition**. Good nutrition during pregnancy is essential for:

1. The well-being of the mother and the developing foetus.
2. Development of effective uterine musculature.
3. Development of breast tissue.
4. Development of an adequate functioning placenta. Poorly nourished mothers have placentas with fewer and smaller cells. Also, poorly developed placentas have a **reduced** ability to synthesize substances needed by the foetus, to facilitate the flow of needed nutrients, and to inhibit passage of potentially harmful substances.
5. Development of infant's weight, length, bones, and brain. A nutritionally deprived foetus may have decreased development of brain cells. If optimum nutrition is provided after birth, the effects on the brain may be reversible.
6. Continued development of the infant after birth.

b. **Chronic Malnutrition**. This has been shown to be related to reproduction problems (this includes difficulties during pregnancy, labour, and delivery), increased perinatal mortality, low birth weight, and other problems with the new-born.

c. **Nutritional Risk Factors in Pregnancy that Require Observation**.

1. Risk factors at the onset of pregnancy.

a. Adolescence. Many adolescents are nutritionally at risk due to a variety of complex and interrelated emotions and social and economic factors that may adversely affect dietary intake. Their nutritional needs are greater and pose much concern from nurses and physicians.

b. Frequent pregnancies. These pregnancies may have depleted nutrient stores. This situation can compromise maternal and foetal health and well-being.

c. Poor reproductive history. Previous poor weight gain, pregnancy-induced hypertension (PIH), previous stillbirth or small for gestational age (SGA) baby, premature delivery, and prenatal infection are all common in women who are or have been poorly nourished in the past. These women may need more than the usual nutrition guidance.

d. Economic deprivation. This refers to the pregnant patient who is not able to afford proper food. There are several programs that help with the purchase of food or that offer supplements.

e. Bizarre food patterns. This includes faddish diets. A woman may enter pregnancy either having or continuing to be on a faddish or otherwise nutritionally inadequate diet.

f. Vegetarian diets. This diet may not contain any or enough protein or vitamins for a developing foetus. Intense nutritional counselling will be required to work out a diet pattern during the prenatal period.

g. Smoking, drug addiction, and alcoholism. Physiologic problems may have been present. Pregnant patients who indulge in this category may have major physiologic problems. There is the possibility that the patient may not consume sufficient quantities of nutritious foods and, in addition, can cause major problems to the foetus.

h. Chronic systemic disease. There may have been medical problems, which may have interfered with ingestion, absorption, or utilization of nutrients. Drugs used to treat these conditions may also affect nutrition by similar interference. Counselling should include general nutrition guidelines for prenatal care and diet therapy.

i Pre-pregnant weight. This may be at risk if the patient is fifteen percent or more below or twenty percent or more above the standard weight for health.

2. Risk factors identified during pregnancy.

a Anaemia of pregnancy. Many pregnant patients have a lack of iron stores large enough to meet the needs of pregnancy.

b. Pregnancy-induced hypertension (PIH). This may be seen in more patients with poor diets. However, there is no definite documentation of PIH's relationship to the diet.

c. Inadequate weight gain. This may be an indication of maternal and foetal malnutrition (intrauterine growth retardation (IUGR)). It is important to document the pattern of weight gain in pregnancy as well as the total amount of weight gained.

d. Excessive weight gain. This may be due to fluid retention. However, the pregnant woman should be carefully assessed for PIH.

d. **Caloric Requirements of Pregnancy**.

1. Daily caloric requirements for a pregnant woman are about 300 more than their normal requirements of 2300 to 2700 calories. The exact requirements are dependent on the patient's age, multiple birth, and the patient's activity. Calories should be selected for **quality** rather than **quantity**. "Empty calories" do not count.
2. Pregnancy is not the time to correct weight problems. Maintenance of a minimum of 1500 calories a day is essential for foetal development throughout the pregnancy. Patients who gain extra weight the first seven months then decide to cut back so as not to go overweight deprive the foetus of:

a. Nutrients necessary when the foetal brain cells are growing the fastest.
b. Nutrients necessary when the protective layer of fat is being developed.

3. Foods rich in protein, iron, and essential nutrients are recommended to be eaten on a daily basis. During the first two trimesters of pregnancy, iron is transferred to the foetusin moderate amounts, but during the last trimester when the foetus builds its reserve, the amount transferred is accelerated ten times.
4. Recommended weight gain for a normal pregnancy is 24 to 30 pounds. See figure 9.3 for the distribution of weight gained after 40 weeks of pregnancy.

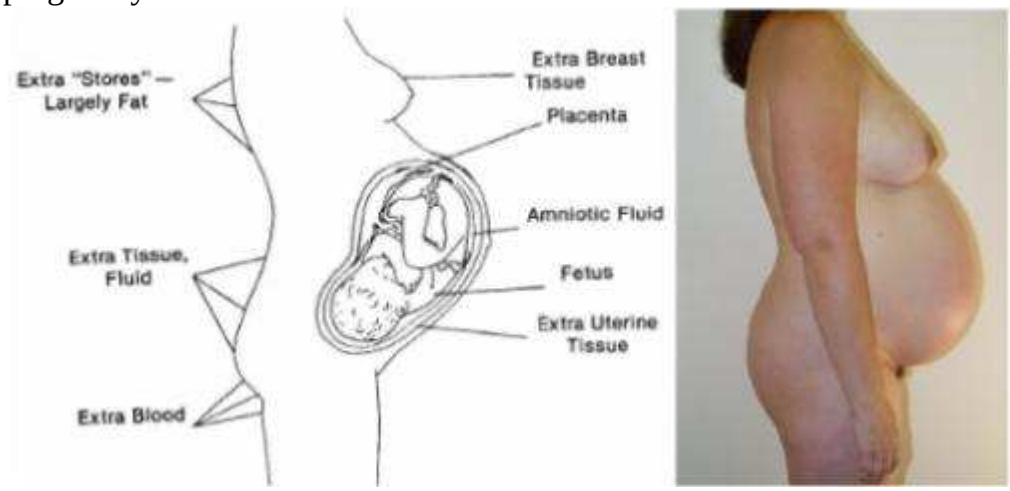


Figure 9.3: *Distribution of normal weight gain*

e. **Menu planning**. A diet consisting of a variety of foods can supply needed nutrients. The increased quantities of essential nutrients needed during the pregnancy may be met by skilful planning around the basic four food groups. The recommended daily intake from the basic four food groups are as follows:

1. Milk group-32 oz or 1000 ml per day.
2. Meat group-4 servings per day to include:
    a. Beef, veal, pork, poultry, or fish.
    b. Eggs each day.
    c. Liver once a week.
3. Vegetable and fruit group.
    a. 2 servings daily of dark green or yellow vegetables.
    b. 2 servings daily of fruit.
4. Bread and cereal group-4 servings per day.

Figure 9.4: *Menu planning*

9.3.1 Cravings during Pregnancy

a. **Craving**. This is a strong desire for a certain type of food, usually carbohydrates.

b. **Pica**. This is an intense craving for and ingestion of non-nutritive substances such as clay, laundry starch, raw flour, and rice. This type of craving is characteristic of but is not limited to lower socioeconomic groups, ethnic groups, and regional areas, which prefer certain substances. Even though the cause is unknown, it interferes with good nutrition. Pica appears to be related to iron deficiency anaemia as either a cause or an effect.

c. **Treatment or Counselling**.

1. Anything that depresses good nutritional intake should be evaluated. This type of depression may be caused by nausea or vomiting, food fads or lack of finances, smoking or alcoholism, or personal or social problems. If a problem is identified, it should be reported to the charge nurse or physician for appropriate referral to the correct people who can relieve or eliminate the problem.
2. Total dietary intake on a daily basis may need to be assessed.
3. Dietary needs of pregnancy should be reinforced at every visit to the doctor.

9.3.2 Obesity

a. Obesity is common and frequently a serious problem among Americans. The patient is considered overweight if she is 10 percent over her desirable weight for their height and age group. If the patient is 20 percent over her desirable weight at the beginning of the pregnancy, she is considered at risk.

b. These patients require close observation and additional education. The most frequently prescribed diet is 1500 to 1800 calories per day. The patient must be advised that this is not the time to diet to lose weight. Encouragement is greatly needed during the pregnancy.

9.3.3 Teratogens

a. A teratogen is an agent or factor that causes the production of physical defects in the developing foetus.

b. Many drugs are known to have teratogenic effects on the foetus if taken during pregnancy. Drugs are the most widely recognized cause of structural defects in

the developing foetus. Patients need to be cautioned about taking any medication without a physician's approval. Over-the-counter medicines such as nose drops, cold remedies, and sleep medications may cause problems.

1. Examples of known effects:

a. Physical abnormalities - no arms or legs.
b. Haemorrhage or jaundice.
c. Neurologic symptoms.
d. Abnormal dental pigmentation.
e. Addiction.
f. Vaginal malignancy or altered sperm causing infertility.

2. The effects of many drugs may not be known until later years during the growth and development of the child.

c. Teratogenic drug examples.

1. Thalidomide-used in England in the 1950's and 1960's as a sedative.
2. Phenytoin (Dilantin)®-used for seizures.
3. Methotrexate®-used to treat neoplastic diseases.
4. Diethylstilbestrol®-used for vasomotor symptoms during menopause.
5. Accutane® -used to treat cystic acne.

d. Teratogenic viruses and parasites.

1. Herpes simplex.
2. Rubella (German measles).
3. Toxoplasmosis. This is transmitted by cat faeces and raw meat.
4. Influenza or viral infections in the early weeks of pregnancy.

e. Other teratogenic conditions.

1. Hyperthermia.
2. Maternal disease (diabetes).
3. Maternal malnutrition.
4. X-rays should be avoided. Radiation from the x-rays can cause deformity of the foetuses if exposed in the first trimester.
5. Environmental pollutants.
6. Lead.
7. Increase in maternal age.
8. Tobacco and alcohol.

f. Patients need to be reminded of the potential dangers of the things they may do or take. The worst damage to the foetus is done in the early weeks of the pregnancy before she even knows she is pregnant.

9.3.4 Preparation for Labour and Delivery

a. **Relaxation and Psychological Control of Pain**. Several methods of relaxation and psychological control of pain during labour are listed below:

1. Lamaze method (Psychoprophylactic method-PPM). This method is the most widely taught. It deals with combating the fears associated with pregnancy by teaching relaxation and breathing techniques.

a. The patient is taught to replace responses of restlessness and loss of control with more useful activity.

b. The patient is taught to respond to pain with respiratory activity and relaxation of uninvolved muscles.
c. The patient is taught controlled breathing and mind-focusing techniques.
d. The partner is taught to help the patient stay in control.

2. Bradley method (husband-coached childbirth). This is similar to the Lamaze method. Emphasis is placed on slow, deep breathing along with complete relaxation. Women using this practice often appear to be asleep during labour. However, they are not asleep, but are simply in a state of deep mental relaxation.
3. Hypnosis. This is an induced state of extreme suggestibility in which the patient is insensible to outside impressions except the suggestion of her attendant.

b. **Signs of Approaching Labour**. These signs of approaching labour are taught to all patients. When the patient notices them, she is aware that labour will be forthcoming. The signs are:

1. Lightening. This is the descent of the foetus into the brim of the pelvis (dropping). Lightening occurs in the last 10 to 14 days of pregnancy in a primigravida. It may not occur until actual onset of labour in multigravidas. The patient identifies it as being able to breathe easier.
2. False labour (Braxton-Hicks Contractions). This is intermittent uterine contractions occurring at irregular intervals, which serve to tone the uterus.
3. "Show." This is when the blood-tinged mucoid vaginal discharge becomes more pronounced and red as cervical dilatation increases during labour.
4. "Burst of energy." This is an increase in energy level. It occurs approximately 24 hours before onset of labour. The patient should be advised to relax during this time since labour will be starting soon.
5. Rupture of membranes. This occasionally may be the first sign. Due to the risk of the prolapse cord, the patient needs to be aware that she should come to the hospital immediately even if she is not having contractions. If the membranes rupture prematurely, it then becomes a complication.
6. Frequent urination. This, again, becomes a problem in the last stages of pregnancy. Pressure on the bladder is due to the enlarging uterus and the head settling back into the pelvis.

In-text question

Take a moment to reflect on what you have read so far, outline five topics you will teach your client during prenatal health education.

In-text answer

During prenatal education, a midwife can teach various topics such as:

- Principles of proper nutrition
- Cravings during pregnancy
- Obesity
- Teratogens
- Preparation for labour and delivery

9.3.5 Steps in Giving Prenatal Education

1. Greet and introduce yourself. This will give room for creating rapport with your client.
2. Inquire of your client's wellbeing.
3. Introduce the topic
4. Assess pre-entry knowledge of your client
5. Explain the topic
6. Explain how the topic is related to the wellbeing of both the mother and foetus.
7. Allow your client to ask question(s).
8. You can also ask question(s) to ensure that your client understood what she has been taught.

9.3.6 How to Maintain Group Dynamics

1. Maintain good eye contact
2. Your voice must be audible
3. You have to pace to and fro a bit
4. Avoid distractions
5. Communicate in the language of your audience
6. Give brief and precise education to avoid long waiting time
7. Identify with the culture of your client
8. Avoid mannerisms
9. Make good use of visual aids
10. Include demonstration while teaching procedures. For example, preparation of Oral Rehydration Therapy

9.4 The Meaning and Objective of High Vaginal Swab

High vaginal swab is collection of specimen with mounted swab from the highest point of the vaginal without interference with the vulva. The main objective of HVS is to collect specimen of upper vaginal discharge for laboratory investigation such as culture and sensitivity.

9.4.1 Equipment/Requisites

1. One bowl containing sterile cotton, gauze swabs and a sterile pad
2. One kidney dish with one pair of sponge holding forceps and one pair of sterile Cusco's vaginal speculum
3. A bowl containing sterile warm water
4. One tube for vaginal swab labelled with name and date
5. One pair of gloves in sterile package
6. One kidney dish for used swabs

The procedure

Step	**Rationale**
Explain the procedure to the patient	Solicit cooperation
Establish rapport	Allays fears
Allow the patient to pass urine	Prevents discomfort
Screen the bed	Provides privacy
Put patient in dorsal position with her legs drawn up her heels placed together and her knees fall wide apart or lithotomy position.	Allows clear view of vulva and vagina
Wash your hands and don the sterile gloves	Maintain asepsis
Swab vulva with sterile water, using one swab for each downward stroke beginning from the farthest side to the nearest side. Discard swab after each stroke.	Promotes asepsis
Insert the Cusco's speculum	Allows easy access and clear view of The vagina

Figure 9.5: *the Cusco's speculum*

Observe the cervix	To visualise the cervix and the fornices
Hold the swab stick and place swab in the posterior fornix towards the cervical os and collect specimen	Obtain specimen

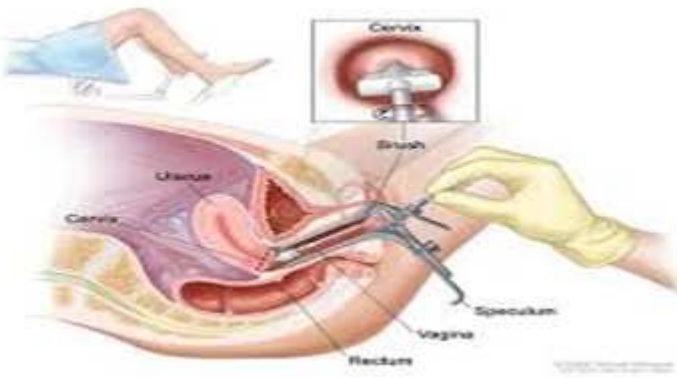


Figure 9.6: *Collection of HVS*

Source: *DLC, University of Ibadan*

Replace the swab in specimen container	Preserves specimen

Figure 7.2: *Swab stick*

Remove the speculum gently and dry the vulva area	Aids patient's comfort
Place the pad over vulva and instruct patient to close her legs	Maintain sterile field
Make your patient comfortable	Aids comfort
Remove the screen, discard swabs, wash utensils and sterilise.	Prevents cross infection
Record your observations, such as the condition of vagina and cervix	Allows for future plan of care

In-text question

Take a moment and reflect on what you have read so far, where do you have to place the swab to collect specimen for HVS?

In-text answer

To collect the specimen for HVS, you place the swab at the posterior fornix of the vagina, towards the cervical os.

The role of the midwife after collection of specimen

After the collection of the specimen, it is your role as a midwife to send the specimen to the laboratory, with the completed investigation form. It is also important for you to note the date and time the specimen was sent to the laboratory.

Summary of Study Session 9

In study session 9, you have learned:

1. Different types of prenatal education
2. Layette planning
3. Various topics you can teach your client during prenatal education
4. Steps in giving prenatal health education
5. How to maintain group dynamics while teaching a group of clients.
6. High Vaginal Swab is collected for laboratory investigation.

7. You need to maintain asepsis while collecting HVS.
8. You should provide privacy for your patient while collecting the specimen.
9. You have to make your patient comfortable after collecting the specimen.

Self-Assessment Questions (SAQs) for Study Session 9

Now that you have completed this study session, you can assess how well you have achieved its Learning Outcomes by answering these questions. You can check your answers with the Notes on the Self-Assessment Questions at the end of this unit.

SAQ 9.1

Mention four different types of prenatal education

SAQ 9.2

How would you define a layette?

SAQ 9.3

Outline the steps you will take while giving prenatal education

SAQ 9.4

How would you define High vaginal swab?

State your role as a midwife after the collection of HVS specimen

Notes

SAQ 9.1

Four types of prenatal education are:

Individual teaching and counselling

Information groups

Discussion or counselling groups

Prepared childbirth groups

SAQ 9.2

A layette is considered as the clothing and supplies needed to care for the infant following birth.

SAQ 9.3

- Greet and introduce yourself. This will give room for creating rapport with your client.
- Inquire of your client's wellbeing.
- Introduce the topic
- Assess pre-entry knowledge of your client
- Explain the topic
- Explain how the topic is related to the wellbeing of both the mother and foetus.
- Allow your client to ask question(s).
- You can also ask question(s) to ensure that your client understood what she has been taught.

SAQ 9.4

1. High vaginal swab could be defined as the collection of specimen with mounted swab from the highest point of the vagina without interference with the vulva.

2. After the collection of the specimen, it is your role as a midwife to send the specimen to the laboratory, with the completed investigation form. It is also important for you to note the date and time the specimen was sent to the laboratory.

Study Session10: Pelvic assessment and Vaginal Examination

Introduction

The assessment of the pelvis is the process by which the adequacy of the pelvis for the passage of the foetus is ascertained internally.

In this study session, you will learn about the aims of pelvic assessment during pregnancy and the preparation of the client before this procedure. You will also be learning about the indications for vaginal examination but the class will explain in detail vaginal examination in labour. Also, it will discuss the objectives and requisites/equipment for vaginal examination.

The study session will conclude with the description of the procedure for pelvic assessment and the detail procedure for vaginal examination.

Learning Outcomes for Study Session 10

When you have studied this session, you should be able to:

10.1 Discuss the concept of Pelvic Assessment

10.2 Discuss the concept of Vaginal Examination

10.1 The Meaning and the Policy guiding Pelvic Assessment

Definition: Pelvic assessment (pelvimetry) can be defined as a process by which the adequacy of the pelvis for the passage of the foetus is ascertained internally.

Policy: Pelvic assessment should be performed by an obstetrician or experienced midwife or a midwife who had undergone training on Life Saving Skill (LSS) at 36 weeks of pregnancy or during labour.

The specific objectives for pelvic assessment

1. The specific objectives for pelvic assessment are:
2. To know the size and shape of the pelvis
3. To detect a misfit between the foetal head and maternal pelvis (cephalo-pelvic disproportion).

Indications for pelvimetry

The followings are indications for pelvimetry

- All primigravidas towards the end of pregnancy
- Patients who have had previous prolonged or difficult labours for no apparent reason
- Vaginal birth after a previous caesarean section.

Equipment/Requisites (Tray or trolley)

1. One bowl with antiseptic lotion, e.g. savlon 1:40
2. One bowl with sterile cotton wool swabs and perineal pads
3. One gallipot with antiseptic cream e.g. Hibitane cream
4. Three sterile dressing towels
5. One pair of sterile gloves
6. One kidney dish with sterile urethral catheter (or make bedpan available)
7. One kidney dish for dirty swabs
8. Mackintosh to protect bed.

Preparation of the client

1. Explain the procedure, indications, what she may feel like and possible discomfort to the woman. This will prepare her psychologically for the procedure.
2. Ask your client to empty her bladder. This will facilitate comfort.
3. Position the woman in a dorsal position, with her thighs flexed and abducted. Instruct her to put the heels of her feet together. Drape the woman with a modesty sheet, leaving a flap to access the perineum. The position provides access to the perineum and the drape ensures privacy.
4. Encourage her to relax her muscles and legs, as relaxation decreases muscle tension and provide comfort.

Procedure

Step: Put on face mask, scrub hands under running water, dry and put on sterile gloves.

Rationale: maintain asepsis

Step: swab the vulva

Rationale: maintain asepsis

Step: Lubricate your index and middle fingers of your right hand (if you are right-handed person, and vice versa).

Rationale: lubrication provides easy insertion of fingers

Step: Insert your index and middle fingers into the vagina in an upward and backward direction.

Figure 10.1: *Assessing the condition of the vagina*

Rationale: assess the condition of the vagina, the cervix and the uterus. Assess the following pelvic diameters as follows:

Pelvic inlet:
Palpation of the pelvic brim: The index and middle fingers are moved along the pelvic brim. Note whether it is round or angulate.

Diagonal conjugate: Try to palpate the sacral promontory to measure the diagonal conjugate. Normally, it is 12.5 cm and cannot be reached. If it is felt the pelvis is considered contracted and the obstetric conjugate can be calculated by subtracting 1.5 cm from the diagonal conjugate .This assessment is not done if the head is engaged.

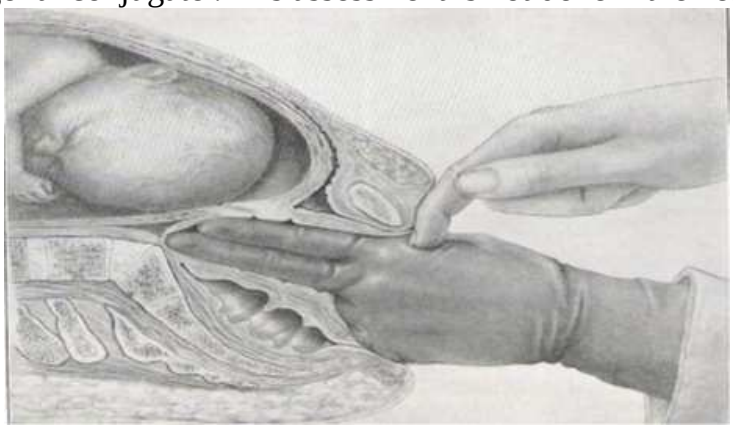
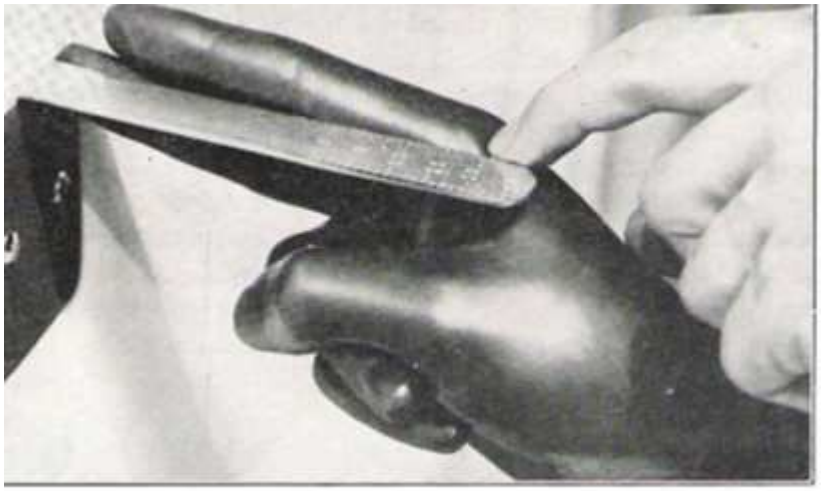


Figure 10.2: *Directional Conjugate*

If you are not sure about the measurements of your fingers, measure the distance from the top of your middle finger to where the lower part of the symphysis pubis touched the index finger, with a tape or ruler.



Metal scale fastened to wall for measuring the diagonal conjugate diam

Figure 10.3: *Tape for measuring the Pubis Symphysis*

The mid-cavity:
Shape and inclination of the **sacrum**.

Side walls: To determine whether it is straight, convergent or divergent

Ischial spines: Whether it is blunt (difficult to identify at all), prominent (easily felt but not large) or very prominent (large). The Ischial spines can be located by following the sacrospinous ligament to its lateral end.

Interspinous diameter: By using the 2 examining fingers, if both spines can be touched simultaneously, the interspinous diameter is 9.5 cm i.e. inadequate for an average-sized baby.

Sacrosciatic notch: If the sacrospinous ligament is two and half fingers, the sacrosciatic notch is considered adequate.

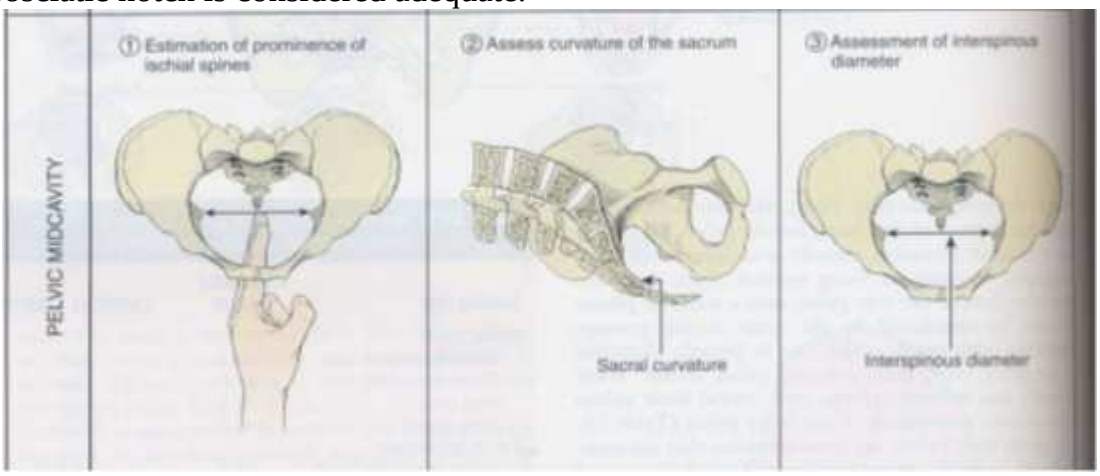


Figure 10.4: *Pelvic Midcavity*

Pelvic outlet:
Subpubic angle: Normally, it is 90°

Bituberous diameter: Normally, it admits the closed fist of the hand (4 knuckle).
Mobility of the coccyx: by pressing firmly on it while an external hand on it can determine its mobility.
Anteroposterior diameter of the outlet: from the tip of the sacrum to the inferior edge of the symphysis (>11.0 cm).

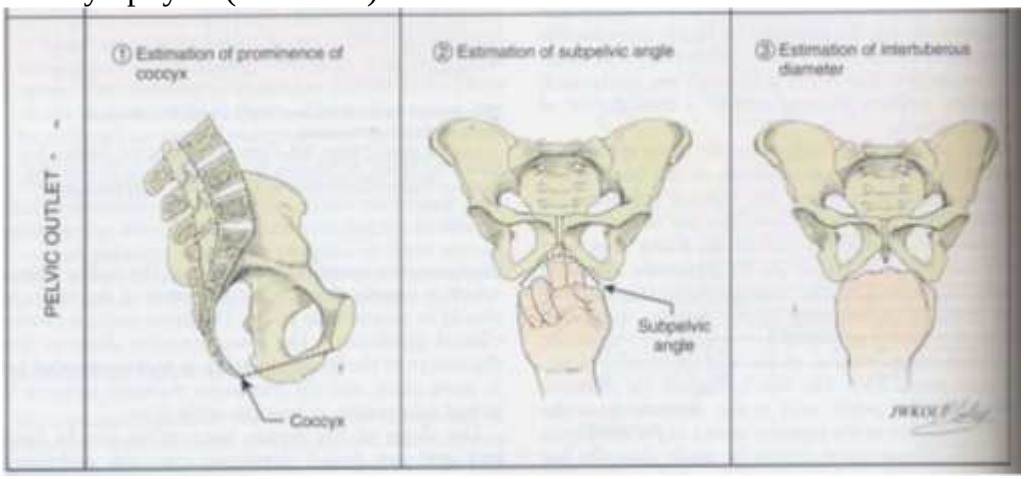


Figure 10.5*: Pelvic Outlet*

Methods

Figure 10.6:*Bituberous diameter*

Step: clean your client up

Rationale: makes your client comfortable
Step: record your findings on the vulva, vagina, cervix, uterus, pelvic inlet, Midcavity and the pelvic outlet. Such as; obstetric conjugate, prominence of the Ischial spines, the curve of the sacrum, prominence of the sacral promontory, the bituberous diameter, the angle of the pubic arch and the anteroposterior diameter of the pelvic outlet.
Rationale: allows for planning further care.

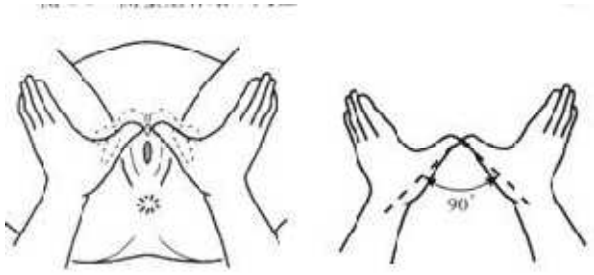


Figure 10.7: *Angle of pubic arch*

In-text question
Take a moment to reflect on what you have read so far, during clinical pelvimetry, what do you call the distance between the symphysis pubis and the sacral promontory.

In-text answer
Diagonal conjugate.

10.2 The Meaning and Objectives of Vaginal Examination

Vaginal examination can be defined as a digital exploration of the vagina to assess factors of pregnancy, labour, puerperium and gynaecological conditions.

Objectives: The objectives of vaginal examination include:

1. To assess status of the pelvis
2. To identify abnormalities
3. To assess the progress of labour
4. To assess pelvic capacity in relation to the foetal head in order to plan adequately for the appropriate mode of delivery.

Indications for vaginal examination

Vaginal examination has been indicated in pregnancy, labour, puerperium, gynaecological conditions and in family planning. You should not that a midwife is allowed to conduct vaginal examination in labour, puerperium and family planning. Hence, this class will focus on vaginal examination in labour.

Therefore, indications for vaginal examination in labour include:

- To make a positive diagnosis of labour
- To make a positive identification of foetal presentation
- To confirm rupture of membranes
- To rule out cord prolapsed
- To assess progress or delay in labour
- To assess cervical dilatation and effacement

Equipment/Requisites for vaginal examination

You should arrange the following on a clean tray:

- One bowl with antiseptic lotion, e.g. Savlon 1:40
- One bowl with sterile cotton wool swabs and perineal pads
- One gallipot with antiseptic cream, e.g. Hibitane cream.

- One pair of sterile gloves
- One kidney dish for dirty swabs
- Mackintosh

Preparation of client

- Explain the procedure, indications, what she may feel like and possible discomfort to the woman. This will prepare her psychologically for the procedure.
- Ask your client to empty her bladder. This will facilitate comfort.
- Position the woman in a dorsal position, with her thighs flexed and abducted. Instruct her to put the heels of her feet together. Drape the woman with a modesty sheet, leaving a flap to access the perineum. The position provides access to the perineum and the drape ensures privacy.
- Encourage her to relax her muscles and legs, as relaxation decreases muscle tension and provide comfort.

Procedure

Step: Put on face mask, scrub hands under running water, dry and put on sterile gloves.
Rationale: maintain asepsis
Step: swab the vulva
Rationale: maintain asepsis
Step: Lubricate your index and middle fingers of your right hand (if you are right-handed person, and vice versa).
Rationale: lubrication provides easy insertion of fingers
Step: Insert your index and middle fingers into the vagina in an upward and backward direction.
Rationale: Identify the conditions of the vulva, vagina, cervix and membranes. Identify the presenting part, position and station of the presenting part. Feel the consistency and the dilatation of the cervix (see figure 10.1)
Step: Report and record your findings on vulva, vagina, cervix, membranes and the presenting part.
Rationale: Ensure proper documentation for appropriate care.
Step: Clean up your client.
Rationale: This provides comfort for your client.

Documentation

Findings to be recorded on vaginal examination include:

- Condition of the vulva, i.e., oedema, varicose vein, warts or vaginal discharge
- Condition of the vagina, this should be normally warm and moist.
- Condition of the cervix, whether thin or thick, hard or soft, well or loosely applied to the presenting part.
- Dilatation of the cervical os.
- Membranes; whether intact or ruptured. If ruptured, the colour of the liquor must be noted, either blood stained, meconium stained or clear.
- Presentation; whether cephalic/vertex or breech
- Position; whether anterior or posterior

» Moulding and caput formation.

Contraindication for vaginal examination in labour

It is of great importance to you as a midwife to note that vaginal examination is contraindicated in antepartum haemorrhage.

Summary of Study Session 10

In Study Session 10, you have learned that:

1. Pelvic assessment is done at 36 weeks of pregnancy.
2. Pelvic assessment is performed by an obstetrician or an experienced midwife/a midwife with training in Life Saving Skill (LSS).
3. Pelvic assessment is done to ensure the adequacy of the pelvis in relation to the passage of the foetal presenting part.
4. Preparing your client before the procedure will enhance the cooperation of your client.
5. You can conduct vaginal examination as a midwife, both in labour and during family planning.
6. You need to maintain asepsis while conducting vaginal examination.
7. Vaginal examination is done in labour to assess the progress of labour
8. Vaginal examination is contraindicated in any form of antepartum haemorrhage**.**

Self-Assessment Questions (SAQs) for Study Session 10

Now that you have completed this study session, you can assess how well you have achieved its Learning Outcomes by answering these questions. You can check your answers with the Notes on the Self-Assessment Questions at the end of this unit.

SAQ 10.1

1. How would you define pelvic assessment?
2. State two (2) specific objectives of pelvic assessment.
3. How do you measure the obstetric conjugate?

SAQ 10.2

1. How do you define vaginal examination?
2. What are the indications for vaginal examination in labour?
3. Outline five (5) important findings you must record on vaginal examination in labour.

Notes on Self Assessment Questions for Study Session 10

SAQ 10.1

1. Pelvic assessment can be defined as a process by which the adequacy of the pelvis for the passage of the foetus is ascertained internally.

2. Two (2) specific objectives of pelvic assessment are:

1. The specific objectives for pelvic assessment are:
2. To know the size and shape of the pelvis
3. To detect a misfit between the foetal head and maternal pelvis (cephalo-pelvic disproportion).

3. After preparing the client, wash and scrub your hands, don your face mask and sterile gloves. Lubricate your index and middle fingers. Move your index and middle fingers along the pelvic brim. Try to palpate the sacral promontory to measure the diagonal conjugate. Normally, it is 12.5 cm and cannot be reached. If it is felt the pelvis is considered contracted and the obstetric conjugate can be calculated by subtracting 1.5 cm from the diagonal conjugate.

SAQ 10.2

1. Vaginal examination could be defined as a digital exploration of the vagina to assess factors of pregnancy, labour, puerperium and gynaecological conditions.
2. Indications for vaginal examination in labour include:
   - To make a positive diagnosis of labour
   - To make a positive identification of foetal presentation
   - To confirm rupture of membranes
   - To rule out cord prolapsed
   - To assess progress or delay in labour
   - To assess cervical dilatation and effacement
3. Findings to be recorded on vaginal examination include:
   - ❖ Condition of the vulva, i.e., oedema, varicose vein, warts or vaginal discharge
   - ❖ Condition of the vagina, this should be normally warm and moist.
   - ❖ Condition of the cervix, whether thin or thick, hard or soft, well or loosely applied to the presenting part.
   - ❖ Dilatation of the cervical os.
   - ❖ Membranes; whether intact or ruptured. If ruptured, the colour of the liquor must be noted, either blood stained, meconium stained or clear.
   - ❖ Presentation; whether cephalic/vertex or breech
   - ❖ Position; whether anterior or posterior
   - ❖ Moulding and caput formation.

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